INTRODUCTION

It is my great pleasure to introduce the preliminary program of the 12th edition of EUCAS. The conference is organized on behalf of the European Society of Applied Superconductivity (ESAS).

We come closer together another prestigious society: IEEE-CSC with whom we experience an excellent cooperation. A large number of papers will be so published in a special issue of IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY.

The international program committee has put together an extensive program, consisting of more than 1000 papers from over 50 countries, and organized in parallel technical sessions and poster presentations from over 50 countries. In addition, we are facilitating three special sessions. We have lined up a number of prestigious plenary speakers who will address the state of the art of most international projects.

I would like to acknowledge the members of the program committee for their contributions to the abstract reviewing process and the program organization. I would like to thank one again our industrial sponsors and institutional partners. Of course this conference could not be organized without the hard work of the local Grenoble committee, a large thank to them.

We look forward to an exciting conference, with high-quality scientific exchanges and many opportunities to build your network, to reinforce or initiate collaborations, foster discussions and take back home fond memories of the city of Lyon.

Yours sincerely.

Grenoble, July 2015.

Pascal Tixador
Conference Chair of EUCAS 2015
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SCIENTIFIC PROGRAM

Plenary sessions

Dr. Bernard Bigot
Director-General of ITER Organization

"Superconductivity and Fusion: an enabling technology for the success of ITER"

ITER is an essential step on the road to the demonstration of the scientific and technological feasibility of thermonuclear fusion as a sustainable source of energy for Humankind. The ITER Tokamak is designed to achieve stable plasma discharges ranging from 500 s with a fusion power of 500 MW to steady state burns of 400MW, with an energy amplification factor (Q) of 10. It is a test bed for critical fusion reactor technologies, such as plasma facing components and high power plasma heating sources, and should demonstrate the safety and low environmental impact of fusion power.

ITER is an unprecedented political and management challenge between 7 partners (China, Europe, India, Japan, Russia, South Korea and the United States) representing more than half the world population, who provide 90% of the components as in-kind contributions. At the heart of the reactor will be one of the most sophisticated superconducting magnet systems ever built, contributed by six of the ITER partners and representing about 20% of the ITER cost.

The system offers many design and manufacturing challenges, including: the total weight of advanced Nb3Sn superconducting strands required (nearly 700 tons), which has called up for an unprecedented world-wide ramp up of industrial production capability from a state of a few tones/year, the coil sizes (over 300t for individual coils), which raise huge manufacturing and handling issues, the impressive stored energy (51 GJ), which requires special quench detection and protection techniques and very high voltage advanced insulation technology at 30kV, the assembly of components with dimensions up to 25m with tolerances of a few millimeters and finally a successful commissioning following the enforcement of rigorous and uniform QA/QC to nuclear safety standards and procedures for all suppliers from the 6 partners involved, supported by careful performance qualification of subcomponents. Manufacturing of this system is now well advanced, with for example about 500t of Nb3Sn strand completed, and cabled into conductors ready for winding.

Series production of some of the coils is already underway and all the most critical performance tests of subcomponents have been successfully passed, giving full confidence that the system will achieve its overall performance and reliability goals.
Dr. Teruo Izumi  
Deputy Director General Concurrent Division Director,  
International Superconductivity Technology Center (ISTEC), Kanagawa, Japan

*REBCO coated conductors in Japan - status and future*

Since the discovery of HTS, lots of efforts for realizing long REBCO coated conductors (CCs) with high performances have been made in the world. In Japan, large national projects have pushed the development, and extremely high performances have been achieved. In this presentation, the history, current status and future prospects of R&D for CCs in Japan are reviewed.

Prof. Denis Le Bihan  
Member of the Institut de France (Academy of Sciences) and of the Academy of Technologies  
Visiting Professor, Kyoto University Graduate School of Medicine  
Head of NeuroSpin, CEA, Saclay, France.

*"Perspectives for Ultra-High Field Magnetic Resonance Imaging"*

The understanding of how the human brain works has considerable potential, not only for health care (addressing the expenses of managing neurological and psychiatric patients or simply aging populations), but also for improving human cognition in general (through improved teaching methods, communication between individuals, development of human-machine interfaces, etc...). At NeuroSpin our aim is to explore the brain at spatial and temporal scales which may give access to the neural code, by pushing the current limits of brain imaging, from mouse to man, as far as possible with ultra-high magnetic field (UHF) Magnetic Resonance Imaging and Spectroscopy. NeuroSpin is being equipped with unique MRI systems operating at very high magnetic field strengths not yet available anywhere in the world, as well as related tools and an advanced computer platform. Our "world first" equipment include a 17.2T 250mm horizontal magnet (installed in 2010) and a 900mm 11.7T whole-body system (to be delivered in 2015). NeuroSpin is thus in good position to address either methodological developments or neuroscience and clinical applications of MRI. Results are expected to impact not only health care, but also industry, artificial intelligence, social sciences and the humanities.

Prof. Jérôme Lesueur  
Phasme team, Physics and Materials Laboratory (LPEM)  
ESPCI-CNRS-UPMC, Paris, France.

*"High Tc superconducting electronic devices"*

High Tc superconducting devices based on Josephson Junctions offer new opportunities for cryo-electronics, with possible high speed and high temperature operation. Significant improvements have been made in the recent years to develop reliable and scalable technologies to produce Josephson Junctions based circuits. I will review the most recent achievements in the field, with an emphasis on the emerging ion irradiation technology, and its applications to high frequency applications.
Dr. Rainer B. Meinke
Chief Scientist
Advanced Magnet Lab, Inc.,
Palm Bay, Florida,
USA

"Magnetic Radiation Shielding for Space Exploration"
Radiation level in space due to solar particle events and galactic cosmic rays constitutes a major hurdle for human exploration of the solar system. Envisioned missions to near asteroids or to Mars will last for many months and the maximum allowed radiation exposure dose for astronauts could only be guaranteed with substantial radiation shielding surrounding the habitat of a spaceship. An overview of potential radiation shielding technologies will be presented with an emphasis on magnetic shielding based on ultralight expandable magnets surrounding the spaceship habitat.

Prof. Teresa Puig
Institut de Ciència de Materials de Barcelona, CSIC
Bellaterra, Spain

"Nanocomposite Coated Conductors: towards optimal vortex pinning for high field applications"
Upon the revolution of HTS Coated Conductors (CC), Nanocomposites emerged as a smart conception to leap forward CC cost/performance to materials device integration levels. Physical and chemical growth methods undertook their remarkable developments with outstanding success. Now, Europe is immersed in a large cooperation program in Nanocomposite Coated Conductors. I will review its state of the start in context with the world-wide effort, with special emphasis in materials synthesis, vortex pinning and integration to high field applications.

Prof. Marina Putti
University of Genova and CNR-SPIN,
Genova, Italy

"MgB$_2$ and the Iron-based superconductors"
In the last few years new superconducting materials with intriguing properties suitable for wire developments have come on stage: MgB$_2$ and the Iron-based superconductors. The different nature of their superconductivity, as well as the different chemistry of these materials, have implications for their range of applicability. The lecture will give an overview of the superconducting properties and of the achievements in wire production and applications.
“Superconducting metamaterials”
Metamaterials are artificial engineered media that enable tailored interactions with electromagnetic waves. The design flexibility of superconducting thin-film resonators and Josephson circuits allows for utilizing small structures down to the nanoscale while maintaining low loss properties, very strong and well-controlled nonlinearity, and frequency tunability in the microwave and mm-wave frequency ranges. An interesting spin-off here is going to be quantum metamaterials comprised of arrays of superconducting qubits.

“Status of superconducting materials and applications in China”
In this presentation, the recent progress of R&D in China on Low Tc Superconductors (including NbTi, Nb3Sn and Nb3Al) and High Tc Superconductors (including YBCO, BSCCO, MgB2 and iron pnictides) and the status of their applications in power grid, accelerators, medical equipment and propulsion have been reviewed.

“Kinetic Inductance Detectors for Astrophysics”
In the two-fluid model introduced by Heinz London in 1934, the current in a superconductor includes contributions from both superconducting and normal electrons, corresponding to the familiar Cooper pairs and quasiparticles of the BCS theory. The pairs are lossless but have inertia, while the normal electrons are dissipative. Thus, in a circuit, the pairs contribute an inductance - the kinetic inductance - while the normal electrons contribute resistance. Absorption of energy - e.g. photons - capable of breaking the pairs into individual quasiparticles results in changes to both the inductance and resistance. These changes may be measured with high sensitivity through use of a resonant circuit, which also introduces the possibility of frequency multiplexing. Over the past fifteen years, these simple ideas have been exploited to develop a variety of detector arrays for diverse applications in astrophysics across the spectrum, from millimeter to optical wavelengths. I will describe the basic physics, the development of the field, the current status, spin-offs, and provide examples of instruments currently being developed and deployed as well as some future applications.
Monday September 7, 2015

Plenary 1 - 9:45-10:30
Location: Auditorium Lumière
Chair: Prof. H. Freyhardt, Universitaet Goettingen & ZFW GmbH Goettingen, Germany

Dr. Bernard Bigot (Director-General of ITER Organization)
“Superconductivity and Fusion: an enabling technology for the success of ITER”

Plenary 2 - 11:00-11:45
Location: Auditorium Lumière
Chair: Prof. Xavier Obradors, ICMAB Barcelona

Prof. Jérôme Lesueur (Physics and Materials Laboratory - ESPCI-CNRS-UPMC, France)
“High Tc superconducting electronic devices”

Plenary 3 - 11:45-12:30
Location: Auditorium Lumière
Chair: Prof. Xavier Obradors, ICMAB Barcelona

Dr. Teruo Izumi (International Superconductivity Technology Center (ISTEC), Japan)
“REBCO coated conductors in Japan - status and future”

Tuesday September 8, 2015

Plenary 4 - 8:30-09:15
Location: Auditorium Lumière
Chair: Dr. Elie K. Track, CEO, nVizix LLC, past President, IEEE-CSC

Prof. Pingxiang Zhang (President of Northwest Institute for Nonferrous Metal Research Xian, China)
“Status of superconducting materials and applications in China”

Plenary 5 - 9:15-10:00
Location: Auditorium Lumière
Chair: Dr. Elie K. Track, CEO, nVizix LLC, past President, IEEE-CSC

Prof. Alexey Ustinov (Physikalisches Institut, Karlsruhe Institute of Technology, Germany)
“Superconducting metamaterials”
Wednesday September 9, 2015

**Plenary 6 - 8:30-09:15**  
*Location: Auditorium Lumière*  
*Chair: Prof. Judit Driscoll, University of Cambridge*

Dr. Rainer B. Meinke (Chief Scientist - Advanced Magnet Lab. Inc., USA)  
“Magnetic Radiation Shielding for Space Exploration”

**Plenary 7 - 9:15-10:00**  
*Location: Auditorium Lumière*  
*Chair: Prof. Judit Driscoll, University of Cambridge*

Prof. Teresa Puig (Institut de Ciència de Materials de Barcelona, CSIC, Spain)  
“Nanocomposite Coated Conductors: towards optimal vortex pinning for high field applications”

Thursday September 10, 2015

**Plenary 8 - 8:30-09:15**  
*Location: Auditorium Lumière*  
*Chair: Dr. Hiroyuki Ohsaki, The University of Tokyo*

Prof. Jonas Zmuidzinas (George W. Downs Laboratory of Physics, California Institute of Technology, USA)  
“Kinetic Inductance Detectors for Astrophysics”

**Plenary 9 - 9:15-10:00**  
*Location: Auditorium Lumière*  
*Chair: Dr. Hiroyuki Ohsaki, The University of Tokyo*

Pr. Denis Le Bihan (Member of the Institut de France and of the Academy of Technologies, head of NeuroSpin, CEA, Saclay, France)  
“Perspectives for Ultra-High Field Magnetic Resonance Imaging”

**Plenary 10 - 10:30-11:15**  
*Location: Auditorium Lumière*  
*Chair: Prof. David Cardwell, University of Cambridge*

Prof. Marina Putti (University of Genova and CNR-SPIN, Italy)  
“MgB₂ and the Iron-based superconductors”
GENERAL PROGRAM

Notes about the acronyms used to identify the sessions. The session codes are in the form 1A-LS-O1 for orals and 1A-LS-P-01 for posters.

The first character refers to the day:
1 => Monday
2 => Tuesday
3 => Wednesday
4 => Thursday

The second character refers to the time of day:
M: Morning
A: Afternoon

The next one or two refers to the topic:
E: Electronics
LS: Large Scale
M: Materials
WT: Wires and Tapes

The one following refers to the type of communication:
O: oral
P: Poster

The last refer to the session number

Posters:
All the poster sessions take place in the Exhibition and Poster hall.
## ORAL SESSIONS

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Wednesday September 9, 2015

3M-E-O1 Microwave and THz devices
3M-E-O2 Detectors III
3M-LS-O1 Selected large systems and common issues
3M-LS-O2 Fault current limiters
3M-M-O1 Vortex flux pinning II
3M-M-O2 LTS, BSCCO and others
3M-WT-O1 Conductor developments

3A-E-O1 SQUID SQIFS: systems and applications
3A-E-O2 Detectors IV
3A-LS-O1 Modelling for applications (Special session)
3A-LS-O2 Superconducting machines and transformers
3A-LS-O3 Large magnets for high energy physics and fusion
3A-M-O1 Transport properties
3A-WT-O1 Coated conductors

Rhône 2
Salon Pasteur
Salon Pasteur 2
Auditorium Pasteur
Auditorium Pasteur
Auditorium Lumière
Auditorium Lumière
Auditorium Lumièr
Saint Clair 3
Rhône 3+4

Driven by Internet traffic, cloud computing, smartphones usage and intensive data crunching applications, the growth of the number of supercomputers is nothing new. Energy consumption by large-scale computing systems is now a non-negligible financial burden. Cooling the cloud is on the business agenda and becomes an ecological issue. Industry of data centers faces the need of energy efficiency to reduce running costs: these account from 10 to 15% of the total cost of building and running a data center for 15 years\(^1\). In 2010, the worldwide energy drawn by routers and servers was between 1.1 and 1.5% (1.7 and 2.2% in the United States) of the worldwide energy production. In 2011 it was estimated to be 31 GW of electric power\(^2\).

As stated by the IARPA synopsis of the C3 (standing for Complex Cryogenic Computing) solicitation\(^3\), today’s high performance computers and the projected exascale computers are based on the same complementary metal-oxide-semiconductor (CMOS) technologies that have supported decades of continuous increase in computer performance. The improvement of performance has slowed down as the characteristic size of devices approaches atomic dimensions. Furthermore, the problem with projected energy demands based on CMOS technology continues without any solution in sight. Hence the decision in the United States to launch a ten years scale Cryogenic Computing Research & Development program to demonstrate a small-scale computer based on superconducting logic with cryogenic memory, that is energy-efficient, scalable, and able to solve crucial and complex problems.

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3 Solicitation Number: IARPA-BAA-13-05
While, in the past, significant technical obstacles prevented serious exploration of superconducting computing, recent innovations have created foundations for a major breakthrough. These include new families of superconducting logic without static power dissipation and new ideas for energy efficient cryogenic memory. A superconducting computer also promises a simplified cooling infrastructure and a greatly reduced footprint.

The special session on supercomputing has been set to present the current international status of superconducting computing. It will feature three talks presenting technologies, achieved results and expectations in Japan, United States and Europe. One talk will focus on the status of cryogenics suitable for the SC computers. Cryogenics is now a well mastered technology invisible for the user. At last one talk will focus on the current work about quantum computing that is currently seen as the next step towards advanced computing at a longer time scale.

A round table will follow the special session to address the requirements for a European initiative and, more generally, to discuss the needs and the actions to take in order to construct a solid technological basis for supercomputers of the future and advanced applications with similar requirements, like processing units for arrays of detectors for astronomy and security applications, for quantum circuits and for telecommunications and metrology applications.

Cryogenic Computer Complexity (C3) program for a new generation of superconducting supercomputers  
MANHEIMER Marc  
IARPA, USA  

Japanese efforts on superconducting supercomputers  
FUJIMAKI Akira  
Nagoya University, Japan  

State of the art of superconducting digital electronics and applications in Europe  
ORTLEPP Thomas  
Technische Universität ILMENAU, Germany  

Cryogenics for superconducting supercomputers  
RAVEX Alain  
Absolut System, France  

Superconducting processors of quantum information: state of the art, challenges and new routes  
ESTEVE Daniel  
CEA-Saclay, France
Tuesday September 8, 2015

2A-LS-O1 Sep 8 - Afternoon (4:30-6:30 PM)
Large Scale - Industries and utilities

Location: Auditorium Pasteur
Chairpeople: Christian-Eric Bruzek (Nexans) & Nouredine Hadjsaid (Grenoble-INP / G2Elab)

The panel will address some feedback experiences on superconducting field installations and applications worldwide. The various applications that will be presented concern in particular cables, Fault Current Limiters and machinery. The focus is to present both the views of the vendors on state of art technologies and the utilities on field experience.

The session is organized around six presentations by the invited speakers from the industry and utilities followed by a round table discussion and exchange with the audience on the best way to promote the benefits of superconducting solutions, AC vs DC, industry-utilities-academia interaction, regulation, futures perspectives, etc.

Introduction
Dr. L. Martini (RSE)

Ampacity project (1km, 10kV, 40MVA HTS câblé with FCL)
Dr. F. Merchel (RWE)

Yokohama project (240m, 66kV, 200MVA HTS cable)
Dr. T. Masuda (Sumitomo)

Motors for Aircraft
Dr. F. Berg (Airbus)

Italian Fault current limiters
C. Ravetta (A2A)

Round table
Moderators: Dr. Christian Eric Bruzek (Nexans), Prof. Nouredine Hadjsaid (Grenoble-INP / G2Elab)

Wednesday September 9, 2015

3A-LS-O1 Sep 9 - Afternoon (2:00-6:30 PM)
Large Scale - Modelling for applications

Location: Auditorium Pasteur
Chairpeople: Frédéric Sirois (Polytechnique Montréal), Marco Breschi (University of Bologna) and Arnaud Badel (CNRS-Univ. Grenoble Alpes)

The design of superconducting applications is challenging due to their unique non-linear strongly coupled electrical/mechanical/thermal properties. Substantial efforts have been dedicated to the modelling of large-scale applications from very local to macroscopic analysis, using both analytical and numerical approaches. The major part of the
developments has been conducted by various the application communities, historically for LTS devices and more recently for HTS applications, but the numerical modelling community also played a role and is likely to play an increasing role in the future, as models become more and more specialized.

The aim of this session is to create an opportunity for all these communities to exchange their experiences, from general know-how to state of the art developments.

This special session will be initiated by keynotes speakers presenting the state-of-the art

**2:00-4:00 PM Keynote session**

**Numerical modelling of (LTC) superconducting accelerator magnets**
*Dr. Stephan RUSSENSCHUCK, Cern, Switzerland*

**Numerical modelling for HTS applications**
*Dr. Francesco GRILLI, Karlsruhe Institute of Technology (KIT), Germany*

**Numerical methods for electromagnetics problems**
*Prof. Christophe GEUZAINE, University of Liège, Belgium*

**Round table**
With the keynote speakers, Luca Bottura (CERN), Alan Wolsky (retired from Argonne National Laboratory) representing the application design community, and Takanobu Kiss (Kyushu University) representing the materials characterization community.

**4:00-6:30 Invited poster session**

**Modeling techniques for the analysis of LTS magnet systems**
*BOTTURA Luca, Cern, Switzerland*

**Complex field technique as analytical modelling of superconducting tape wires and conductors**
*MAWATARI Yasunori, National Institute of Advanced Industrial Science and Technology, Japan*

**Hysteresis Losses Analysis in 2G HTS cables**
*ZUBKO Vasily¹, VYSOTSKY Vitaly¹, FETISOV Sergey¹*
¹Russian Scientific R&D Cable Institute (JSC “VNIIKP”), Russia, ¹

**Modelling and comparison of in-field critical current density anisotropy in high temperature superconducting (HTS) coated conductors**
*HU Di¹, AINSLIE Mark¹, RAINES Mark², HAMPShIRE Damian³, ZOU Jin¹*
¹University of Cambridge, United Kingdom, ²University of Durham, United Kingdom

**Transverse, axial and torsional strain tests on REBCO tapes as a basis for CORC modeling**
*ILIN K.¹, YAGOTINTSEV K.a.¹, ZHOU C.², WESSEL W.a.j.¹, KOSSE J.¹, OTTEN S.¹, HAUGAN T.j.², VAN DER LAAN D.c.⁴, NIJHUIS A.¹*
¹University of Twente, Netherlands, ²ITER Organization, France, ³US Air Force Research Laboratory, United States, ⁴Advanced Conductor
Molecular Dynamics Method for Vortex Dynamics: Heat Generation and Quasi-particle recombination
KATO Masaru¹, SATO Osamu¹
¹Osaka Prefecture University, Japan

Coupled mechanical and electrical analyses of Nb3sn strand critical current measurements under bending
CIĄZYNSKI Daniel¹, TORRE Alexandre¹, LENOIR Gilles²
¹CEA, France, ²Ecole Centrale Paris, France

Finite element modelling of quench dynamics in 2G HTS CCs with CFD architecture
LACROIX Christian¹, SIROIS Frederic¹
¹Polytechnique Montreal, Canada

Publicly available codes for estimating the Ic and AC losses of superconducting devices using a stationary model approach
RODRIGUEZ ZERMENO Victor Manuel¹, QUAIYUM Salman¹, GRILLI Francesco¹
¹Karlsruhe Institute of Technology (KIT), Germany

3D Modeling and measurement of coupling AC loss in soldered tapes and striated coated conductors
KAPOLKA Milan¹, PARDO Enric¹, KOVAC Jan¹, SOUC Jan¹, GRILLI Francesco², NAST Rainer²
¹Slovak Academy of Sciences, Slovakia, ²Karlsruhe Institute of Technology (KIT), Germany

Design of magnetic cloak for experiments in AC regime
SOLOVYOV Mykola¹, ŠOUC Ján¹, GÖMÖRY Fedor¹, MIKULÁšOVÁ Edita¹, UšÁKOVÁ Marianna¹, UšÁK Elemír¹, KOVÁC Ján¹
¹Institute of Electrical Engineering, SAS, Slovakia

Development of a CFD model for a novel HTS CICC for nuclear fusion applications
ZANINO Roberto¹, BRUZZONE Pierluigi², CELENTANO Giuseppe³, DELLA CORTE Antonio³, MUZZI Luigi³, SAVOLDI Laura¹
¹politecnico di torino, Italy, ²psi, Switzerland, ³ENEA, Italy

3-D Numerical modeling of AC losses in a 36 filaments MgB2 wire
ESCAÍMEZ Guillaume¹, SIROIS Frédéric², LAHTINEN Valtteri³, STENVAL Antti³, BÅDEL Arnaud³, TIXADOR Pascal³, RAMDANE Brahim³, MEUNIER Gerard³, BRUZEK Christian-Eric⁴, PERRIN-BIT Remy⁴
¹Nexans – Univ. Grenoble Alpes, ²Polytechnique Montreal, Canada, ³Tampere University of Technology, Finland, ⁴Univ. Grenoble Alpes/CNRS, France, ⁵Nexans, France, ⁶Cedrat S.A., France

Analytical modelling of superconductors in electrical engineering applications
BERGER Kévin¹, LINARES Rafael¹, LUBIN Thierry¹, HINAJE Melika¹, LÉVÊQUE Jean¹
¹GREEN – Université de Lorraine
ORAL SESSIONS

Monday September 7, 2015

1A-E-O1 Sep 7 - Afternoon (4:30-6:30 PM)
Electronics - Detectors I

Location: Rhône 2
Chairpeople: Sergio PAGANO, Alexei SEMENOV

4:30 - 5:00 INV-Next generation superconducting nanowire single photon detectors for infrared imaging and sensing
HADFIELD Robert¹, HEATH Robert¹, GEMMELL Nathan¹, CASABURI Alessandro¹
¹University of Glasgow, United Kingdom

5:00 - 5:15 The hot spot length scale in NbN nanowire superconducting single photon detectors by detector tomography
GAUDIO Rosalinda¹, RENEMA Jelmer², WANG Qiang², OP ’T HOOG Koen¹, ZHOU Zili², SAHIN Dondu¹, DE DOOD Michiel², VAN EXTER Martin², FIORE Andrea¹
¹COBRA Research Institute, Netherlands, ²Huygens-Kamerlingh Onnes Laboratory, Leiden University, Netherlands

5:15 - 5:30 The magnetic field response of nanowire superconducting single-photon detectors
RENEMA Jelmer¹, RENELINK Robert¹, KOMEN Irina¹, WANG Qiang¹, GAUDIO Rosalinda², OP ’T HOOG Koen¹, ZHOU Zili², SAHIN Dondu¹, FIORE Andrea², KES Peter¹, AARTS Jan¹, VAN EXTER Martin¹, DE DOOD Michiel¹, DRIESSEN Eduard²
¹Huygens-Kamerlingh Onnes Laboratory, Netherlands, ²COBRA Research Institute, Netherlands, ³Univ. Grenoble Alpes, France

5:30 - 5:45 A large area of 300 micrometer for photons receiving in superconducting nanowire single photon detector
ZHANG Labao¹, GU Min¹, XU Ruiying¹, ZHANG Sen¹, TAO Xu¹, KANG Lin¹, CHEN Jian¹, WU Peiheng¹
¹Nanjing University, China

5:45 - 6:00 Comparison of hot spot formation in NbC and NbN single photon detectors
KORNEEV Alexander¹, KORNEEVA Yuliya², SIDOROVA Mariya², SEMENOV Alexander¹, GOLTSMAN Gregory²
¹Moscow Institute of Physics and Technology, Russia, ²Moscow State Pedagogical University, Russia

6:00 - 6:15 Measuring the Timing Jitter of WSi SNSPDs with Integrated nTron Readout
DANE Andrew¹, ZHANG Qingyuan¹, MCCAGUHAN Adam¹, MARSILI Francesco¹, Beyer Andrew¹, SHAW Matthew¹, BERGGREN Karl¹
¹Massachusetts Institute of Technology, United States, ²Jet Propulsion Laboratory, United States
6:15 - 6:30 Operation of SNSPDs embedded in lumped-element resonant circuits

DOERNER Steffen¹, WUENSCH Stefan¹, KUZMIN Artem¹, ILIN Konstantin¹, SIEGEL Michael¹
¹Karlsruhe Institute of Technology (KIT), Germany

1A-LS-O1 Sep 7 - Afternoon (4:30-7:00 PM)
Large Scale - Medical applications and NMR

Location: Rhône 3+4
Chairpeople: Herman TEN KATE, Ulf TROCIEWITZ

4:30 - 5:00 INV-AmpaCity Project – Update on World's First Superconducting Cable and Fault Current Limiter Installation in a German City Center
STEMMLE Mark¹, MERSCHEL Frank², NOE Mathias³
¹Nexans Deutschland GmbH, Germany, ²RWE Deutschland AG, Germany, ³Karlsruhe Institute of Technology (KIT), Germany

5:00 - 5:30 INV-Lessons Learned From the 1998-2004 US Pirelli-Detroit Edison Cable Demonstration
GRANT Paul¹
¹W2AGZ Technologies, United States

5:30 - 5:45 Development of the First Brazilian Project on Superconducting Power Cable
MARCELO Neves¹, ROSARIO Marco², PINHO Edson¹, LOPES Artur¹, CASTELO-BRANCO Luiz¹, BRITO Alice¹, MAIA Fabio¹, QUEIROZ, Abraão¹, ANTONES Janeffer¹, TORRES Alesson¹, MATIAS Felipe¹, COSTA Luis¹, REIS Thais¹, MOLDENHAUER Vanessa¹, BERREDO Alessandro³, MENDONÇA Giender³, BARONY Marcio³, NASCIMENTO Carlos-Alberto², PEREIRA Maureen³, TEIXEIRA Paulo⁴, HOJO Toshiaki⁵, CARVALHO JR Edén⁶, GUIMARAES Maurissonº, ALVES Wanderson⁶, NASCIMENTO Carlos-Alexandre⁶, LMDS-UFRJ, Brazil, ⁷NeoKinetika, Brazil, ⁸TAESA, Brazil, ⁹CTEEP, Brazil, ⁺TBE, Brazil, ⁺CEMIG, Brazil

5:45 - 6:00 High-Temperature Superconducting Cable Demonstration Project
OHYA Masayoshi¹, WATANABE Michihiko¹, MASUDA Takato¹, NAKANO Tetsutarö, MARUYAMA Osamu², MIMURA Tomoo², HONJO Shoichi⁵, NAKAMURA Naoko³, YAGUCHI Hiroharu³, MACHIDA Akito³
¹Sumitomo Electric Industries, Ltd., Japan, ²Tokyo Electric Power Company, Japan, ³Mayekawa MFG. Co., Ltd., Japan

6:00 - 6:15 The BEST PATHS project on MgB2 superconducting cables for very high power transmission
BALLARINO Amalia¹, BRUZEK Christian-Eric², CHERVYAKOV Alexander¹, DITTMAR Nico², GIANNELLI Sebastiano¹, GOLDACKER Wilfried³, GRASSO Giovanni³, GRILLI Francesco³, HABERSTROH Christoph³, HOLÈ Stéphane³, LESUR Frédéric³, MARIAN Adela³, MARTÍNEZ-VAL José³, MARTINI Luciano⁶, RUBBIA Carlo³, SCHMIDT Frank¹¹, THOMAS Heiko⁶, TROPEANO Matteo⁶
¹¹CERN, Switzerland, ²Nexans France, France, ³IASS-Institute for
Advanced Sustainability Studies, Germany, Dresden University of Technology (TU Dresden), Germany, Karlsruhe Institute of Technology (KIT), Germany, Columbus Superconductors S.p.A., Italy, École Supérieure de Physique et de Chimie Industrielle de la Ville de Paris, France, Réseau de transport d'électricité (RTE), France, Universidad Politécnica de Madrid (UPM), Spain, RSE S.p.A, Italy, Nexans Deutschland GmbH, Germany.

6:15 - 6:30 Design considerations for a 1MJ, high energy density SMES
CICÉRON Jérémie, BADEL Arnaud, TIXADOR Pascal, FOREST Frederick
CNRS, France, University Grenoble Alpes, France, Sigmaphi, France.

6:30 - 6:45 Application of SMES Cooled by Liquid Hydrogen to Hybrid Storage System for Renewable Energy Sources
HAMAJIMA Takataro, KOMAGOME Toshihiro, MIYAGI Daisuke, TSUDA Makoto, MAKIDA Yasuhiro, SHINTOMI Takakazu, YAGAI Tsuyoshi, TAKAO Tomoaki, TSUJIGAMI Hiroshi, FUJIKAWA Shizuechi, IWAKI Katsuya, HANADA Kazuma, HIRANO Naoki, Mayekawa MFG. CO., LTD., Japan, Tohoku University, Japan, High Energy Accelerator Research Organization, Japan, Sophia University, Japan, Iwatani Corp., Japan, Chubu Electric Institute of Technology, Japan, Chubu Electric Power Co., Inc., Japan

6:45 - 7:00 Highly efficient liquid hydrogen storage system by magnetic levitation using HTS coils
MITO Toshiyuki, KAWAGOE Akifumi, OSAKO Tomoya, HIRANO Naoki, YANAGI Nagato
National Institute for Fusion Science, Japan, Kagoshima University, Japan, Chubu Electric Power Co., Inc., Japan

1A-LS-O2 Sep 7 - Afternoon (4:30-6:30 PM)
Large Scale - Power transmission cables and storage

Location: Auditorium Lumière
Chairpeople: Philippe MASSON, Minwon PARK

4:30 - 5:00 INV-Successful upgrade of 920 MHz NMR magnet to 1020 MHz using Bi-2223 innermost coil
NISHIJIMA Gen, MATSUMOTO Shoji, HASHI Kenji, OHKI Shinobu, GOTO Atsushi, NOGUCHI Takashi, IGUCHI Seiya, YANAGISAWA Yoshinori, TAKAHASHI Masato, MAEDA Hideaki, MIKI Takashi, SAITO Kazuyoshi, TANAKA Ryoji, SHIMIZU Tadashi
National Institute for Materials Science, Japan, Sophia University, Japan, RIKEN, Japan, Kobe Steel, Ltd., Japan, JEOL RESONANCE Inc., Japan

5:00 - 5:30 INV-No-Insulation HTS Winding Technique for High-Field NMR Magnets
HAHN Seungyong, IWASA Yukikazu
National High Magnetic Field Laboratory, United States, MIT, United States
5:30 - 5:45 Iseult/INUMAC Whole Body 11.7 T MRI Magnet manufacturing status
VEDRINE Pierre1, AUBERT Guy1, BELORGEY Jean1, BERRIAUD Christophe1, BOURQUARD Alex2, BREDY Philippe1, DONATI André1, DUBOIS Olivier3, GILGRASS Graham3, JUSTER François-Paul1, LANNOU Hervé1, MOLINIÉ Frédéric1, NUNIO François1, NUSBAUM Marc2, PAYN Alain1, QUETTIER Lionel1, SCHILD Thierry1, SCOLA Loris1, SINANNA Armand1
1CEA / IRFU, France, 2Siemens Healthcare, United Kingdom, 3ALSTOM Power Syst., France.

5:45 - 6:00 Conceptual design of a superconducting 90° dipole for future compact scanning gantries for proton therapy
CALZOLAIO Ciro1, SANFILIPPO Stéphane1, CALVI Marco1, NEGRAZUS Marco1, GERBERSHAGEN Alexander1, SCHIPPERS Marco1, SEIDEL Mike1
1Paul Scherrer Institut PSI, Switzerland

6:00 - 6:15 High Field Wide Bore Superconducting Magnets for Research and Industry
MELHEM Ziad1, BROWN Joe1, CLARKE Neil1, TWIN Andrew1, WARREN David1, WOTHERSPOON Richard1, VIZNICHENKO Roman1
1Oxford Instruments, United Kingdom

6:15 - 6:30 Design and Experimental Study of a Model Magnet for Spiral Sector FFAG Accelerators
KOYANAGI Kei1, TAKAYAMA Shigeki1, TASAKI Kenji2, ISHII Yusuke3, KURUSU Tsutomu1, AMEMIYA Naoyuki2, OGITSU Toru3
1Toshiba Corporation, Japan, 2Kyoto University, Japan, 3High Energy Accelerator Research Organization, Japan

6:30 - 6:45 Improvement of a Large bore Cryogen-free Superconducting Magnet for a Hybrid Magnet
TSURUDOME Takehisa1, MIKAMI Yukio1, HASHIMOTO Atsushi1, MITSUBORI Hitoshi1, OOKUBO Hiroshi1, SAKURABA Junji1, KATO Takanori1, WATAZAWA Keiichi1, WATANABE Kazuo2, AWAI Satoshi1, OGURO Hidetoshi1, HANAI Satoshi3, IOKA Shigeru2
1Sumitomo Heavy Industries, Ltd., Japan, 2Institute for Materials Research, Tohoku University, Japan, 3Toshiba Corporation, Japan

6:45 - 7:00 Long length critical current measurement of MgB2 wire in a coil
WOZNIAK Mariusz1, HALE Hannah1
1Siemens plc, MR Magnet Technology, United Kingdom
Location: Saint Clair 3
Chairpeople: Maxime LEROUX, Sang Im YOO

4:30 - 5:00 INV-Post-processing the critical current of high temperature superconducting coated conductors using particle irradiations
LEROUX Maxime¹, KIHLSTROM Karen¹, JIA Ying¹, SADOVSKY Ivan¹, KOSHELEV Alexei¹, WELP Ulrich¹, KWOK Wai-Kwong¹, RUPICH Martin², SATHYAMURTHY Sivatsan², FLESHLER Stevens², CIVALE Leonardo³, KAYANI Asghar⁴
¹Argonne National Laboratory, United States, ²American Superconductor Corp, United States, ³Los Alamos National Laboratory, United States, ⁴Western Michigan University, United States

5:00 - 5:30 INV-Pinning improvement in GdBCO coated conductors prepared by the RCE-DR process
YOO Sang-Im¹, YANG Eun Kyung¹, OH Won-Jae¹, LEE Jae-Hun², LEE Hunju², MOON Seung-Hyun²
¹Seoul National University, South Korea, ²2SuNAM Co., Ltd, South Korea

5:30 - 5:45 Use of off-stoichiometric YBCO (+Ba2YNbO6) films to give strongly correlated pinning at high rate growth rates of 10 nm/s
KURSUMOVIC Ahmed¹, BIANCHETTI Marco¹, WANG Haiyan², HUANG Jijie², JIAN Jie², DRISCOLL Judith¹
¹University of Cambridge, United Kingdom, ²Texas A&M University, United States

5:45 - 6:00 Incorporation of preformed nanocrystals in YBCO coated conductors
DE KEUKELEERE Katrien¹, CAYADO Pablo², MELEDIN Alexander³, DE ROO Jonathan¹, POLLEFEYT Glenn¹, RIJCKAERT Hannes¹, VAN TENDELOO Staf³, PUIG Teresa³, OBRADORS Xavier³, VAN DRIESSCHE Isabel⁴
¹Ghent University, SCRIPTS, Belgium, ²Institut de Ciencia de Materiales de Barcelona, ICM, Spain, ³Antwerp University, EMAT, Belgium

6:00 - 6:15 Application of ion beam textured templates for thick YBCO films with artificial pinning centers
PAHLKE Patrick¹, SIEGER Max¹, SUN Peng¹, HÄNISCH Jens², HOLZAPFEL Bernhard², USOSKIN Alexander³, STRÖMER Jan³, LAO Mayraluna⁴, EISTERER Michael⁴, MELEDIN Alexander⁵, VAN TENDELOO Gustaat⁵, BIANCHETTI Marco⁵, MACMANUS-DRISCOLL Judith⁶, SCHULTZ Ludwig⁵, HÜHNE Ruben⁵
¹IFW Dresden, Germany, ²Karlsruhe Institute of Technology (KIT), Germany, ³Bruker HTS, Germany, ⁴Vienna University of Technology, Austria, ⁵University of Antwerp, Belgium, ⁶University of Cambridge, United Kingdom
6:15 - 6:30 Thick superconducting YBCO films and coated conductors at high growth rate by inkjet printing deposition of low fluorine solutions
POP Cornelia¹, VILLAREJO Bohores¹, RICART Susagna¹, VALLES Feran¹, PALAU Anna¹, CAYADO Pablo¹, MUNDET Bernat¹, GAZQUEZ Jaume¹, MELEDIN Alexander², TENDELOO Gustaaf Van², USOSKIN Alexander³, PUIG Teresa¹, OBRADORS Xavier¹
¹Institut de Ciència de Materials de Barcelona, Spain, ²University of Antwerp, Belgium, ³Bruker HTS, Germany

6:30 - 6:45 Five micron crystal growth of c-axis oriented YBCO superconductor from oriented region toward non-oriented region by TFA-MOD.
ARAKI Takeshi¹, HAYASHI Mariko¹, FUKE Hiroyuki¹
¹Toshiba Corporation, Japan

6:45 - 7:00 Growth and characterization of epitaxial YBCO films prepared from Fluorine-Free chemical solutions
SOLER BRU Laia¹, MUNDET Bernat¹, POP Cornelia¹, FARJAS Jordi², ROURA Pere², GAZQUEZ Jaume¹, PUIG Teresa¹, RICART Susagna¹, OBRADORS Xavier¹
¹Institut de Ciència de Materials de Barcelona, Spain, ²University of Girona, Spain

1A-M-02 Sep 7 - Afternoon (4:30-7:00 PM)
Materials - MgB2

Location: Rhône 1
Chairpeople: Kamakura HIROHAKI, Akiyasu YAMAMOTO

4:30 - 5:00 INV-Enhanced trapped field in MgB2 bulk magnets by tuning grain boundary pinning
YAMAMOTO Akiyasu¹, SUGINO Sho¹, KISHIO Kohji¹, ATSUSHI Ishihara², AKASAKA Tomoyuki¹, TOMITA Masaru²
¹The University of Tokyo, JST-PRESTO, Japan, ²Railway Technical Research Institute, Japan

5:00 - 5:15 Synthesis of amorphous and nanostructured boron suitable for superconducting power application through various manufacturing technique
BOVONE Gianmarco¹, VIGNOLO Maurizio¹, MATERA Davide¹, BERNINI Cristina¹, MALAGOLI Andrea¹, SIRI Antonio²
¹CNR-SPIN, Italy, ²Università degli Studi di Genova, Italy

5:15 - 5:30 Influence of impurity hydrogen and oxygen, Ti-addition on the consolidation and superconducting properties of MgB2.
PRIKHNA Tatiana¹, EISTERER Michael², GOLDACKER Wilfried³, WEBER Harald W², GAWALEK Wolfgang², SHAPOVAŁOV Andrey¹, MOSCHIL Viktor¹, SVERDUN Vladimir¹, KOZYREV Artem¹, SOKOŁOŚKIY Vladimir², BELOGOŁOŚKIY Mikhail², SHATERNIK Anton¹
¹Institute for Superhard Materials of the NASU, Ukraine, ²Atominstitut, Vienna University of Technology, Austria, ³Karlsruhe Institute of Technology (KIT), Germany, ⁴Magnetworld AG, Germany, ⁵Ben-
Gurion University of the Negev, Israel, G.V.Kurdyumov Institute for Metal Physics of the National Academy of Sciences of Ukraine, Ukraine

5:30 - 5:45 High-performance MgB2 superconductors: role of Mg-B-O nano-scaled inhomogeneities
SHAPOVALOV Andrii, PRIKHNA Tatiana, BELOGOLOVSKI Mikhail, SEIDEL Paul
1Institute for Superhard Materials of the NASU, Ukraine, 2Institute for Metal Physics, NASU, Ukraine, 3Institut für Festkörperphysik, FSU Jena, Germany

5:45 - 6:00 Feasibility study for an MgB2 superconducting magnetic cloak
GIUNCHI Giovanni, BARZI Emanuela
1Materials Science Consultant, Italy, 2FermiLab, United States

6:00 - 6:15 Influence of grain size of ex-situ MgB2 powder on the properties of MgB2 bulk samples
HÄSSLER Wolfgang, SCHEITER Juliane, KOKAL Imre, ACAR Selcuk, SOMER Mehmet
1Leibniz Institute for Solid State and Materials Research, Germany, 2Pavezyum Chemicals, Turkey, 3Koc University, Turkey

6:15 - 6:30 Large critical currents in bulk MgB2 material with MgB4 addition
MIRYALA Muralidhar, JO Ishiwata, DIKO Pavo, KOBLISCHKA Michael R, INOUE Kazuhiro, MURAKAMI Masato
1Shibaura Institute of Technology, Japan, 2Slovak Academy of Science, Slovakia, 3University des Saarlandes, Germany

6:30 - 6:45 Processing of homogeneous bulk MgB2 by an infiltration and growth process
BHAGURKAR Ashutosh, YAMAMOTO Akiyasu, BABU N Hari, DENNIS Anthony, DURELL John, CARDWELL David
1Brunel University, United Kingdom, 2University of Tokyo, Japan, 3University of Cambridge, United Kingdom

6:45 - 7:00 High magnetic field generated by MgB2 bulk prepared by Spark Plasma Sintering
BERGER Kévin, KOBLISCHKA Michael, DOUINE Bruno, NOUDEM Jacques, BERNSTEIN Pierre, HAUET Thomas, LÉVÈQUE Jean
1GREEN - University of Lorraine, France, 2Dep. of Experimental Physics - Saarland University, Germany, 3CRISMA, CNRS-ENSICAEN and LUSAC - Caen University, France, 4IUL - University of Lorraine, France
Location: Salon Pasteur
Chairpeople: Teruo IZUMI, David LARBALESTIER

4:30 - 4:40 Recent Progress in High Performance REBCO Coated Conductors for High Field and AC Applications
SELVAMANICKAM Venkat¹, HEYDARI GHARACHESHEH Meysam¹, XU Aixia¹, GALSTYAN Eduard¹, ZHANG Yuan¹, LI Xiaofen¹, YAHIA Anis Ben¹, CAI Xinwei¹, KAR Soumen¹, LUO Wenbo¹, PRATAP Rudra¹, SORIAGA Rosanna¹, MAJKIC Goran¹
¹University of Houston, United States

4:40 - 4:50 Progress of 2G HTS Wire Development and Process Improvement at SuperPower
NAKASAKI Ryusuke¹, BROWNSEY Paul¹, SUNDARAM Aarthi¹, ZHANG Yifei¹, HAZELTON Drew¹, MCCLURE Ross¹, SAKAMOTO Hisaki², FUKUSHIMA Toru³

4:50 - 5:00 Current status and prospects of R&D and production of coated conductors in SuperOx
LEE Sergey¹, PETRYKIN Valery¹, HIRATA Naoyuki¹, CHUNG Juhyun¹, MANKEVICH Alexei², MOLODYK Alexander², SAMOILENKOV Sergey³
¹SuperOx Japan LLC, Japan, ²SuperOx, Russia

5:00 - 5:10 2G HTS Coated Conductors 1 km Scale-Up at STI
HUH Jeong-Uk¹, CAO Jian¹, QIU Xiaofeng¹, CHASE Joseph¹, PFEIFFER Ken¹
¹Superconductor Technologies Inc, United States

5:10 - 5:20 Improvement in manufacturing process of coated conductor at SuNAM
LEE Hunju¹, LEE Jae-Hun¹, MOON Seung-Hyun¹
¹SuNAM Co., Ltd., South Korea

5:20 - 5:30 In-field performance of BMO doped REBCO films by the PLD process with a hot-wall heating system
IGARASHI Mitsunori¹, KAKIMOTO Kazuomi¹, FUJITA Shinji¹, HIRATA Wataru¹, IIJIMA Yasuhiro¹
¹Fujikura Ltd., Japan

5:30 - 5:40 Long HTS coated conductors processed via large area PLD/ABAD deposition for high field applications
USOSKIN Alexander¹, BETZ Ulrich¹, DIETRICH Reinhard¹, SCHLENGA Klaus¹
¹Bruker HTS, Germany

5:40 - 5:50 High Strength DI-BSCCO wire “Type HT-NX”
YAMAZAKI Kohei¹, KAGIYAMA Tomohiro¹, KIKUCHI Masashi¹, NAKASHIMA Takayoshi¹, TAKEDA Soichiro¹, KOBAYASHI Shin-Ichi¹, HAYASHI Kazuhiko¹, SATO Ken-Ichi¹
¹Sumitomo Electric Industries, Ltd., Japan
5:50 - 6:00 Improving Nb3Sn and Bi-2212 conductors for high field magnet applications
HUANG Yibing, FIELD Michael, PARRELL Jeff, MIAO Hanping, DAMBORSKY Kyle, HONG Seung
1Oxford Superconducting Technology, United States

6:00 - 6:10 Development of MgB2 superconductor wire and coils for practical applications at Hyper Tech Research
RINDFLEISCH Matt, TOMSIC Michael, DOLL David, SUMPTION Michael, COLLINGS Ted
1Hyper Tech Research, United States, 2Ohio State University, United States

6:10 - 6:20 MgB2 ex-situ processed conductor at industrial level
NARDELLI Davide, BRISIGOTTI Silvia, CUBEDA Valeria, PIETRANERA Davide, TROPEANO Matteo, TUMINO Andrea, VALESI Giovanni, VALLE Riccardo, GRASSO Giovanni
1Columbus Superconductors, Italy
Tuesday September 8, 2015

2M-E-O1 Sep 8 - Morning (10:30-12:30 PM)
Electronics - Digital circuits and systems

Location: Rhône 2
Chairpeople: Ali BOZBEY, Nobuyuki YOSHIKAWA

10:30 - 11:00 INV-Protection of superconductor films against flux trapping by moats
SEMENOV Vasili¹, KHAPAEV Mikhail²
¹Stony Brook University, United States, ²Lomonosov Moscow State University, Russia

11:00 - 11:15 Modelling Superconductive Integrated Circuit Layouts for Inductance and Current Distribution Extraction with Tetrahedral Volume Elements
FOURIE Coenrad¹, JACKMAN Kyle¹
¹Stellenbosch University, South Africa

11:15 - 11:30 Automatic wire-routing of SFQ digital circuits considering wire-length matching
KITO Nobutaka¹, TAKAGI Kazuyoshi², TAKAGI Naofumi²
¹Chukyo University, Japan, ²Kyoto University, Japan

11:30 - 11:45 Improved Performance of One-Volt Josephson Arbitrary Waveform Synthesis
FLOWERS-JACOBS Nathan¹, WALTMAN Steven¹, FOX Anna¹, DRESSELHAUS Paul¹, RUFENACHT Alain¹, UNDERWOOD Jason¹, HOWE Logan², SCHWALL Robert¹, BURROUGHS Charles¹, BENZ Samuel¹
¹National Institute of Standards and Technology, United States, ²University of California San Diego, United States

11:45 - 12:00 A Timing and Energy Extraction Approach for Logic Simulation of VLSI Adiabatic Quantum-Flux-Parametron Circuits
AYALA Christopher¹, TAKEUCHI Naoki², XI Qiu², NARAMA Tatsuya¹, YAMANASHI Yuki³, ORTLEPP Thomas³, YOSHIKAWA Nobuyuki³
¹Yokohama National University, Japan, ²CiS Research Institute for Microsensor Systems Gmbh, Germany

12:00 - 12:15 Johnson Noise Thermometry by Using Integrated Quantum Voltage Noise Source
URANO Chiharu¹, YAMADA Takahiro¹, MAEZAWA Masaaki¹, YOSHIDA Shunsuke², OKAZAKI Yuma³, YAMAZAWA Kazuaki³, YAMAMORI Hirotake⁴, FUKUYAMA Yasuhiro⁵, KANEKO Nobu-Hisa⁵, MARUYAMA Ichitaka⁵, DOMAE Atsushi⁵, TAMBA Jun⁵, KIRYU Shogo⁵
¹National Institute of Advanced Industrial Science and Technology, Japan, ²Tokyo City University, Japan

12:15 - 12:30 Programmable single-flux-quantum circuits based on superconducting phase shift elements made of ferromagnetic patterns
TANIGUCHI Soya¹, ITO Hiroshi¹, ISHIKAWA Kouta¹, KUROKAWA
Sota¹, TSUNE Akihisa¹, TANAKA Masamitsu¹, AKAIKE Hiroyuki¹, FUJIMAKI Akira¹
¹Nagoya University, Japan

2M-E-02 Sep 8 - Morning (10:30-12:30 PM)
Electronics - SQUIDs & SQIFs: design and fabrication of sensors

Location: Salon Pasteur
Chairpeople: Keiji EMPUKO, Anna LEESE

10:30 - 11:00 INV-Niobium nanoSQUIDs based on submicron Josephson tunnel junctions: performance as a function of the temperature
GRANATA Carmine¹, VETTOLIERE Antonio¹, RUGGERO Berardo¹, MASSAROTTI Davide², TAFURI Francesco², DE LEO Natascia³, FRETTO Matteo⁴, VINCENZO Lacquaniti⁵
¹National Research Council, Italy, ²University of Napoli "Federico II", Italy, ³Seconda Università di Napoli, Italy, ⁴National Institute of metrological research, Italy

11:00 - 11:15 HfTi-nanoSQUIDs for nanoscale magnetic detection
BECHSTEIN Sylke¹, KÖHN Claudia¹, STORM Jan-Hendrik¹, KIELER Oliver¹, KOHLMANN Johannes¹, WEIMANN Thomas¹, SCHURING Thomas¹
¹Physikalisch-Technische Bundesanstalt, Germany

11:15 - 11:30 Serial arrays of high-Tc SQUIDs with graphoepitaxial step edge junctions
FALEY Michael¹, DUNIN-BORKOWSKI Rafal¹
¹Forschungszentrum Jülich, Germany

11:30 - 11:45 Nano-superconducting quantum interference devices made from Aluminium Niobium Tungsten trilayers
HAZRA D.¹, KIRTLLEY J.², HASSELBACH K.³
¹Institut Néel CNRS, France, ²Center for Probing the Nanoscale, United States

11:45 - 12:00 Detection of wide band transmission of electromagnetic radiation with SQUID Arrays
DE ANDRADE Marcio¹, FAGALY Robert², TAYLOR Benjamin¹, BERGGREN Susan¹, HIGA Brian¹, DINH Son¹, TALVACCHIO John³, NECHAY Bettina³, PRZYBYSZ John³, LEESE DE ESCOBAR Anna¹
¹SPAWAR Systems Center Pacific, United States, ²Leidos, United States, ³Northrop Grumman, United States

12:00 - 12:15 Characterization of YBCO Step-Edge Junction 2D Arrays
MITCHELL Emma¹, HANNAH Kirsty¹, KEENAN Shane¹, LAZAR Jeina¹, LESLIE Keith¹, LAM Simon¹, DU Jia¹, FOLEY Cathy¹
¹CSIRO, Australia
Location: Rhône 3+4  
Chairpeople: Nenad MIJATOVIC, Mathias NOE
Location: Auditorium Lumière
Chairpeople: Satoshi AWAJI, Pierre PUGNAT

10:30 - 11:00 INV-Design, construction and test of subscale coils with REBCO Roebel cable for the EuCARD-2 Future Magnets project
ROSSI Lucio¹, A. Badel², M. Bajko¹, M. Durante³, Ph. Fazilleau², E. Härö⁴, J. Himbele⁴, G. Kirby¹, C. Lorin³, J. van Nugteren¹, G. de Rijk¹, T. Salmi¹, A. Stenvall², P. Tixador²
¹CERN, Switzerland, ²Univ. Grenoble Alpes, France, ³Irfu – CEA, France, ⁴Tampere Institute of Technology, Finland

11:00 - 11:30 INV-Influence of Magnetization on Field Qualities of Accelerator Magnets Made with Coated Conductors
AMEMIYA Naoyuki¹, SOGABE Yusuke¹, SANO Takuya¹, NAKAMURA Taketsune¹, KAKEYA Itsuhiro¹, KOYANAGI Kei², ISHII Yusuke², OGITSU Toru¹
¹Kyoto University, Japan, ²Toshiba Corporation, Japan, ³High Energy Accelerator Research Organization, Japan

11:30 - 11:45 A High-field, High-homogeneity HTS Demonstration Magnet with Bi-2212 Round Wire
TROCIEWITZ Ulf¹, BOSQUE Ernesto¹, HILTON David¹, KIM Youngjae¹, CHEN Peng¹, DAVID Daniel¹, ENGLISH Charles¹, MILLER Steven¹, NOYES Patrick¹, KAMETANI Fumitake¹, JIANG Jianyi¹, MATRAS Maxime¹, HELLMANN Eric¹, LU Jun¹, MCGUIRE David¹, MILLER George¹, HAHN Seungyong¹, BIRD Mark¹, BREY William¹, LITVAK Ilya¹, CROSS Timothy¹, FRYDMAN Lucio¹, LARBALESTIER David¹
¹NHMFL, Florida State University, United States

11:45 - 12:00 HTS dipole magnet for a particle accelerator using a twist stack cable
HIMBELE John¹, BADEL Arnaud¹, TIXADOR Pascal¹
¹G2Elab, INPG, France

12:00 - 12:15 A (RE)BCO Pancake Winding with Metallic Insulation
LECREVISSE Thibault¹, IWASA Yukikazu²
¹CEA Saclay /IRFU/SACM/LEAS, France, ²MIT / Francis Bitter Magnet Laboratory, United States

12:15 - 12:30 Measured and modelled AC magnetization loss of the REBCO Roebel baseline cable for the EUCARD2 accelerator insert magnet.
BOTTURA Luca¹, DHALLE Marc², FALORIO Iole², GAO Peng², KIRBY Glynn¹, VAN NUGTEREN Bas², VAN NUGTEREN Jeroen¹, JORGE Pelegrin³, WESSEL Sander², YANG Yifeng³, EDUARD Young³
¹CERN, Switzerland, ²University of Twente, Netherlands, ³University of Southampton, United Kingdom
2M-M-O1 Sep 8 - Morning (10:30-12:30 PM)
Materials - YBCO Bulk

Location: Rhône 1
Chairpeople: John DURRELL, Jacques NOUDEM

10:30 - 11:00 INV-A 17.6 T Trapped Field in Ag doped Bulk GdBa2Cu3O7-delta
DURRELL John¹, DENNIS Tony², JAROSZYNSKI Jan², AINSLIE Mark³, PALMER Kysen¹, SHI Yun-Hua³, HULL John³, STRASIK Mike³, CAMPBELL Archie¹, HELLSTROM Eric², CARDWELL David¹
¹University of Cambridge, United Kingdom, ²NHMFL, Florida State University, United States, ³The Boeing Company, United States

11:00 - 11:15 Fabrication and Characterisation of Nanocrystalline YBa2Cu3O7-x Superconductors
WANG Guanmei¹, Raine Mark¹, HAMPSHIRE Damian¹
¹Durham University Superconductivity Group, United Kingdom

11:15 - 11:30 High Magnetic Field Applications of Reinforced Bulk Superconductors
PALMER Kysen¹, NAMBURI Devendra³, DENNIS Anthony¹, HUANG Danny¹, SHI Yunhua¹, HULL John², STRASIK Michael¹, CARDWELL David¹, DURRELL John¹
¹University of Cambridge, United Kingdom, ²The Boeing Company, United States

11:30 - 11:45 High quality Single Domain SmBCO Bulks Prepared by TSIG Technique with a New Solid Phase in Air
YANG Wanmin¹
¹Shaanxi Normal University, China

11:45 - 12:00 Generic positive effect of post-annealing in reducing atmosphere on critical current properties of RE-Ba-Cu-O materials
SHIMOYAMA Jun-Ichi¹, SETOYAMA Yui¹, OHDA Yoshitaka¹, TSUJITAKE Senri¹, YAMAMOTO Akiyasu¹, OGINO Hiraku¹, KISHIO Kohji¹
¹The University of Tokyo, Japan

12:00 - 12:15 Development of high performance QMG bulk magnets for high magnetic field engineering applications
NARIKI Shinya¹, TESHIMA Hidekazu¹, MORITA Mitsuru¹
¹Nippon Steel & Sumitomo Metal Corporation, Japan

12:15 - 12:30 Crossed field effect measured on a GdBCO pellet at various temperatures below 77 K
FAGNARD Jean-Francois¹, DEBOIS Simon¹, MORITA Mitsuru², NARIKI Shinya³, TESHIMA Hidekazu³, VANDERHEYDEN Benoit¹, VANDERBEMDEN Philippe³
¹SUPRATECS and Department of Electrical Engineering, Belgium, ²Nippon Steel & Sumitomo Metal Corporation, Japan
Location: Saint Clair 3  
Chairpeople: Yoshihiko TAKANO, Jean - Louis SOUBEYROUX

10:30 - 11:00 INV-Origin of $T_c=44K$ in Potassium intercalated FeSe
TAKANO Yoshihiko
1National Institute for Materials Science, Japan

11:00 - 11:15 Two qualitatively distinct quantum critical points in strained thin films of Ba(Fe1-xCox)2As2
IIDA Kazumasa1, GRINENKO Vadim2, KURTH Fritz2, ICHINOSE Ataru5, ICHIRO Tsukada5, AHRENS Eike4, TERESIAK Angelika5, HÜHNE Ruben3, ASWARTHAM Saicharan5, WURMEHL Sabine2, INGOLF Mönch2, ERBE Manuela6, HÄNISCH Jens6, HOLZAPFEL Bernhard6, EFREMOV Dmitri2, DRECHSLER Stefan-Ludwig2
1Nagoya University, Japan, 2IFW Dresden, Germany, 3Central Research Institute of Electric Power Industry, Japan, 4TU Dresden, Germany, 5University of Kentucky, United States, 6Karlsruhe Institute of Technology (KIT), Germany

11:15 - 11:30 Enhancement of the upper critical fields of BaFe2(As1-xPx)2 thin films with disorder
GRINENKO Vadim1, KURTH Fritz1, HÜHNE Ruben1, TARANTINI Chiara3, JAROSZYNSKI Jan4, EFREMOV Dmitri2, DRECHSLER Stefan-Ludwig2, HÄNISCH Jens6, CHEKHONIN Paul4, IKUTA Hiroshi5, IIDA Kazumasa51
1IFW Dresden, Germany, 2National High Magnetic Field Laboratory, United States, 3Karlsruhe Institute of Technology (KIT), Germany, 4TU Dresden, Germany, 5Nagoya University, Japan

11:30 - 11:45 High transport Jc performance in Ba122 tapes with different sheath materials
GAO Zhaoshun1, TOGANO Kazumasa1, MATSUMOTO Akiyoshi1, KUMAKURA Hiroaki1
1National Institute for Materials Science, Japan

11:45 - 12:00 Transport critical current in single crystals of the newly discovered (Ca,La)FeAs2 superconductors
CAGLIERIS Federico1, SALA Alberto, FUJOKA Masaya2, MEINERO Martina2, LAMURA Giannic1, PALLECCII Ilaria1, EISAKI Hiroshi2, TAKANO Yoshihiko2, PUTTI Marina1
1University of Genova/CNR-SPIN, Italy,, 2NIMS, Japan, 3University of Genova, Italy,, 4AIST, Japan

12:00 - 12:15 Enhanced critical current densities in 122 iron-based tapes for high field applications
MA Yanwei1, LIN He1, YAO Chao1, ZHANG Xianping1, ZHANG Qianjun1
1IEE, Chinese Academy of Sciences, China

12:15 - 12:30 Isotropic Jc properties of P-doped BaFe2As2 films on IBAD MgO tape substrates
SATO Hikaru1, HIRAMATSU Hidenori1, KAMIYA Toshio1, HOSONO Hideo1
1Tokyo Institute of Technology, Japan
Location: Auditorium Pasteur  
Chairpeople: Fedor GOMORY, Andrea MALAGOLI

10:30 - 10:45 Superconducting solders for the 21st century  
MOUSAVI Tayebeh¹, AKSOY Canan¹, GROVENOR Chris¹, SPELLER Susie¹  
¹Oxford University, United Kingdom

10:45 - 11:00 Nondestructive Characterization of Local Critical Current Distribution in MgB2 Wires with Magnetic Sheath  
Materials Based on In-Field Magnetic Microscopy  
HIGASHIKAWA Kohei¹, TATARA Hiroshi¹, INOUE Masayoshi¹, YE Shujun², MATSUMOTO Akiyoshi², KUMAKURA Hiroaki², TANAKA Hideki³, KISS Takanobu¹  
¹Kyushu University, Japan, ²National Institute for Materials Science, Japan, ³Hitachi, Ltd., Japan

11:00 - 11:15 3D analysis of the porosity in MgB2 wires using FIB nanotomography  
HAGNER Matthias¹, FRITZ Jakob¹, ALKINES Patrick²,  
SCHUEERLEIN Christian², ZIELKE Lukas², VIERRATH Severin³,  
THIELE Simon³, BORDINI B.⁵, BALLARINO Amalia³  
¹University of Konstanz, Germany, ²European Organization for Nuclear Research (CERN), Switzerland, ³IMTEK - University of Freiburg, Germany

11:15 - 11:30 AC Losses of LTS and HTS Composite Conductors at Low temperatures between 3K and 80K  
YANG Yifeng¹, YOUNG Edward¹, PELEGRIN Jorge¹, FALORIO Iole¹,  
BOTTURA Luca², BALLARINO Amalia²  
¹Institute of Cryogenics, Energy Technology, University of Southampton, United Kingdom, ²Technical Department, Cern, Switzerland

11:30 - 11:45 Characterization of CICC superconductor wires  
COMMISSO Maria¹, MAIRE Eric¹, BUFFIERE Jean-Yves¹,  
CIAZYNSKI Daniel²  
¹University of Lyon - INSA de Lyon, France, ²Association Euratom-CEA, France

11:45 - 12:00 AC losses in REBCO stacked tape and CORC cables, influence of intertape resistances and twist pitch  
NIJHUIS Arend¹, YAGOTINTESEV Konstantin¹, HUANG Jianfeng¹,  
GAO Peng³, DHALLE Marc³, HAUGAN Timothy², VAN DER LAAN Danko³, WESCHE Rainer³, UGLIETTI Davide⁴, MUZZI Luigi⁵, DELLA CORTE Antonio⁵  
¹University of Twente, Netherlands, ²US Air Force Research Laboratory, United States, ³Advanced Conductor Technologies & University of Colorado, United States, ⁴CRPP, EPFL, Villigen, Switzerland, Switzerland, ⁵ENEA CR Frascati, Italy
12:00 - 12:15 Flux flow characteristics of 2G HTS coated conductors measured with microsecond-range pulsed currents
SIRIOS Frederic¹, LACROIX Christian¹, COULOMBE Jonathan¹, DUTOIT Bertrand⁰
¹Polytechnique Montreal, Canada, ²Ecole Polytechnique Fédérale de Lausanne, Switzerland

12:15 - 12:30 Uniaxial Strain Dependence of Critical Current of Practical REBCO Wires
OSAMURA Kozo¹, MACHIYA Shutaro², HAMPSHIRE Damian³
¹Research Institute for Applied Sciences, Japan, ²Daido University, Japan, ³University of Durham, United Kingdom

2A-E-O1 Sep 8 - Afternoon (4:30-6:30 PM)
Electronics - Junctions, circuit design and fabrication

Location: Salon Pasteur
Chairpeople: Jérome LESUEUR, Vasili SEMENOV

4:30 - 5:00 INV-Advanced Fabrication Processes for Superconducting Very Large Scale Integrated Circuits
TOLPYGO Sergey¹, BOLKHOVSKY Vladimir¹, JOHNSON Leonard¹, GOUKER Mark¹
¹MIT Lincoln Laboratory, United States

5:00 - 5:15 Development of AC Josephson voltage standards at PTB
KOHLMANN Johannes¹, KIELER Oliver¹, SCHELLE Thomas¹, WENDISCH Rüdiger¹, EGELING Bert¹, BEHR Ralf¹
¹PTB, Germany

5:15 - 5:30 Switchable nanoscale superconducting-magnetic Josephson junctions
BAEK Burma¹, RIPPARD William¹, PUFALL Matthew¹, RUSSEK Stephen¹, SCHNEIDER Michael¹, BENZ Samuel¹, ROGALLA Horst¹, DRESSELHAUS Paul¹
¹National Institute of Standards and Technology, United States

5:30 - 5:45 NbN-based Josephson junction with ferromagnetic barrier
YAMASHITA Taro¹, MAKISE Kazumasa¹, TERAI Hirotaka¹
¹NICT, Japan

5:45 - 6:00 Generation and distribution of Josephson junction clock
BUEHLER Simon¹, KIRICHENKO Dmitri¹, GUPTA Deepnarayan¹, SIEGEL Michael²
¹Hypres Inc., Germany, ²Institut für Mikro- und Nanoelektronische Systeme (IMS), Germany

6:00 - 6:15 Internally shunted junctions: a unified analysis of various approaches
LACQUANITI Vincenzo¹, DE LEO Natascia¹, FRETTO Matteo¹, SOSSO Andrea¹, FEBVRE Pasca², BELOGOLOVSKI Mikhail³
¹INRIM, Italian Institute of Metrological Research, Italy, ²Université de Savoie, France, ³Institute for Metal Physics, NASU, Kyiv & Donetsk, Ukraine
6:15 - 6:30 Superconducting Silicon devices
CHIODI Francesca¹, LEFLOCH François², LE SUEUR Hélène³, MARCENAT Christophe⁴, FRANCHETEAU Anais⁴, DUVAUCHELLE Jean Eudes⁴, DÉBARRE Dominique¹
¹Institut d'Electronique Fondamentale, France, ²SPSMS, CEA-INAC, France, ³CSNSM, France

2A-E-Q2 Sep 8 - Afternoon (4:30-6:30 PM)
Electronics - Quantum engineering & Detectors II

Location: Rhône 2
Chairpeople: Olivier BUISSON, Alexey USTINOV

4:30 - 4:45 Toroidal qubits: naturally-decoupled quiet artificial atoms
ZAGOSKIN Alexandre¹, CHIPOULINE Arkadi², IL'ICHEV Evgeni³, JOHANSSON J, NORI Franco⁴
¹Loughborough University, United Kingdom, ²Friedrich Schiller University of Jena, Germany, ³Leibniz Institute of Photonic Technology, Germany, ⁴RIKEN, Japan

4:45 - 5:00 V-shape artificial atom based on superconducting quantum circuit
DUMUR Étienne¹, KÜNG Bruno¹, FEOFANOV Alexey¹, WEISSL Thomas¹, NAUD Cécile¹, ROCH Nicolas¹, WIEBKE Guichard¹, BUISSON Olivier¹
¹Institut Néel, France

5:00 - 5:15 Quantum coherence of the quartet scheme observed by Shapiro resonance under radio-frequency irradiation in three terminal Josephson junctions
DUVAUCHELLE Jean-Eudes¹, PFEFFER Andreas¹, COURTOIS Hervé², LEFLOCH François³
¹Université Grenoble Alpes, CEA/INAC/SPSMS, France, ²Université Grenoble Alpes, CNRS/Institut NEEL, France

5:15 - 5:30 Evidence of different origins of light and dark counts in meander-type SNSPDs
SEmenov Alexej¹, Charaev Illya², ILIN Konstantin², SIEgel Michael²
¹DLR Institute of optical systems, Germany, ²Institute of micro- and nanoelectronic systems, KIT, Germany

5:30 - 5:45 Cryogenic FSF spin-valves with long-range triplet superconducting correlations
PUGACH Nataliya¹, ESCHRIG Matthias², FLOKSTRA Machiel³, CUNNINGHAM P.S.³, Kim Jangyong⁴, Satchell Nathan⁴, BURNELL Gavin⁴, CURRAN Peter⁴, BENDING Simon⁴, KINANE Christian⁶, ISIDORI Aldo⁵, COOPER Jos⁶, LANGRIDGE Sean⁶, Lee Stephen⁶
¹Lomonosov Moscow State University, Russian Federation, ²Royal Holloway University of London, United Kingdom, ³University of St. Andrews, United Kingdom, ⁴University of Leeds, United Kingdom, ⁵University of Bath, United Kingdom, ⁶ISIS, Rutherford Appleton Laboratory, United Kingdom
5:45 - 6:00 How to capture a single neutron by superconducting detector
SHISHIDO Hiroaki1, MIYAJIMA Shigeyuki1, YAMAGUCHI Hiroyuki1, NAKAYAMA Hriotaka1, FUJIMAKI Akira2, HIDAKA Mutsuo3, KOJIMA Kenji4, OIKAWE Ken'ichi5, HARADA Masahide6, OKU Takayuki6, ARAI Masatoshi6, SOYAMA Kazuhiko5, ISHIDA Takekazu1
1Osaka Prefecture University, Japan, 2Nagoya University, Japan, 3Advanced Industrial Science and Technology, Japan, 4High Energy Accelerator Research Organization, Japan, 5Japan Atomic Energy Agency, Japan

6:00 - 6:15 Series arrays of flux-flow magnetometers
VETTOLIERE Antonio1, GRANATA Carmine1, MONACO Roberto1, MYGIND Jesper2
1Consiglio Nazionale delle Ricerche, Italy, 2Technical University of Denmark, Denmark

6:15 - 6:30 Spectroscopy of nanoscale two-level systems in insulating films
SARABI Bahman1, RAMANAYAKA Aruna2, BURIN Alexander3, WELLSTOOD Frederick1, OSBORN Kevin2
1Joint Quantum Institute, United States, 2Laboratory for Physical Sciences, United States, 3Tulane University, United States, 4University of Maryland, College Park, United States

6:30 - 6:45 Displacement of microwave squeezed states with Josephson parametric amplifiers
FEDOROV Kirill1, ZHONG Ling1, POGORZALEK Stefan1, BETZENBICHLER Martin1, MENZEL Edwin1, HAEBERLAIN Max1, WULSCHNER Friedrich1, XIE Edwar1, GOETZ Jan1, EDER Peter1, BAUST Alex1, FISCHER Michael1, MARX Achim1, DEPPE Frank1, GROSS Rudolf1
1Walther-Meissner-Institut, Germany

2A-LS-O2 Sep 8 - Afternoon (4:30-6:30 PM)
Large Scale - Numerical modelling

Location: Rhône 1
Chairpeople: Bruno DOUINE, Yuan WEIJIA

4:30 - 4:45 A Better Framework than Magneto-Quasistatics for Addressing AC Behavior when Inductive and Capacitive Effects Both Matter
WOLSKY Alan1
1Argonne National Laboratory, United States

4:45 - 5:05 3D and 2D electromagnetic modelling of superconductors: flux cutting effects in finite samples and coated conductor coils up to 10000 turns
PARDO Enric1, KAPOLKA Milan1, SOUC Jan1
1Slovak Academy of Sciences, Slovakia
5:00 - 5:15 3D Modeling of Superconductors modeling based on E-H Formulation
MAKONG HELL Ludovic¹, KAMENI Abelin², BOUILLAULT Frederic², MASSON Philippe³
¹University of Houston, United States, ²Laboratoire de Génie Electrique de Paris, France

5:15 - 5:30 A solution to the problem of high aspect ratio in the quench modelling of HTS tapes
BRESCHI Marco¹, CASALI Marco¹
¹University of Bologna, Italy

5:30 - 5:45 3D modeling of the electromagnetic response of superconducting cables and multi-ﬁlamentary conductors in power applications
RODRIGUEZ ZERMENO Victor Manuel¹, GRILLI Francesco¹
¹Karlsruhe Institute of Technology (KIT), Germany

5:45 - 6:00 Finite Element Analysis (FEA) Assisted Design of a High Field NMR HTS Demonstration Magnet Wound with Bi-2212 Round Wire
BOSQUE Ernesto¹, TROCIEWITZ Ulf, HILTON David¹, KIM Youngjae¹, DANIEL Davis¹, CHEN Peng¹, LARBALESTIER David¹
¹NHMFL, Florida State University, United States

6:00 - 6:15 Simulation of high temperature superconducting bulks and stacks of coated conductors magnetized by pulse ﬁeld magnetization using controlled magnetic density distribution coils
ZOU Shengnan¹, ZERMENO Victor¹, GRILLI Francesco¹
¹Karlsruhe Institute of Technology (KIT), Germany

6:15 - 6:30 Development of an advanced analytical modelling of AC screening currents in multi-layer superconducting composites – application at various scales in fusion cable configurations
LOUZGUITI Alexandre¹, ZANI Louis¹, CIAZYNSKI Daniel¹, TURCK Bernard¹
¹CEA, France

6:30 - 6:45 Effect of Heat Flux on the Thermohydraulic Performance of the HTS Cables with Supercritical Nitrogen (SCN) as a Coolant
UPPADA Venkata Ramana¹, DONDAPATI Raja Sekhar¹, USURUMARTI Preeti Rao²
¹Lovely Professional University, India, ²Department of Mechanical Engineering, PVK Institute of Technology, India

6:45 - 7:00 Optimal mechanical design of 2G High-Temperature Superconductors using modeling
KOSHELEVA Natalia¹, SHAHROUR Isam¹, VEGA Guillaume², BRUZEK Christian-Eric²
¹Lille University of Science and Technology, France, ²Nexans France, France
Location: Saint Clair 3
Chairpeople: Philippe ODIER, Ana PALAU

4:30 - 5:00 INV-New nano-scale engineering strategies of solution grown YBCO nanocomposites for tuning vortex pinning landscape
PALAU Anna¹, VALLES Ferran¹, STANGL Alexander¹, COLL Mariona¹, CAYADO Pablo¹, MUNDET Bernat¹, GAZQUEZ Jaume¹, ROS Josep², RICART Susagna¹, OBRADORS Xavier¹, PUIG Teresa¹
¹Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Spain, ²Universitat Autònoma de Barcelona, Spain

5:00 - 5:30 INV-Jc mechanism in YBa2Cu3O7+BaMO3 (M=Zr, Hf, Sn) films
HORIDE Tomoya¹, TAGUCHI Kenta¹, MATSUMOTO Kaname¹
¹Kyushu Institute of Technology, Japan

5:30 - 5:45 Engineered Pinning Landscapes for Enhanced 2G Coil Wire
RUPICH Martin¹, SATHYAMURTHY Srivatsan¹, FLESHLER Steven¹, LI Qiang¹, SOLOVYOV Vyacheslav², OZAKI Toshinori², WELP Ulrich³, KWOK Wai-Kwong³, LEROUX Maxime³, KOSHELEV Alexei³, MILLER Dean³, KIHLMSTRÖM Karen³, CIVALE Leonardo³, ELEY Serena³, KAYANI Asghar³
¹American Superconductor Corporation, United States, ²Brookhaven National Laboratory, United States, ³Argonne National Laboratory, United States, ⁴Los Alamos National Laboratory, United States, ⁵Western Michigan University, United States

5:45 - 6:00 Enhanced vortex-pinning features of pulsed laser deposited YBa2Cu3O7-x films with Ba2YTaO6 and Ba2YNbO6 nano-columnar inclusions in the low-temperature and high magnetic field regime.
RIZZO Francesco¹, AUGIERI Andrea¹, ANGRISANI ARMENIO Achille¹, GALLUZZI Valentina¹, MANCINI Antonella¹, PINTO Valentina¹, RUFOOLONI Alessandro¹, VANNOZZI Angelo¹, KURSUMOVIC Ahmed², MACMANUS-DRISCOLL Judith L.², MELEDIN Alexander³, VAN TENDELOO Gustaaf³, CELENTANO Giuseppe³
¹Superconductivity Laboratory, ENEA, Italy, ²University of Cambridge, United Kingdom, ³University of Antwerp, Belgium

6:00 - 6:15 Solution design for ReBCO CSD-MOD films and nanocomposites
RICART Susagna¹, CAYADO Pablo¹, POP Cornelia¹, GARZON Alba², MARTINEZ-ESAIN Jordi², VILLAREJO Bohores², ROS Josep³, YÁÑEZ Ramón³, ROURA Pere³, FARJAS Jordi³, PALAU Anna¹, GAZQUEZ Jaume¹, MUNDET Bernat¹, MARIONA Coll¹, OBRADORS Xavier¹, PUIG Teresa¹
¹ICMAB-CSIC, Spain, ²Universitat Autònoma de Barcelona, Spain, ³Departament de Fisica, Universitat de Girona, Spain
6:15 - 6:30 Nano-engineering of BaHfO3 and Ba2Y(Nb/Ta)O6-doped YBa2Cu3O7-d coated conductors
SIEGER Max¹, PAHLKE Patrick¹, HÄNISCH Jens², OPHERDEN Lars¹, BERGELT Paul¹, IIDA Kazumasa¹, SPARING Maria¹, BIANCHETTI Marco³, MACMANUS-DRISCOLL Judith⁴, LAO Mayraluna⁴, EISTERER Michael⁴, MELEDIN Alexander⁵, VAN TENDELOO Gustaaf⁶, NAST Rainer⁷, SCHULTZ Ludwig⁷, HOLZAPFEL Bernhard⁷, HÜHNE Ruben⁷
¹IFW Dresden, Germany, ²Karlsruhe Institute of Technology (KIT), Germany, ³University of Cambridge, United Kingdom, ⁴Vienna University of Technology, Austria, ⁵University Antwerp, Belgium

6:30 - 6:45 Investigation of the longitudinal magnetic field effect on multilayered-5mBa2Cu3Oy films fabricated on single-crystal and metal substrates
SUGIHARA Kazuki¹, ICHINO Yusuke¹, YOSHIDA Yutaka¹, ICHINOSE Ataru²
¹Nagoya University, Japan, ²CRIEPI, Japan

2A-M-O2 Sep 8 - Afternoon (4:30-6:30 PM)
Materials - Material properties

Location: Rhône 3+4
Chairpeople: Xavier OBRADORS, René FLUKIGER

4:30 - 5:00 INV-High resolution imaging of magnetic flux distributions in superconductors with scanning x-ray microscopy
RUOß Stephen¹, STAHL Claudia¹, WEIGAND Markus¹, GISELA Schütz¹, ALBRECHT Joachim²
¹Max-Planck-Institut für Intelligente Systeme, Germany, ²Research Institute for Innovative Surfaces, FINO, Germany

5:00 - 5:15 Correlation between the number of displacements per atom (dpa) and Tc after high energy irradiations in Nb3Sn wires for HL-LHC accelerator
SPINA Tiziana¹, SCHEUERLEIN Christian¹, RICHTER David¹, BALLARINO Amalia¹, CERUTTI Francesco¹, ESPOSITO Luigi¹, Salvatore¹, LECHNER Anton¹, BOTTURA Luca¹, FLUKIGER René¹, FLUKIGER René¹
¹CERN, Switzerland

5:15 - 5:30 Controllable morphology of flux avalanches in microstructured superconducting films
MOTTA Maycon¹, COLAUTO Fabiano¹, VESTGARDEN Jorn², FRITZCHE Joaquim¹, TIMMERMANS Matias³, CUPPENS Jo³, ATTANASIO Carmine³, CIRILLO Carla³, MOSCHALKOV Victor⁴, VAN DE VONDEL Joris⁴, JOHANSEN Tom⁵, SILHANEK Alejandro⁶, ORTIZ Wilson¹
¹Universidade Federal de Sao Carlos, Brazil, ²University of Oslo, Norway, ³Chalmers University of Technology, Sweden, ⁴Katholieke Universiteit Leuven, Belgium, ⁵Universita degli Studi di Salerno, Italy, ⁶Université de Liège, Belgium
5:30 - 5:45 Precipitous change of the irreversible strain limit with heat-treatment temperature in Nb3Sn wires made by the restacked-rod process
CHEGGOUR Najib1, STAUFFER Theodore2, STARCH William2, LEE Peter1, SPLETT Jolene1, GHOSH Arup4
1University of Colorado & NIST, United States, 2National Institute of Standards and Technology, United States, 3Florida State University, United States, 4Brookhaven National Laboratory, United States

5:45 - 6:00 Micro- and nanostructural characterization of pulsed laser deposited YBCO with Ba2YNbTaO6 or BaHfO3 nanocomposites
MELEDIN Alexander1, OPPERDEN Lars2, SIEGER Max2, HÜHNE Ruben2, RIZZO Francesco3, AUGIERI Andrea3, CELENTANO Giuseppe2, VAN TENDELOO Gustaaf1
1EMAT, University of Antwerp, Belgium, 2IFW Dresden, Institute for Metallic Materials, Germany, 3ENEA, Italy

6:00 - 6:15 Thermal Analysis on films: a new insight on chemical solution deposition. Application to YBCO films synthesis.
ELOUSSIFI Hichem1, FARJAS Jordi1, SANCHEZ-RODRIGUEZ Daniel1, ROURA Pere1, RICART Susagna1, CALLEJA Albert1, PUIG Teresa1, OBRADORS Xavier1
1GRMT, Spain, 2ICMAB, Institut de Ciencia de Materials de Barcelona, Spain

6:15 - 6:30 Noise spectroscopy investigation of interplay between quantum interference effects and superconductivity in infinite layer cuprates
BARONE Carlo1, GALDI Alice1, SACCO Chiara1, ORGIANI Pasquale2, SCHLOM Darrell3, PAGANO Sergio1, MARITATO Luigi2
1University of Salerno, Italy, 2Institute SPIN of C.N.R., Italy, 3Cornell University, United States

2A-WT-O1 Sep 8 - Afternoon (4:30-6:30 PM)
Wires and Tapes - MgB2 and Bi2212 MgB2 and Bi2212

Location: Auditorium Lumiè re
Chairpeople: Ziad MELHEM, Davide NARDELLI

4:30 - 5:00 INV-Development of internal Mg diffusion (IMD)-processed MgB2 superconducting wires — towards long-length wire fabrications
KUMAKURA Hiroaki1, YE Shujun1, MATSUMOTO Akiyoshi1, TAKIGAWA Hiroyuki1
1National Institute for Materials Science, Japan

5:00 - 5:15 Cold and hot isostatic pressing of MgB2 wires in various media
CETNER Tomasz1, MORAWSKI Andrzej1, HAESSLER Wolfgang2, GAJDA Daniel1, GAJDA Grzegorz1, RINDFLEISCH Matt4, ZALESKI Andrzej1, CZUJKO Tomasz1, ZUCHOWSKA Emilia3, HOSSAIN Shahriar3, PRZYSŁUKSKI Piotr4
1Institute of High Pressure Physics PAS, Poland, 2Leibniz Institute for Solid State and Materials Research, Germany, 3International Laboratory of HMF and LT PAS, Poland, 4Hyper Tech Research, Inc.,
5:15 - 5:30 Filamentary MgB2 wires with low AC losses
KOVCÁK Pavol1, HUSEK Imrich1, KOVCÁK Jan1, MELÍSEK Tibor1, KULICH Milošlav1, KOPERA Lubomír1, SOUC Jan1
1Institute of Electrical Engineering, SAS, Slovakia

5:30 - 5:45 Thermal Conductivity and Stability of Commercial MgB2 Conductors
BONURA Marco1, SENATORE Carmine1
1University of Geneva, Switzerland

5:45 - 6:00 Development of Bi-2212 wires for practical applications using groove-rolling as an alternative process
MALAGOLI Andrea1, BRACCINI Valeria1, LEVERATTO Alessandro1, CONTARINO Daniele1, PUTTI Marina1, FERDEGHINI Carlo1
1CNR-SPIN, Italy, 2Physics Department, University of Genova, Italy

6:00 - 6:15 Phase formation during cooling in partial melt processing of Bi2Sr2CaCu2Ox round wires and predensification of the wire before coil winding with over-pressure
MATRAS Maxime1, JIANG Jianyi1, CHEN Peng1, HELSTROM Eric1, LARBALESTIER David1
1Applied Superconductivity Center, NHMFL, FSU, United States

6:15 - 6:30 Multiscale studies of Bi2Sr2CaCu2Ox/Ag conductors
NADERI Golsa1, LI Pei2, SHEN Tengming2, SCHWARTZ Justin1
1North Carolina State University, United States, 2Fermi National Accelerator Laboratory, United States

6:30 - 7:00 INV-Quench behavior, load cycling and generation of 27 T with an LTS-HTS all- superconducting magnet
WEIJERS Hubb1, MARKIEWICZ William1
1National High Magnetic Field Laboratory, United States
Wednesday September 9, 2015

3M-E-O1 Sep 9 - Morning (10:30-12:30 PM)
Electronics - Microwave and THz devices

Location: Rhône 2
Chairpeople: Pascal FEBVRE, Stefan WUENSCH

10:30 - 11:00 INV-DC-tunable low-pass microwave filter on superconducting nanopatterned Nb microstrips
DOBROVOLSKY Oleksandr¹, HUTH Michael¹
¹Goethe-Universität, Germany

11:00 - 11:15 YBa2Cu3O7-x bicrystal Josephson junctions with high lCn-products and wide-ranging resistances for THz applications
IRINA Gundareva¹, DIVIN Yuri²
¹Forschungszentrum Juelich, Germany, ²Kotel’nikov IRE RAS, Russia

11:15 - 11:30 Thermal Instability and THz Emission from High Tc Superconductor Bi2Sr2CaCu2O8+d Mesa Structures
KADOWAKI Kazuo¹, KITAMURA Takeo¹, WATANABE Chiharu¹, SAIWAI Yoshihiko¹, SHIBANO Yuuki¹, SAKAMOTO Kazuki¹, KUBO Hiroyuki¹, YAMAMOTO Takashi², KASHIWAGI Takanari¹, MINAMI Hidetoshi¹, KLEMM Richard³
¹University of Tsukuba, Japan, ²National Institute for Materials Science, Japan, ³University of Florida, United States

11:30 - 11:45 Experimental Study of Josephson Effects in Nonuniform Nb-based SIS Parallel Junction Arrays
BOUSSHA Faouzi¹, CHAUMONT Christine¹, FERET Alexandre¹, VACELET Thibau²
¹Observatoire de Paris, France

11:45 - 12:00 Josephson effect at THz frequencies in a planar MgB2 junction
CUNNANE Daniel¹, WOLAK Matthaeus², ACHARYA Narendra², KAWAMURA Jonathan¹, XI Xiaoxing², KARASIK Boris³
¹Jet Propulsion Laboratory, United States, ²Temple University, United States

12:00 - 12:15 Simulation of HTS Josephson junction mixers
PEGRUM Colin¹, ZHANG Ting², DU Jia³, GUI Yingjie Jay³
¹University of Strathclyde, United Kingdom, ²CSIRO, Australia, ³University of Technology Sydney, Australia

12:15 - 12:30 Space Applications of HTS Microwave Filters and Subsystems in China
HE Yusheng¹, SUN Liang¹, LI Chenguang¹, LI Hong¹, ZHANG Xueqiang¹, BIAN Yongbo¹, WANG Jis¹, WANG Xu¹, LI Guoqiang¹, WU Yun¹
¹Institute of Physics, Chinese Academy of Sciences, China
10:30 - 11:00 INV-Kinetic Inductance Detectors for radiation detection and other applications
MONFARDINI Alessandro
1 Institut Néel - CNRS, France

11:00 - 11:15 Fluorescence correlation spectroscopy with superconducting nanowire single-photon detector for visible wavelengths
YAMASHITA Taro1, MIKI Shigehito1, YAMAMOTO Johtaro2, HARAGUCHI Tokuko1, KINJO Masataka3, HIRAOKA Yasushi3, TERAI Hirotaka1
1 NICT, Japan, 2 Hokkaido University, Japan, 3 Osaka University, Japan

11:15 - 11:30 Low background single photon detection with a transition edge sensor for ALPS II
BASTIDON Noëmie1, HORNS Dieter1, LINDNER Axel2
1 University of Hamburg, Germany, 2 DESY, Germany

11:30 - 11:45 Superconducting Nanowire Single-Photon Detector for Fiber Dispersed Raman Spectroscopy
TOUSSAINT Julia1, DOCHOW Sebastian2, LATKA Ines2, LUKIC Aleksandar2, MAY Torsten1, MEYER Hans-Georg1, IL’IN Konstantin3, SIEGEL Michael1, POPP Juergen1
1 Leibniz Institute of Photonic Technology, Germany, 2 Friedrich Schiller University of Jena, Germany, 3 Karlsruhe Institute of Technology (KIT), Germany

11:45 - 12:00 Demonstration of Multi-pixel Operations of Serially-Connected Superconducting Stripline Detectors Combined with Superconducting Digital Readout Circuits
FUJIMAKI Akira1, KITA Yuma1, KAMIYA Kyohei1, KOUZAKA Misaki1, TANAKA Masamitsu1, BOZBEY Ali2, ISHIHAMA Kyo2, NAGASAWA Shuichi1, HIDAKA Mutsuo4
1 Nagoya University, Japan, 2 TOBB University of Economy and Technology, Turkey, 3 Osaka Prefecture University, Japan, 4 Advanced Industrial Science and Technology, Japan

12:00 - 12:15 Optimising the multiplex factor of the frequency domain multiplexed readout of TES-based microcalorimeters imaging arrays for the X-IFU instrument on the Athena Xray observatory
VAN DER KUUR Jan1, GOTTARDI Luciano1, AKAMATSU Hiroki1, RAVENBERG Kevin1, KHOSROPANAH Pourya1, SUZUKI Tyoaki1, DEN HARTOG Roland1, HIJMERING Richard1, BRUIJN Marcel1, RIDDER Marcel1, KIVIRANTA Mikko1, GAO Jian Rong1, JACKSON Brian1
1 SRON Netherlands Institute for Space Research, Netherlands, 2 VTT, Finland
12:15 - 12:30 Biomolecule ion detection with MgB2 superconducting strip detectors
ZEN Nobuyuki1, SHIBATA Hiroyuki2, MAWATARI Yasunori1, OHKUBO Masataka1
1AIST, Japan, 2NTT Basic Research Laboratories, Japan

3M-LS-O1 Sep 9 - Morning (10:30-12:30 PM)
Large Scale - Selected large systems and common issues
Location: Rhône 3+4
Chairpeople: Jean-Luc DUCHATEAU, Yukikazu IWASA

10:30 - 10:45 Design and validation of the cryogenic-free cooling system of a Nb-Ti synchrocyclotron superconducting magnet for cancer proton therapy
CAPELLUTO Alessio1, CUNEO Stefano1, MARABOTTO Roberto1, MODICA Marco1, VERBRUGGEN Patrick2, FORTON Eric2
1ASG Superconductors SpA, Italy, 2IBA Medical Accelerators Solutions, Belgium

10:45 - 11:00 Development of the Superconducting Extraction and Injection Quadrupole Doublet Modules for the SIS100 Heavy Ion Synchrotron
CEBALLOS VELASCO Jorge1, MEIER Jan Patrick1, BLEILE Alexander1, MACAVEI Johann1, SCHNIZER Pierre1, FISCHER Egbert1, SPILLER Peter1
1GSI Helmholtzzentrum für Schwerionenforschung GmbH, Germany

11:00 - 11:15 First implementation of the CLIQ quench protection system on a full-scale LHC matching quadrupole magnet
RAVAIOLI Emmanuele1,2, BAJAS Hugo1, DATSKOV Vladimir1, GHINI Jonas1,2, KIRBY Glyn1, MACIEJEWSKI Michal1,4, TEN KATE Herman1, VERWEIJ Arjan2, WILLERING Gerard2
1CERN, Switzerland, 2Univ. of Twente, The Netherlands, 3Norwegian University of Science, Norway, 4Lodz University of Technology, Poland

11:15 - 11:30 Hotspot characteristics in a REBCO Insert Coil Induced by Quenches of an LTS Outer Coil
TSUCHIYA Yuji1, MUT0 Shogo1, OGURO Hidetoshi1, AWAJI Satoshi1, WATANABE Kazuo1, MIYAZAKI Hiroshi2, HANAI Satoshi2, IOKA Shigeru2, DAIBO Masanori3, IIZIMA Yasuhiro3
1Tohoku University, Japan, 2Toshiba Corporation, Japan, 3Fujikura Ltd., Japan

11:30 - 11:45 Quench Detectors Sensing Second Sound Events Induced by Thermomagnetic breakdown of SRF Cavities in Superfluid Helium
FOUAIYDy Mohammed1, LONGUEVERGNE David1, DUBOIS Francis1, POCHON Olivier2, YANICHE Jean-Francois1
1IPN Orsay, France

11:45 - 12:00 Temperature and background field dependence of quench propagation in a compact MgB2 solenoid coil
YOUNG Edward1, FALORIO Iole1, PELEGRIN J1, JARVIS Alan2, YANG Yifeng1
11:00 - 11:15 Studies on the Application of SFCL in the Electrical Power Transmission System
LI Bin1, YIZHE Ou1
1Tianjin University, China

11:15 - 11:30 Can resistive type fault current limiter operate in cryogen-free environment?
VOJENCIK Michal1, ŠOUC Ján1, DUTOIT Bertrand2, GÖMÖRY Fedor1
1Institute of Electrical Engineering, SAS, Slovakia, 2Ecole Polytechnique Fédérale de Lausanne, Switzerland

11:30 - 11:45 Key Factors in Designing a Saturated Iron Core Superconducting Fault Current Limiter
CUI Jibin1, XIN Ying1, JIN Jianxun2, WEI Ziqiang3
1Futong Group, Co., China, 2Tianjin University, China, 3TECHNICAL UNIVERSITY OF HOLLAND
11:45 - 12:00 Experimental tests of a resistive SFCL integrated with a vacuum interrupter
PEI Xiaoze, SMITH Alexander, SHUTTLEWORTH Roger
1The University of Manchester, United Kingdom

12:00 - 12:15 Optical and Electrical Investigation of a Novel Method for Improving the Recovery under Load Characteristics of Thin Film Superconductors
HELLMANN Sebastian, NOE Mathias
1Karlsruhe Institute of Technology (KIT), Germany

12:15 - 12:30 Multiscale model of a resistive-type superconducting fault current limiters based on 2G HTS coated conductors
BONNARD Charles-Henri, SIROIS Frédéric, LACROIX Christian, DIDIER Gaëtan, DOUINE Bruno
1Ecole Polytechnique de Montréal, Canada, 2Université de Lorraine, France

3M-M-O1 Sep 9 - Morning (10:30-12:30 PM)
Materials - Vortex flux pinning II

Location: Saint Clair 3
Chairpeople: Judith DRISCOL, Isabel GUILLAMÓN

10:30 - 11:00 INV-Imaging the superconducting vortex lattice in nanostructured superconductors
GUILLAMÓN Isabel
1Universidad Autónoma de Madrid, Spain

11:00 - 11:15 Pinning and relaxation of vortices in CSD YBCO nanocomposites
VALLES Ferran, MUNDET Bernat, PALAU Anna, GAZQUEZ Jaume, CAYADO Pablo, LI Ziliang, COLL Mariona, OBRADORS Xavier, PUIG Teresa
1ICMAB-CSIC, Spain

11:15 - 11:30 Flux pinning due to hybrid APCs in REBCO superconducting films
MATSUMOTO Kaname, JHA Alok, HORIDE Tomoya, MELE Paolo, YOSHIDA Yutaka, AWAJI Satoshi
1Kyushu Institute of Technology, Japan, 2Hirosima University, Japan, 3Nagoya University, Japan, 4Tohoku University, Japan

11:30 - 11:45 Jc enhancement in REBCO films with BaHfO3 nanorods
YOSHIDA Yutaka, MIURA Shun, ICHINO Yusuke, ICHINOSE Ataru, AWAJI Satoshi, MATSUMOTO Kaname
1Nagoya university, Japan, 2Central Research Institute of Electric Power Industry, Japan, 3Tohoku university, Japan, 4Kyushu Institute of Technology, Japan

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11:45 - 12:00 Flux Pinning in Bose Glass State in SmBa2Cu3Oy Films with BaHfO3 Nanorods
AWAJI Satoshi¹, TSUCHIYA Yuji¹, WATANABE Kazuo¹, MIURA Shun¹, ICHINO Yusuke², YOSHIDA Yutaka²
¹Tohoku University, Japan, ²Nagoya University, Japan

12:00 - 12:15 Strong vortex pinning at microwave frequencies in solution-derived YBCO/BYTO nanocomposites
SILVA Enrico¹, POMPEO Nicola¹, TOROKHTII Kostiantyn¹, FROLOVA Anna¹, BARTOLOMÉ Elena², ANNA Palau², PUIG Teresa³
¹Università di Roma Tre, Italy, ²Escola Universitària Salesiana de Sarrià, Spain, ³Institut de Ciència de Materials de Barcelona, Spain

12:15 - 12:30 Study Lattice Strain Energy to Understand Difference in Diameter of Vertically-Aligned Secondary-Phase Oxide Nanorods in Epitaxial YBCO Films
SHI Jack¹, WU Judy¹
¹The University of Kansas, United States
11:45 - 12:00 Superconductivity above 77 K in Pb1212 Epitaxial Films
SACHIO Komori¹, ITSUHIRO Kakeya¹
¹Kyoto University, Japan

12:00 - 12:15 multilayered NbN/AlN structure to increase critical field for superconducting Radiofrequency Cavity.
MARCHAND Benoît¹, MARTINET Guillaume², FORTUNA Franck², BUAUMIER Cédric³, ANTOINE Claire³
¹IPN, Orsay, France, France, ²CSNSM, France, ³CEA/DSM/IRFU, France

12:15 - 12:30 Microstructure of Pb-free superconducting solders
AKSOY Canan¹, MOUSAVI Tayebeh¹, GROVENOR Chris¹, SPELLER Susannah¹
¹Oxford University, United Kingdom

3M-WT-O1 Sep 9 - Morning (10:30-12:30 PM)
Wires and Tapes - Conductor developments

Location: Auditorium Pasteur
Chairpeople: Marc DHALLE, Carmine SENATORE

10:30 - 11:00 Advances in the Development of a 10-kA Class REBCO cable for the EuCARD2 Demonstrator Magnet
BOTTURA Luca¹, A. Bade⁶, A. Ballarino¹, M. M. J. Dhallé³, R. Dietrich⁴, Ph. Fazilleau¹, J. Fleiter², W. Goldacker², J. Himbele², A. Kario⁵, ROSSI Lucio¹, C. Senatore⁶, P. Tixador², A. Usoskin⁷, G. Volpinì⁸, Y. Yang⁹, and N. Zangenberg¹⁰
¹CERN, Switzerland, ²Univ. Grenoble Alpes, France, ³Univ. of Twente, The Netherlands, ⁴Irifo – CEA, France, ⁵KIT, Germany, ⁶DPMC, University of Geneva, Switzerland, ⁷Bruker HTS, Germany, ⁸INFN – LASA, Italy, ⁹Univ. of Southampton, United Kingdom, ¹⁰Danish Institute of Technology, Denmark

11:00 - 11:30 HTS-Roebel-cables in competition to the CORC approach
GOLDACKER Wilfried¹, KARIO Anna¹, KLING Andrea¹, VOJENCIAK Michal², GODFRIN Aurelian¹, RINGSDORF Bernd¹, NAST Rainer¹, VAN DER LAAN Danko³
¹Karlsruhe Institute of Technology (KIT), Germany, ²Institute of Electrical Engineering, SAS, Slovakia, ³Advanced Conductor Technologies & University of Colorado, United States

11:30 - 11:45 Tests of HTS Slotted Core Cable-In-Conduit Conductors for High-Field Magnets Applications
CELENTANO Giuseppe¹, DE MARZI Gianluca¹, AUGIERI Andrea¹, DI ZENOBI Aldo¹, MUZZI Luigi¹, TOMASSETTI Giordano¹, ANEMONA Alessandro¹, VANNOZZI Angelo¹, RUFINOLI Alessandro¹, FABBRI Fabio¹, WEISS Klaus², BAYER Christoph², BAGRETS Nadezda², BRAGAGNI Albano², SERI Massimo², DELLA CORTE Antonio²
¹ENEA CR Frascati, Italy, ²Karlsruhe Institute of Technology (KIT), Germany, ³Tratos Cavi SpA, Italy
11:45 - 12:00 Towards In-house Industrial Assembly of the Superconducting Conductor for the 43 T Hybrid Magnet of LNCMI-Grenoble

PUGNAT Pierre¹, BERRIAUD Christophe², CAPLANNE Gwenaël¹, FAZILLEAU Philippe², HANOUX Pierre³, HERVIEU Bertrand³, PFISTER Rolf¹, PISSARD Marc¹, RONAYETTE Luc¹
¹LNCMI CNRS, France, ²CEA, France

12:00 - 12:15 High quality measurements on large quantities of samples for ITER and for other applications of Nb3Sn and NbTi

RAINE Mark¹, HAMPSHIRE Damian¹
¹Durham University, United Kingdom

12:15 - 12:30 Multifilamentary Nb3Sn wires fabricated through internal diffusion process using brass matrix

BANNO Nobuya¹, MIYAMOTO Yasuo², TACHIKAWA Kyoji²
¹National Institute for Materials Science, Japan, ²Tokai University, Japan

3A-E-O1 Sep 9 - Afternoon (4:30-6:30 PM)
Electronics - SQUID, SQIFS: systems and applications

Location: Rhône 2
Chairpeople: Carmine GRANATA, Emma MITCHELL

4:30 - 5:00 Deployable SQUID-based magnetic resonance imaging systems

MAGNELIND Per¹, MATLASHOV Andrei¹, NEWMAN Shaun¹, SANDIN Henrik², SEDILLO Robert¹, URBAITIS Algis¹, VOLEGOV Petr¹, ESPY Michelle¹
¹Los Alamos National Laboratory, United States

5:00 - 5:15 Hybrid type HTS-SQUID magnetometer with vibrating and rotating sample

TSUKADA Keiji¹, MORITA Koji¹, MATSUNAGA Yasuaki¹, SAARI Mohd¹, SAKAI Kenji¹, KIWA Toshihiko¹
¹Okayama University, Japan

5:15 - 5:30 Magnetic Properties of Nanoparticles Investigated by a NanoSQUID Based System

RUSSO Roberto¹, DI GÉNARRO Emiliano², ESPOSITO Emanuela¹, FIORANI Dino², GRANATA Carmine², VETTOLIERE Antonio³, PEDDIS Davide³
¹CNR-IMM, Italy, ²CNR-SPIN and Università di Napoli "Federico II", Italy, ³CNR, Istituto di Struttura della Materia, Italy

5:30 - 5:45 Breakthrough Techniques and Potential Applications with SQUID NMR/MRI

KIM Kiwoong¹, SHIM Jeong Hyun¹, LEE Seong-Joo¹, HWANG Seong-Min¹, YU Kwon-Kyu¹
¹Korea Research Institute of Standards and Science, South Korea
5:45 - 6:00 Detection of Biological Targets Using Brownian Relaxation of Magnetic Markers and HTS SQUID
ENPUKU Keiji¹, URA Masakazu¹, NAKAMURA Kohta¹, SASAYAMA Teruyoshi¹, YOSHIDA Takashi¹
¹Kyushu University, Japan

6:00 - 6:15 High Spurious Free Dynamic Range Attainable with Superconducting Arrays
KORNEV Victor¹, KOLOTINSKIY Nikolay¹, SHARAFIEV Alexey¹, MUKHANOVA Oleg⁴, SOLOVIEV Igor¹, KLENOV Nikolay¹
¹Lomonosov Moscow State University, Russia, ²Hypres Inc., United States

3A-E-O2 Sep 9 - Afternoon (4:30-6:30 PM)
Electronics - Detectors IV

Location: Salon Pasteur
Chairpeople: Sergey CHEREDNICHENKO, Alessandro MONFARDINI

4:30 - 5:00 Hot-electron nano-bolometers for astrophysics: superconductor vs normal metal
KARASIK Boris¹
¹Jet Propulsion Laboratory, United States

5:00 - 5:15 Terahertz superconducting Nb nanobolometer with microwave bias and readout
KUZMIN Artem¹, MERKER Michael¹, SHITOV Sergey², ABRAMOV Nikolay³, ERMakov Andrey³, ARNDT Matthias¹, WUENSCHE Stefan¹, ILIN Konstantin¹, USTINOVA Alexey¹, SIEGEL Michael¹
¹Chalmers University of Technology (KIT), Germany, ²NUST MISIS, Russia, ³Kotel’nikov IRE RAS, Russia

5:15 - 5:30 Wideband MgB2 Hot-Electron Bolometer Mixers: IF Impedance Characterisation and Modeling
BEVILACQUA Stella¹, NOVOSELOV Evgenii¹, CHEREDNICHENKO Sergey¹, SHIBATA Hiroyuki², TOKURA Yasuhiro²
¹Chalmers University of Technology, Sweden, ²NTT Basic Research Laboratories, Japan

5:30 - 5:45 Multifrequency Seashell Antennas with Resonant Cold-Electron Bolometers for the ESA's space missions
KUZMIN Leonid¹, MATROZOVAK Ekaterina²
¹Chalmers University of Technology, Sweden, ²Nizhniy Novgorod State Technical University, Russia

5:45 - 6:00 Superconducting detectors for neutrino mass measurements
FAVERZANI Marco¹
¹University & I.N.F.N. of Milano Bicocca, Italy

6:00 - 6:15 The superconducting anti-coincidence of the ATHENA x-ray space telescope
CORSINI Dario¹, BIASOTTI Michele¹, CERIALE Valentina¹, DE GERONE Matteo¹, GATTI Flavio¹, MACCULI Claudio², PIRO Luigi²
¹University and INFN of Genova, Italy, ²INFN of Genova, Italy, ³IAPS-INAF of Roma, Italy

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6:15 - 6:30 Superconducting transport through graphene-based Josephson junction under near infrared photoexcitation
Tsumura Kohei, Furukawa Naoki, Ito Hironori, Watanabe Eiichiro, Tsuya Daiju, Takayanagi Hideaki
1Tokyo University of Science, Japan, 2National Institute for Materials Science, Japan

3A-LS-O2 Sep 9 - Afternoon (4:30-6:30 PM)
Large Scale - Superconducting machines and transformers

Location: Rhône 1
Chairpeople: Xavier Granados, Jean Leveque

4:30 - 5:00 Design of Fully Superconducting Machines for Turbo-Electric Propulsion in Transportation Airplane
Masson Philippe
1University of Houston, United States

5:00 - 5:15 Case study of a pole pair segment of HTS direct drive wind turbine generator
Mijatovic Nenad
1Dept. of Electrical Engineering, DTU, Denmark

5:15 - 5:30 2G HTS armature winding design for fully HTS machines
Zhang Min, Yuan Weijia, Eastham Fred
1University of Bath, United Kingdom

5:30 - 5:45 Development of a 15 kW-class fully-superconducting synchronous generator
Qu Timing, Wu Qihong, Song Peng, Hong Zhiyong, Sun Renjun, Gu Chen, Han Zhenghe
1Department of Mechanical Engineering, Tsinghua University, China, 2Applied Superconductivity Research Center, China, 3Shanghai Superconductor Technology Co., Ltd., China

5:45 - 6:00 Test of 6 kVA 3-Phase Flux-Transfer Type Current-Limiting Transformer
Ertekin Ercan, Kosan Janos, Yanma Ekrem, Gecer Sahure, Safran Serap, Kilicarslan Ebru, Kilic Ahmet, Gencer Ali
1Center of Excellence for Superconductivity Research, Turkey, 2Karadeniz Technical University, Turkey

6:00 - 6:15 Design and Implementation of a Laboratory-scale Superconducting DC transmission line for wind power generation system
Kim Sung-Kyu, Dinhh Minh-Chau, Go Byeong-Soo, Kim Chang-Soon, Park Minwon, Yu In-Keun
1Changwon National University, South Korea

6:15 - 6:30 Gaseous Helium Circulation as an Alternative Cooling Method for HTS Power Devices
Pamidi Sastry, Graber Lukas, Kim Chul Han
1Florida State University, United States
Location: Rhône 3+4
Chairpeople: Lucio ROSSI, Pierre VEDRINE

4:30 - 5:00 LHC Upgrade
LAMONT Michael
1CERN, Switzerland

5:00 - 5:30 High Field Magnets for a Future pp Collider
GOURLAY Stephen
1Lawrence Berkeley National Laboratory, United States

5:30 - 5:45 Detector Magnets for the 100 TeV Future Circular Collider, a first look
TEN KATE Herman, DUDAREV Alexey, MENTINK Matthias
1CERN, Switzerland

5:45 - 6:00 Current-Carrying Characteristics of the 100-kA HTS STARS Conductor
TERAZAKI Yoshiro, YANAGI Nagato, ITO Satoshi, HAMAGUCHI Shinji, TAMURA Hitoshi, MITO Toshiyuki, HASHIZUME Hidetoshi, SAGARA Akio
1SOKENDAI (The Graduate University for Advanced Studies), Japan, 2National Institute for Fusion Science, Japan, 3Tohoku University, Japan

6:00 - 6:15 Development of a comprehensive thermal-hydraulic model for a DEMO TF coil
NALLO Giuseppe Francesco, BONIFETTO Roberto, DICUONZO Ortensia, MUZZI Luigi, TURTU' Simonetta, SAVOLDI Laura, ZANINO Roberto
1Politecnico di Torino, Italy, 2ENEA, Italy

6:15 - 6:30 Winding Pack Proposed for the TF and CS coils of European DEMO
WESCOHE Rainer, SEDLAK Kamil, BYKOVSKY Nikolay, BRUZZONE Pierluigi, ZANI Louis, COLEMAN Matti
1EPFL-CRPP, Switzerland, 2CEA, France, 3EUROfusion, Germany

Location: Saint Clair 3
Chairpeople: Fritz KURTH, Martin RUPICH

4:30 - 5:00 Unusually high critical current of clean P- doped BaFe2Fe2 single crystalline thin film
KURTH Fritz, TARANTINI Chiara, GRINENKO Vadim, HAENISCH Jens, JAROSZYNSKI Jan, REICH Elke, MORI Yasohiro, SAKAGAMI Akihiro, KAWAGUCHI Takahiko, ENGELMANN Jan, SCHULTZ Ludwig, HOLZAPFEL Bernhard, IKUTA Hiroshi, HUEHNE Ruben, IIDA Kazumasa

3A-M-O1 Sep 9 - Afternoon (4:30-6:30 PM)
Materials - Transport properties
5:00 - 5:15 Comparative study of critical current properties in K, Co, and P-doped BaFe2As2 superconductors
ISHIDA Shigeyuki, SONG Dongjoon, KIHOU Kunihiro, NAKAJIMA Masamichi, IYO Akira, EISAKI Hiroshi, SHIMOYAMA Jun-Ichi
AIST, Japan, Osaka University, Japan, Aoyama Gakuin University, Japan

5:15 - 5:30 Anisotropy of Critical Current Densities in Ag-sheath (Sr,K)Fe2As2 tapes
AWAJI Satoshi, NAKAZAWA Yushiro, TSUCHIYA Yuji, OGURO Hidetoshi, WATANABE Kazuo, LIN He, YAO Chaoyang, ZHANG Xianping, MA Yanwei
Tohoku University, Japan, Chinese Academy of Sciences, China

5:30 - 5:45 Detailed investigation of critical current density behaviour in FeSe0.5Te0.5 films synthesized by pulsed laser ablation
KAWALE Shrikant, BELLINGERI Emilio, FERDEGHINI Carlo, PUTTI Marina
CNR-SPIN Institute, Italy, CNR-SPIN and University of Genova, Italy

5:45 - 6:00 Controlling the critical current anisotropy of YBCO superconducting films by incorporating hybrid artificial pinning centers
JHA Alok, MATSUMOTO Kaname, HORIDE Tomoya, SAINI Shrikant, MELE Paolo, YOSHIDA Yutaka, AWAJI Satoshi
Kyushu Institute of Technology, Japan, Hiroshima University, Japan, Nagoya University, Japan, Tohoku University, Japan

6:00 - 6:15 Granularity vs. vortex pinning: actual performance limitation of coated conductors as function of field, temperature and orientation
MAYRALUNA Lao, VLAD Valentina, PARDO Enric, ZEHETMAYER Martin, USOSKIN Alexander, STRÖMER Jan, PAHLKE Patrick, SIEGER Max, HÜHNE Ruben, CALLEJA Albert, EISTERER Michael
Atominstitut, Vienna University of Technology, Austria, OXOLUTIA SL, Spain, Slovak Academy of Sciences, Slovakia, Bruker HTS, Germany, Institute for Metallic Materials, IFW Dresden, Germany

6:15 - 6:30 Engineered weak-links in superconducting films
VALERIO Marlon, MOTA Maycon, COLAUTO Fabiano, ANDRADE Antonio Marcos, JOHANSEN Tom Henning, ORTIZ Wilson
Universidade Federal de São Carlos, Brazil, Universidade Federal do Rio Grande do Sul, Brazil, University of Oslo, Norway
Location: Auditorium Lumière
Chairpeople: Teresa PUIG, Venkat SELVAMANICKAM

4:30 - 5:00 Field and temperature scaling of the critical current density in commercial REBCO coated conductors
SENATORE Carmine¹, BONURA Marco¹, MONDONICO Giorgio¹, BARTH Christian¹
¹University of Geneva, Switzerland

5:00 - 5:30 High Magnetic Field Critical Current Measurements on Superconducting (RE)Ba2Cu3O7-δ Coated Conductors for Fusion Energy Applications
BRANCH Paul¹, HAMPSHIRE Damian¹
¹Durham University, United Kingdom

5:30 - 5:45 Influence of Highly Textured IBAD Based Template on In-Filed Current Transport Properties in GdBaCuO Coated Conductors
KISS Takanobu¹, TANEDA Takahiro², TAKASAKI Ken¹, TANAKA Kenta⁴, INOUE Masayoshi¹, KATO Takeharu³, IZUMI Teruo², SHIOHARA Yuh²
¹Kyushu University, Japan, ²ISTEC-SRL, Japan, ³Japan Fine Ceramics Center, Japan

5:45 - 6:00 Continuous reel-to-reel inkjet printing of Ce0.9Zr0.1O2 and YBa2Cu3O7 layers for long length production of coated conductors
VILARDELL Marta¹, VLAD Valentina¹, SINTAS Xavier¹, RICART Susagna², GRANADOS Xavier², PUIG Teresa², OBRADORS Xavier², USOSKIN Alexander³, CALLEJA Albert¹
¹OXOLUTIA, S.L., Spain, ²Institut de Ciència de Materials de Barcelona, Spain, ³Bruker HTS, Germany

6:00 - 6:15 Preparation of YBCO film on conductive Nb-doped SrTiO3 and Ni buffered {100}<001> Cu/SS316 lamination tape
DOI Toshiya¹, HASHIMOTO Masayuki¹, HORII Shigeru¹, ICHINOSE Ataru²
¹Kyoto University, Japan, ²CRIEPI, Japan

6:15 - 6:30 Fabrication of multi-filamentary coated conductors with high uniformity of Ic distribution and characterizations of magnetic relaxation properties
MACHI Takato¹, LIU Jin¹, NAKANISHI Tsuyoshi¹, IBI Akira¹, IZUMI Teruo¹
¹ISTERA/ISTEC, Japan
Microwave quenching in DC-biased coplanar waveguide based on YBa2Cu3O7-δ thin film
CHERPAK Nickolay (Mykola)\textsuperscript{1}, GUBIN Alexey\textsuperscript{1}, LAVRINOVICH Alexander\textsuperscript{1}, VITUSEVICH Svetlana\textsuperscript{2}
\textsuperscript{1}O.Usikov IRE NAS of Ukraine, Ukraine, \textsuperscript{2}Peter Grünberg Institute, Forschungszentrum, Germany

Development of superconducting microwave resonator with ultralow dielectric loss
QIU Wei\textsuperscript{1}, MAKISE Kazuma\textsuperscript{1}, TERAI Hirotaka\textsuperscript{1}
\textsuperscript{1}Advanced ICT Research Institute, National Institute Information and Communications Technology, Japan

Circularly Polarized Terahertz Wave Generated by Inhomogeneous Intrinsic Josephson Junctions
ASAI Hidehiro\textsuperscript{1}, KAWABATA Shiro\textsuperscript{1}
\textsuperscript{1}National Institute of Advanced Industrial Science and Technology, Japan

Broadband High-Tc Superconducting Terahertz Emitter Devices: A Comparison between Differently Shaped Devices
DELFANAZARI Kaveh\textsuperscript{1}, TAKANARI Kashiwagi\textsuperscript{2}, TSUJIMOTO Manabu\textsuperscript{2}, KITAMURA Takeo\textsuperscript{2}, ASAI Hidehiro\textsuperscript{1}, YAMAMOTO Takashi\textsuperscript{2}, WILSON Wade\textsuperscript{3}, KLEMM A. Richard\textsuperscript{4}, HATTORI Toshiaki\textsuperscript{2}, KADOWAKI Kazuo\textsuperscript{2}
\textsuperscript{1}University of Southampton, United Kingdom, \textsuperscript{2}University of Tsukuba, Japan, \textsuperscript{3}Kyoto University, Japan, \textsuperscript{4}National Institute of Advanced Industrial Science and Technology, Japan, \textsuperscript{5}National Institute of Materials Science, Japan, \textsuperscript{6}University of Central Florida, United States

Terahertz generation with high-Tc Josephson junction arrays: simulations and experiments.
MALNOU Maxime\textsuperscript{1}, SHARAFIEV Aleksei\textsuperscript{1}, PALMA Cheryl\textsuperscript{1}, ULYSSE Christian\textsuperscript{2}, FEVBRE Pascal\textsuperscript{1}, LESUEUR Jérôme\textsuperscript{1}, BERGEAL Nicolas\textsuperscript{2}, ESPCI - UMR8213, France, \textsuperscript{2}LPN-CNRS, France, \textsuperscript{3}LAHC Université de Savoie, France

Prediction of resonant modes of Archimedean spirals on dielectric substrates
HOOKER Jerris\textsuperscript{1}, RAMASWAMY Vijaykumar\textsuperscript{2}, ARORA Rajendra\textsuperscript{1}, EDISON Arthur\textsuperscript{1}, BREY William\textsuperscript{1}
\textsuperscript{1}Florida State University, United States, \textsuperscript{2}University of Florida, United States
High-Temperature Superconducting Composite Right/Left-Handed Resonator
LIU Hai¹, WEN Pin¹
¹East China Jiaotong University, China

Temperature Dependence of Characteristics in Composite Right- and Left-Handed Metamaterial
LIU Hai¹, ZHU Shuang¹
¹East China Jiaotong University, China

Wideband and Low-Loss High-Temperature Superconducting Bandpass Filter Based On Metamaterial Stepped-Impedance Resonator
LIU Hai-Wen¹
¹East China Jiaotong University, China

Long-Distance Transfer and Routing of Static Magnetic Fields
PRAT-CAMPS Jordi¹, NAVAU Carles¹, SANCHEZ Alvaro¹
¹Universitat Autònoma de Barcelona, Spain

Imaging coherent response of a superconducting metasurface
KARPOV Alexandre¹, AVERKIN Alexander¹, ZHURAVEL Alexander², JUNG Philipp¹, MALEEEVA Natalia¹, KOSHELETS Valery¹, FILIPPENKO Ludmila¹, USTINOVO Alexey²
¹National University of Science and Technology, Russia, ²B. Verkin Institute for Low Temp. Physics, Ukraine, ³Physikalisches Inst., Karlsruhe Institute of Technology, Germany, ⁴Kotel’nikov IRE RAS, Russia

Research on Non-destructive Examination of Jacket Sections for CFETR Central Solenoid (CS) Model Coil
LIU Xiaochuan¹, WU Yu², QIN Jinggang², LI Liang²
¹University of Science and Technology of China, China, ²Institute of Plasma Physics, CAS, china

Characteristics of high-temperature YBCO metamaterials
CHIU-HSIEN Wu¹, CHIN-WEI Lin¹
¹Institute of Nanoscience, Taiwan (ROC)

Temperature Dependence of Optical Response and The Under Irradiation I-V Characteristics of YBCO Grain-boundary Josephson Junctions
ESMAEILI Mohaddeseh¹, MOHAJERI Roya¹, NAZIFI Rana¹, VESAGHI Mohammad Ali¹, FARDMANESH Mehdi¹
¹Sharif University of Technology, Iran
Progress and Prospective of HEB Sensors Based on High-Tc Superconductors
KARASIK Boris¹, SERGEEV Andrei²
¹Jet Propulsion Laboratory, United States, ²SUNY at Buffalo, USA

Draining of Direct-Current and Radio-Frequency Heating in Hybrid SIS Devices
SELIG Stefan¹, WESTIG Marc², JACOBS Karl¹, SCHULTZ Michael¹, HONINGH Cornelis¹
¹Universität zu Köln, Germany, ²CEA Saclay, France

Period-doubling-bifurcations at 4.2 K in 3 GHz Nb thin-film resonators with Josephson nonlinearity
KHABIPOV Marat¹, MACKRODT Brigitte¹, DOLATA Ralf¹, ZORIN Alexander¹
¹Physikalisch-Technische Bundesanstalt, Germany

High detection efficiency superconducting nanowire single photon detectors from visible to near infrared wavelengths
LI Hao¹
¹Shanghai Institute of Microsystem & Information Technology, China

60 THz Hot Electron Bolometers with Nano-Antenna
KAWAKAMI Akira¹, HORIKAWA Junsei¹, SHIMAKAGE Hisashi², HYODO Masaharu³, TANAKA Shukichi¹, UZAWA Yoshinori¹
¹National Institute of Information and Communications, Japan, ²Ibaraki University, Japan, ³Kanazawa University, Japan

Local response of a superconducting single-photon detector in a scattering SNOM
WANG Qiang¹, RENEMA Jelmer¹, ENGEL Andreas², VAN EXTER Martin¹, DE DOOD Michiel¹
¹Leiden University, Netherlands, ²University of Zurich, Switzerland

Critical currents and detection efficiency of spiral SNSPDs in magnetic field
CHARAEV Ilya¹, LUSCHE Robert², SEMENOV Alexei², ILIN Konstantin¹, SIEGEL Michael¹
¹Karlsruhe Institute of Technology (KIT), Germany, ²German Aerospace Centre (DLR), Germany

Thickness Dependence of Composition and Electrical Properties for NbTiN Films Prepared on MgO Substrates
ZHANG Lu¹, WEI Peng¹, YOU Xing¹, WANG Zhen¹
¹Shanghai Institute of Microsystem & Information Technology, China

Temperature dependence of subgap current in SIS junctions
AZUMA Chiaki¹, SAITO Atsushi², KAITO Masami³, KAWAKAMI Akira², OHSHIMA Shigetoshi¹
¹Yamagata University, Japan, ²National Institute of Information and Communications, Japan

The modified observation of current density distribution in superconducting strip by scanning Hall-probe magnetic microscopy
SI Fan¹, WANG Sansheng¹, ZHAO Yan¹, HOU Huaan¹
¹Beihang University, China
Fabrication and characteristics of high-Tc superconducting/magnetoresistive mixed sensors
WANG Chih-Yi, YANG Tien-Wei, TSENG Chun-Chin, WANG Li-Min
\(^1\) National Taiwan University, Taiwan (ROC)

Study of SSPD voltage response times over the range of its active areas.
SIDOROVA Mariia, DIVOCHIY Alexander, VACHTOMIN Yury, SMIRNOV Konstantin
\(^1\) Moscow State Pedagogical University, Russian Federation, \(^2\) CJSC “Superconducting nanotechnology”, Russian Federation

Superconducting Detectors for Small Object Gravity Fields: Theoretical Concepts and First Experimental Results
GULIAN Armen, FOREMAN Joe, NIKGHOSYAN Vahan, BURDETTE Chris, SICA Lou, TOLLAKSEN Jeff, NUSSINOV Shmuel
\(^1\) Chapman University, United States, \(^2\) Independent Researcher, United States, \(^3\) Tel-Aviv University, Israel

Scalable array of superconducting terahertz Nb nanobolometers with microwave bias and readout
KUZMIN Artem, SHITOV Sergey, MERKER Michael, ARNDT Matthias, WUENSCH Stefan, ILIN Konstantin, USTINOVA Alexey, SIEGEL Michael
\(^1\) Karlsruhe Institute of Technology (KIT), Germany, \(^2\) NUST MISIS, Russia

Is it possible to have superconducting magnetic sensors more sensitive than SQUIDs?
GULIAN Armen, NIKGHOSYAN Vahan
\(^1\) Chapman University, United States

Aluminum-Titanium bilayer for near-infrared Transition Edge Sensors
LAPO Lolli, SILVIA Giomi, EMANUELE Taralli, CHIARA Portesi, MAURO Rajteri, EUGENIO Monticone
\(^1\) INRIM, Italy

Annealing effect on superconducting properties of Ti/Au TES
MONTICONE Eugenio, LOLLi Lapi, PORTESI Chiara, TARALLI Emanuele, RAJTERI Mauro
\(^1\) INRIM, Italy

Metallic Magnetic Calorimeter for Neutrinoless Double Beta Decay Search
KANG Chan Seok
\(^1\) Institute for Basic Science, South Korea
Ultra-Low Field High Tc SQUID NMR/MRI System with 77K Cooled Copper Flux Transformer
TANAKA Saburo\textsuperscript{1}, HIROSE Yuuya\textsuperscript{1}, YAMAMOTO Masaaki\textsuperscript{1}, TOYOTA Hirotomo\textsuperscript{1}, KAWAGOE Satoshi\textsuperscript{1}, HATTA Junichi\textsuperscript{1}, ARIYOSHI Seiichi\textsuperscript{1}
\textsuperscript{1}Toyohashi University of Technology, Japan

Analysis of the flux modulation scheme for dc SQUID readout
HONG Tao\textsuperscript{1}, ZHANG Yi\textsuperscript{1}, KRAUSE Hans\textsuperscript{1}, BRAGINSKI Alex\textsuperscript{1}, XIE Ming\textsuperscript{1}, OFFENHÄUSSER Andreas\textsuperscript{1}, JIANG Heng\textsuperscript{2}
\textsuperscript{1}Forschungszentrum Jülich, Germany, \textsuperscript{2}State Key Laboratory of Functional Materials for Informatics, Shanghai Institute, China

Design and Implementation of Double Frequency Single Coil SQUID based Nondestructive Evaluation System
SHANEHSAZZADEH Faezeh\textsuperscript{1}, ROSTAMI Behnush\textsuperscript{1}, SADEGHI Sanaz\textsuperscript{2}, KALANTARI Nafise\textsuperscript{1}, FARDMANESH Mehdi\textsuperscript{1}
\textsuperscript{1}Superconducting Electronics Research Lab., Iran

Environmental Noise Cancelation by Bi-layer Active Shield in Liquid Nitrogen based Magnetocardiography
SHANEHSAZZADEH Faezeh\textsuperscript{1}, KALANTARI Nafise\textsuperscript{1}, SARRESHTEDARI Farrokh\textsuperscript{2}, FARDMANESH Mehdi\textsuperscript{1}
\textsuperscript{1}Superconducting Electronics Research Lab., Iran, \textsuperscript{2}University of Tehran, Iran

Two-Dimensional Magnetic Field Modulation of Current-Voltage Characteristics of Various Shape Tunnel Junctions and Superconducting Quantum Interference Devices
NAKAYAMA Akiyoshi\textsuperscript{1}, ABE Susumu\textsuperscript{1}
\textsuperscript{1}Kanagawa University, Japan

Imaging Magnetic-Nanoparticles-Targeted Tumors Using Low-Power Ultrasound Excitation
JEN-JIE Chieh\textsuperscript{1}, HERNG-ER Horng\textsuperscript{1}, KAI-WEN Huang\textsuperscript{2}, PEI- Yi Hsiao\textsuperscript{1}, HONG-CHANG Yang\textsuperscript{1}
\textsuperscript{1}National Taiwan Normal University, Taiwan (ROC), \textsuperscript{2}National Taiwan University Hospital, Taiwan (ROC)

In-vivo Multifunctional Imaging by the Endoscope Type of Scanning SQUID Biosusceptometry
HERNG-ER Horng\textsuperscript{1}, JEN-JIE Chieh\textsuperscript{1}, KAI-WEN Huang\textsuperscript{2}, PEI- Yi Hsiao\textsuperscript{1}, HONG-CHANG Yang\textsuperscript{1}
\textsuperscript{1}National Taiwan Normal University, Taiwan (ROC), \textsuperscript{2}National Taiwan University Hospital, Taiwan (ROC)

Proximity Effect Driven Reversibility in Superconducting Constructions
KUMAR Nikhil\textsuperscript{1}, FOURNIER T.\textsuperscript{2}, COURTOIS H.\textsuperscript{2}, WINKELMANN C.\textsuperscript{2}, GUPTA Anjan\textsuperscript{1}
\textsuperscript{1}Indian Institute of Technology, Kanpur, India, \textsuperscript{2}Institute Neel, CNRS and University Joseph Fourier, France
A numerical study of magnetization loops of type-II superconductors in SQUID-based ultralow field nuclear magnetic resonance

HWANG Seong-Min¹, KIM Kiwoong¹, YU Kwon Kyu¹, LEE Seong-Joo¹, SHIM Jeong Hyun¹, KOERBER Rainer², BURGHOFF Martin²
¹Korea Research Institute of Standards and Science, South Korea, ²Physikalisch-Technische Bundesanstalt, Germany

The Study of T1/T2-Relaxation Time of Magnetic Fluid in Ultra-Low Field MRI and 7T-MRI

LIAO Shu-Hsien¹, LAI Jui-Tse¹, WANG Ming-Wei¹, CHIEH Jen-Jie¹, YANG Hong-Chang¹, HORNG Herng-Er¹
¹National Taiwan Normal University, Taiwan (ROC)

High-Tc SQUID detected low-field NMR and MRI

YANG Hong-Chang¹, LIAO Shu-Hsien¹, LAI Jui-Tse¹, HUANG Kai-Wen¹, CHIEH Jen-Jie¹, HORNG Herng-Er¹
¹National Taiwan Normal University, Taiwan (ROC), ²National Taiwan University Hospital, Taiwan (ROC)

Development progress of a superconducting fault current limiter magnetic energy storage system

WENYONG Guo¹
¹Institute of Electrical Engineering, Chinese Academy of Sciences, China

Design of a 1.5-MJ HTS-SMES Magnet

LI Yi¹, QU Timing¹, GU Chen¹, FENG Feng¹, HAN Zhenghe¹
¹Tsinghua University, China

Development of two HTS SMES magnet.

PASQUET Raphaël¹, BADEL Arnaud², BROMMER Volker³, CICERON Jeremie², FOREST Frederick¹, SCHNEIDER Markus³, TIXADOR Pascale, VOISIN Emmanuel¹
¹SigmaPhi, France, ²University Grenoble Alpes, France, ³ISL, France

Hybrid Superconducting Magnetic Device: Energy storage, fault current limiting and magnetic separation

WOLFUS Shuki¹, NIKULSHIN Yasha¹, FRIEDMAN Alex¹, PEREL Eliezer¹, YESHURUN Yosef¹
¹Bar-Ilan University, Israel

Detailed Modeling of SMES considering AC loss of Superconducting Magnet

LIU Yang¹, TANG Yuejin¹, SHI Jing¹, GONG Kang¹, REN Li¹
¹Huazhong University of Science and Technology, China

Application of Distributed Hybrid Energy Storage System Consist of SMES in Micro-Grid

GONG Kang¹, SHI Jing¹
¹Huazhong University of Science and Technology, China
Mechanical Stress Property of a Large Scale HTS SMES
LEE Ji-Young\(^1\), LEE Seyeon\(^1\), KIM Yongil\(^3\), PARK Sang Ho\(^1\), CHOI Kyeongdal\(^1\), LEE Ji-Kwang\(^1\), HONG Gye-Won\(^1\), KIM Woo-Seok\(^1\)
\(^1\)Korea Polytechnic University, South Korea, \(^2\)Woosuk University, South Korea

Design and Test of High-Tc Superconducting Power Converting System Considering Various Operating Modes of Heater Triggered Switches
LEE Jeyull\(^1\), PARK Young Gun\(^1\), JO Hyun Chuf\(^2\), HO MIN Kim\(^3\), CHUNG Yoon Do\(^3\), YONG Chul\(^2\), YOON Yong Soo\(^6\), KO Tae Kuk\(^1\)
\(^1\)Yonsei University, South Korea, \(^2\)Institute for Basic Science, South Korea, \(^3\)Jeju National University, South Korea, \(^4\)Suwon Science College, South Korea, \(^5\)National Fusion Research Institute, South Korea, \(^6\)Shin Ansan University, South Korea

Constant Field Toroidal SMES Magnet
RADOVINSKY Alexey\(^1\), BROMBERG Leslie\(^1\), MINERVINI Joseph\(^1\), MICHAEL Phil\(^1\), SERVAIS Thomas\(^2\), FORTON Eric\(^2\), PEARSON Emma\(^3\)
\(^1\)Massachusetts Institute of Technology, United States, \(^2\)Ion Beam Applications S.A., Belgium

Economical analysis of the toroid-type HTS DC reactor compared with conventional DC reactor
KIM Kwangmin\(^1\), PARK Minwon\(^1\), YU In-Keun\(^1\), KIM Arong\(^2\)
\(^1\)Changwon National University, South Korea, \(^2\)Research Institute of Industrial Science & Technology, South Korea

Superconducting stabilizer for embedded DC electrical grid
DOUINE Bruno\(^1\), DIDIER Gaetan\(^1\), HUANG Guanbin\(^1\), NAHIDMOBARAKEH Babak\(^1\), PIERFEDERICI Serge\(^1\)
\(^1\)Université de Lorraine, France

Design and experimental investigation of a model of 12 kVA superconducting transformer for low voltage network
WOJTASIEWICZ Grzegorz\(^1\), JANOWSKI Tadeusz\(^1\), KOZAK Slawomir\(^1\), KOZAK Janusz\(^1\), MAJKA Michal\(^1\), KONDRATOWICZ-KUCEWICZ Beata\(^1\)
\(^1\)Electrotechnical Institute in Warsaw, Poland

Superconducting transformers in low and medium voltage distribution network with renewable energy sources
JANOWSKI Tadeusz\(^1\), WOJTASIEWICZ Grzegorz\(^1\), KOZAK Slawomir\(^1\), KOZAK Janusz\(^1\), MAJKA Michal\(^1\), KONDRATOWICZ-KUCEWICZ Beata\(^1\)
\(^1\)Electrotechnical Institute in Warsaw, Poland
Vector-potential transformer with supercond. secondary coil  
DAIBO Masahiro, OSHIMA Shuzo, SASAKI Yoichi  
1Iwate University, Japan

Prospects for HTS transformers in the grid: AC loss and economics  
STAINES Mike, PARDO Enric, JOLLIFFE Liam, PANNU Mohinder, GLASSON Neil  
1Victoria University of Wellington, New Zealand, 2Electrical Engineering Institute, Slovakia, 3Wilson Transformer Company, Australia, 4Callaghan Innovation, New Zealand

Protection scheme for the first demonstration of 154 kV HTS cable at a live power grid in Korea  
LEE Seung Ryul, LEE Jong-Joo, YOON Jae-young, PARK Minwon, KANG Yeon Woog  
1KERI (Korea Electrotechnology Research Institute), South Korea, 2Changwon University, South Korea, 3KEPCO Research Institute, South Korea

Development of a novel adaptive distance relay considering the operation of 154 kV SFCL using a Real-Time Controller  
LEE Jong Joo, LEE Seung Ryul, YOON Jae-Young, KANG Yeon Woog  
1Korea Electrotechnology Research Institute, South Korea, 2Korea Electric Power Corporation, South Korea

An Intelligent Monitoring System on the HTS Transformer Based on its Physical, Dynamic Characteristics  
CHOI Sungyun  
1Korea Electrotechnology Research Institute, South Korea

Development of small scale supercond. transformer prototype  
MACHADO JUNIOR Paulo, POLASEK Alexander, SOTELO Guilherme, MARTINS Helvio, DIAS Daniel  
1Fluminense Federal University, Brazil, 2Electrical Energy Research Center, Brazil

Simulation of Resistive Superconducting Fault Current Limiters Operation in a Power Distribution System Expansion Scenario  
MAFRA Gabriel, SOUSA Wescley, SOTELO Guilherme, FORTES Marcio, DE ANDRADE JR. Rubens  
1Fluminense Federal University, Brazil, 2Federal University of Rio de Janeiro, Brazil

Switching and Decoupling Effects in a Single-Phase Transformer Using Extra DC Current  
GECER Sahure, KOSA Janos, YANMAZ Ekrem, ERTEKIN Ercan, SAFRAN Serap, KILICARSLAN Ebru, KILIC Ahmet, GENCER Ali  
1Ankara University, Turkey, 2Karadeniz Technical University, Turkey

High Tc Superconducting Magnetic Energy Storage System for Stabilization of Indian Power Grid  
RAO V V, BHOWMICK Barin De, BRAHMACHARY Poulomi, RAO S B R, SUNDARAN Akhil  
1IIT Kharagpur, India, 2Powergrid Corporation of India, India
Investigation of Thermal Conductivity of Syntactic Foam at 77 K
WINNEL Daniel, SEIBEL Stefan, PUFFER Ralf, SCHNETTLER Armin
1RWTH Aachen University, Germany

Investigation of the flashover voltage of thin polymer films in liquid nitrogen
BAUER Christian, BRÜSTLE Roman, BONIN Richard, HUMPERT Christof
1Cologne University of Applied Sciences, Germany

Sensitivity analysis of breakdown voltage calculations for liquid nitrogen
HILL Nicholas, BLAZ Michael, KURRAT Michael
1Technische Universität Braunschweig, Germany

Breakdown characteristics of liquid nitrogen in strongly inhomogeneous electric fields
HAERST Martin, BONIN Richard, HUMPERT Christof
1Cologne University of Applied Sciences, Germany

3D Printed Cryogenic High Voltage Devices
FINK Stefan, BAGRETS Nadezda, FUHRMANN Uwe, LANGE Christian, MUELLER Ralf, WEISS Klaus-Peter, ZWECKER Volker
1Karlsruhe Institute of Technology (KIT), Germany, 2FZK, Germany

Pressure Dependence and Size Effect of Dynamic Breakdown Characteristics of LN2 under Transient Electrical-Thermal Combined Stress
HAYAKAWA Naoki, MATSUOKA Tatsuya, ISHIDA Kazuki, KOJIMA Hiroki, ISOMORI Shigeaki, KUWATA Minoru
1Nagoya University, Japan, 2Sumitomo Electric Industries, Ltd., Japan, 3Nissin Electric Co, Ltd., Japan

PE300 Cryogenic High Voltage Insulators
BAGRETS Nadezda, FINK Stefan, ZWECKER Volker, WEISS Klaus-Peter
1Karlsruhe Institute of Technology (KIT), Germany

Electrical Tree Initiation of Epoxy Resin in LN2 for Superconducting Magnet Insulation
DU Boxue, ZHANG Miaomiao, XIN Ying, JIN Jianxun
1Tianjin University, China

Design, test and validation of thermometric chains for ITER Magnets
MANZAGOL Jean, ATTARD Anthony, BIZEL-BIZELLLOT Louis, BONNAY Patrick, DEVRED Arnaud, GIRARD Alain, HUYGEN Sebastien, JOURNEAUX Jean-Yves
1Univ. Grenoble Alpes / CEA, France, 2ITER Organization, France
New facility for the cryogenic test of ITER CC 10 kA current leads at ASIPP

DING Kaizhong¹, FENG Hansheng¹, LIU Chenglian¹, DU Qing¹, KUN Lu¹
¹ASIPP(CN), China

Commercial pulse tube cryocoolers producing 330 W and 1000 W at 77 K for liquefaction.

CAUGHLEY Alan¹, EMERY Nick¹, NATION Michael¹, REYNOLDS Hugh⁴, BOYLE Christopher⁴, MEIER Jonas², TANCHON Julien³, ALLPRESS Nathan¹, BRANJE Patrick¹, KIMBER Andrew¹
¹Callaghan Innovation, New Zealand, ²Fabrum Solutions, New Zealand, ³Absolut System, France

Thermal and structural design of a cryogen-free cooling system for a HTS NMR magnet

IN Sehwan¹, HONG Yong-Ju¹, YEOM Hankil¹, KO Junseok¹, KIM Hyobong¹, PARK Seong-Je¹
¹Korea Institute of Machinery and Materials, South Korea

Circulation test of liquid nitrogen for long superconducting DC power transmission lines

WATANABE Hirofumi², IVANOV Yury¹, HAMABE Makoto¹, CHIKUMOTO Noriko¹, KAWAHARA Toshio¹, TAKANO Hirohisa¹, YAMAGUCHI Satarou¹
¹Chubu University, Japan

Thermosiphon effect during cooling test of 200m DC HTS cable facility

IVANOV Yury¹, WATANABE Hirofumi¹, CHIKUMOTO Noriko¹, HAMABE Makoto¹, TAKANO Hirohisa¹, SUN Jian¹, YAMAGUCHI Satarou¹
¹Chubu University, Japan

Development of a liquid hydrogen recirculation test facility for evaluation of superconducting conductor cooled by a forced flow of liquid hydrogen

TATSUMOTO Hideki¹, SHIRAI Yasuyuki², SHIOTSU Masahiro², NARUO Yoshihiro³, KOBAYASHI Hiroaki³, NONAKA Satoshi³, INATANI Yoshihiko³
¹Japan Atomic Energy Agency, Japan, ²Kyoto University, Japan, ³JAXA, Japan

Development of a cryogenic hydrogen pump with dynamic gas bearings

TATSUMOTO Hideki¹, OHTSU Kiichi¹, KAWAKAMI Yoshihiko¹
¹Japan Atomic Energy Agency, Japan

Design and Implementation of closed cooling system for the Power Grid Operation of 22.9 kV HTS Cable

LIM Ji Hyun¹, SOHN Song Ho¹, YIM Seong Woo¹, JUNG Se Yong¹, YANG Hyeong Suk¹, HAN Sang Chul¹
¹Korea Electric Power Corporation Research Institute, South Korea
HTS based electrical devices with low cryo-consumption: development of concepts
USOSKIN Alexander, RAO Vasudeva, PANTSYRNY Victor, SYTNIKOV Victor, KOLOSKOV Sergei, DIETRICH Reinhard
1 Bruker HTS, Germany, 2 Cryogenic Engineering Centre, India, 3 Russian Superconductors OAO, Russia, 4 Fegeral Grid Company, Russia

Design and Analysis of CFETR CSMC Cooling Loop
HAO Qiangwang, WU Yu, SHI Yi, LIU Bo
1 Institute of Plasma Physics, CAS, China

Test of the cooling system for the 154 kV class SFCL.
YEOM Hankil, HONG Yong-Ju, IN Sehwan, KO Junseok, KIM Hyobong, PARK Seong-Je
1 KIMM, South Korea

Carbon veils as an MLI spacer for high vacuum in long length Dewars
BAILEY Wendell, PELEGRIN Jorge, BEDUZ Carlo, YANG Yifeng
1 University of Southampton, United Kingdom

Variable Temperature Helium Refrigerator/Liquefier for NIFS Superconducting Magnet Test Facility
HAMILUCHI Shinji, IWAMOTO Akifumi, TAKAHATA Kazuya, TAKADA Suguru, IMAGAWA Shinsaku, MITO Toshiyuki, MORIUCHI Sadatomo, OBA Koki, TAKAMI Shigeyuki, HIGAKI Haruhiro, KUMAKI Takuya, NADEHARA Koji
1 National Institute for Fusion Science, Japan, 2 Taiyo Nippon Sanso Corporation, Japan

1A-LS-P-05 Sep 7 - Afternoon (2:00-4:00 PM)
Large Scale - Fusion and detector magnets

Multi-scale Stress Analysis and Study of 3D Fitting Structure on a Superconducting Coils for the Helical Fusion Reactor
TAMURA Hitoshi, YANAGI Nagato, TAKAHATA Kazuya, SAGARA Akio, ITO Satoshi, HASHIZUME Hitoshi
1 National Institute for Fusion Science, Japan, 2 Tohoku University, Japan

MgB2 conductors for low field coils and feeders in fusion energy reactors
BAGNI Tommaso, DIJKSTRA Marcel, ZHOU Chao, DEVRED Arnaud, YU Wu, JINGGANG Qin, PRADHAN Subrata, SUMPTION Michael, TOMSIC Michael, RINDFLEISCH Matt, HAUGAN Timothy, HOSSAIN Shahrir, NIJHUIS Arend
1 University of Twente, Netherlands, 2 ITER Organization, France, 3 Institute of Plasma Physics, China, 4 Institute for Plasma Research, India, 5 Ohio State University, United States, 6 Hyper Tech Research, United States, 7 US Air Force Research Laboratory, United States, 8 University of Wollongong, Australia

Syudy on HTS Coil for Hybrid Central Solenoid of Fusion Device
ZHENG Jinxing, SONG Yuntao, LIU Xufeng, HUANG Xiongyi, KANG Rui
1 Chinese Academy of Sciences, China
Numerical and experimental investigations on optimizing the compounding technology for insulation of the superconducting coil PF1 carried out on numerical models and working mock-ups
SENIIK Kostantin1, GRIGORIEV Sergey1, RODIN Igor2, BURSIKOV Andrey1, PISHCHUGIN Alexey2, BARANOVA Elena2, TANCHUK Victor1
1Efremov Institute (NIIIEFA), Russia, 2“Sredne-Nevskiy Shipyard” (JSC), Russia

High Temperature Superconducting Coils (HTS) in a Compact Spherical Tokamak- Status and Progress
MELHEM Ziad1, BALL Steven1, BRZAKALIK Robin1, CHAPPELL Steve1, FANTHOME John2, GRYAZNEVICH Mikhail2, HAWKSWORTH David3, JEDAMZIK Dieter1, JOKINEN Antti2, KINGHAM David2, SYKES Alan2, TWIN Andrew1
1Oxford Instruments, United Kingdom, 2Tokamak Energy, United Kingdom, 3Tojkamak Energy, United Kingdom

Design of terminations for ITER magnet busbars
BEEMSTERBOER Cornelis1, ILYIN Yuri1, GUNG Chen-Yu1, FAREK Jaromir1, CHEN Yonghua1, SU Man1, CLAYTON Nicholas1, DEVRED Arnaud1, WEN Xinjie2, LU Kun2
1ITER Organization, France, 2Institute of Plasma Physics, CAS, China

Magnetic Determination of the Current Center Line for the Superconducting ITER Toroidal Field Coils: Results on a Double Pancake Prototype
GABARD Alexander1, LERCH Philippe1, FELDER Roland1, SANFILIPPO Stéphane1, Sidorov Serguei1
1Paul Scherrer Institut PSI, Switzerland

Design of a 50 GJ Twin Solenoid Detector Magnet for the Future Circular Collider
MENTINK Matthias1, DUDAREV Alexey1, PAIS DA SILVA Helder1, TEN KATE Herman1
1CERN, Switzerland

Structural Design and Stress Analysis of the CFETR CS Model Coil
HAN Peng1, WU Yu1, XU Hua1, HAN Xiang1
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Towards fabrication and test of HTS inserts at 4 K in high magnetic field resistive magnets within the french Nougat project
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Performance Test of Cryogen-Free Bi-2223 HTS Dipole Magnet for Beam Line Switching
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Flux pumping method for magnetization of YBCO coils
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Protection design for a 10 T HTS insert
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Design and experimental demonstration of an YBCO toroidal magnet
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Design of a Superconducting Magnet for Lorentz Force Electrical Impedance Tomography (LFEIT)
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Design of a rectangular superconducting magnet system based on optimization techniques
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A compact large-aperture HTS magnet for neutron scattering.
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Operating HTS coils in persistent mode
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Novel Quench Modeling of Spirally Wound HTS Pancake Coils with and without Insulation
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An option of HTS for CFETR TF conceptual design
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Discharge Characteristics and Control Strategy Optimization of Multi-module HTS Pulsed Power Supply
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A 4T HTS Magnetic Field Generator, Conduction Cooled, for Condensed Matter Studies by Neutron Scattering
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2G HTS insert coil and its quench protection
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Energizing a 2G HTS coil in Persistent Current Mode by a Flux Pump
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Developments of HTS levitation coil with conduction cooling by using heat pipes
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Critical current and current feeding test of a 200-meter high temperature superconducting dc power cable system
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The Basic Dielectric Characteristics of Insulating Materials for HTS DC Cable System
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Quench propagation in helium gas cooled MgB2 cables
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Temperature and Pressure Simulation of a 1.5km HTS Power Cable Cooled by Sub-cooled LN2 with Fault Current.
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Study on suitable cable structure of HTS tri-axial cable with counter cooling for long-distance power transmission
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R&D of 10 kA class MgB2 cable of small Ic degradation in manufacturing process
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Cooling system design and operating method of superconducting cables for railway systems
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Effect of Turbulent Flow on Pressure Drop and Heat Transfer Rate Behavior in Internally Cooled High Temperature Superconducting (HTS) Cables with Different Corrugation Geometries
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Comparison of AC-losses of superconducting power cables based on YBCO- and BSCCO-material measured in a setup with serial connection of the tapes
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Pressure drop and heat transfer analysis of HTS cables with multi-phase flow of liquid nitrogen using computational fluid dynamics (CFD)
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Influence of Critical Pressures on Mechanical Behavior of High Temperature Superconducting (HTS) cables
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Design of HTS axial generator for wind power application
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1 MW HTS 2G Generator for Wind Turbines
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Comparative Study on Electrical Design of 10 MW HTS Wind Turbine Generators
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Novel Electro-Mechanical Homopolar Energy Converter and Counter Rotating Motor Testing
SERCOMBE David\textsuperscript{1}, MATSEKH Arkadiy\textsuperscript{1}, KELLS John\textsuperscript{1}, FUGER Rene\textsuperscript{1}, GUINA Ante\textsuperscript{1}, CHU Grace\textsuperscript{1}, FABIAN Cesimiro\textsuperscript{1}, LABES Kurt\textsuperscript{1}, LISSINGTON Tony\textsuperscript{1}
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Superconducting DC Homopolar Motor with Liquid Metal Sliding Contact: Stationary Testing and Dynamic Behaviour
MATSEKH Arkadiy\textsuperscript{1}, KELLS John\textsuperscript{1}, FABIAN Cesimiro\textsuperscript{1}, GUINA Ante\textsuperscript{1}, LISSINGTON Tony\textsuperscript{1}, FUGER Rene\textsuperscript{1}, SERCOMBE David\textsuperscript{1}, CHU Grace\textsuperscript{1}, LABES Kurt\textsuperscript{1}
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Analysis and Comparison of Flux-Concentrating HTS Permanent Magnet Vernier Machines for Wind Power Generation
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Design of 10MW superconductor wind turbine generator to improve power density using analytical method
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Impact of Conductor Performance on the Design of HTS Wind Generators
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Cyclone Initiative: A 2 Year Plan for Real World Applications of Superconductors
PEREZ Nayam\textsuperscript{1}, GRANT Motthershaw\textsuperscript{1}, PAEZ Maria Violeta\textsuperscript{1}, ZAMORA, Aaron\textsuperscript{1}, NWACHUKWU Ike\textsuperscript{1}, MASSON Philippe\textsuperscript{1}
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Temperature dependence of the film cooling time deduced from the time of nucleation of a dissipative zone in a superconducting YBa2Cu3O7 Filament

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Electrical percolation in MgB2-La0.7Sr0.3MnO3 composites: evidence for a superconducting long-range proximity effect in the half-metallic manganite

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Oxygen Isotope Effects on Lattice Properties of La_{2-x}Ba_{x}CuO_{4} (x = 1/8)

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Effect of Terbium Substitution on Structure, Ru valence, and Magnetic Properties of RuSr2(Eu1.2Ce0.8)Cu2O10-δ

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Influence of n-value and rise rate on the Magnetic Field Penetration in HTS Bulks

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Superconductivity in Iridium based compounds CaIr2 and SrIr2

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Trapped magnetic-field property and microstructure of highly dense MgB2 bulk doped with Ti

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Flux jumps in pulse magnetized HTS annuli
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Influence of soft ferromagnetic materials on the magnetic flux density above large grain, bulk high temperature (RE)BCO superconductors: measurements and modelling
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Selective magnetic field invasion into HTS bulk magnets in pulse field magnetizing processes
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Overcoming the adverse effects of granularity on the critical current density in iron-based superconductors
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Superconducting and hybrid systems for magnetic field mitigation
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Trapped field in bulk MgB2 superconductor fabricated by Spark Plasma Sintering
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Demagnetization Delusion: Mixed State Shape Effect and its Peculiar Features
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Explanation of the magnetic stiffness performance of Multi-Seeded YBCO with graded changing of PM pole direction

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Superconductivity in In doped topological crystalline insulator SnTe

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Interfacial intrinsic exchange field in a conventional BCS superconductor

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Study of Sn addition on the intergranular critical current density in polycrystalline Sm1111 iron-pnictides

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Improvement of transport critical current density in SmFeAsO1-xFx tapes by ex-situ powder-in-tube method

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Hydrostatic pressure: A very effective approach to significantly enhance critical current density by orders of magnitude in iron pnictide superconducting tapes, granular bulks and single crystals

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Influence of the crystal growth regime on the properties of CuxTaS2 single crystals.

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Fabrication of Large and High-Performance FeSe Bulk Superconductors by a Simple Liquid–Solid Diffusion Method

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High Critical Current Density in FeSe0.5Te0.5 Thin Films on CaF2 Substrate
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Exploring the critical aspects in the fabrication of superconducting Ba0.6K0.4Fe2As2 ex-situ P.I.T. tapes
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Thermodynamic stability of Co-doped BaFe2As2/SrTiO3 heterostructures
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SmFeAsO1-xFx and NdFeAsO1-xFx Thin Films by a Two-Step Method: Metalorganic Chemical Vapor Deposition and Arsenic Diffusion Processes
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Critical current density and vortex dynamics in Fe(Te,Se) annealed in various atmosphere
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Influence of substrate type on transport properties of superconducting FeSe0.5Te0.5 thin films
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Effect of in-plane strain on the phase diagram of Ru-substituted BaFe2As2 epitaxial thin films
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Hall effect and magnetoresistance in superconducting FeSe thin films
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Fabrication and characterization of the trilayers system Fe(Se,Te)/Fe/Fe(Se,Te) on Fe-buffered MgO and MgAl2O4 by pulsed laser deposition
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Ultrathin NbN Films on Flexible and Thickness Controllable Substrates
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CARRIER LOCALIZATION, ANDERSON TRANSITIONS AND STRIPE FORMATION IN HOLE-DOPED CUPRATES
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Influence of poly(vinyl alcohol) on superconducting properties of Hg-1223 HTS
METSKHVARISHVILI Ioseb, DGEBUADZE G., LOBZHANIDZE T., BENDELIANI B., METSKHVARISHVILI M., GABUNIA V.
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Thin films and multilayers of Nb3Sn for high-field RF applications
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Preparation of Bi-2223 thick films on silver substrates by dip-coating method
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Fabrication of (Bi,Pb)2Sr2Ca2Cu3Ox superconducting thin film on LAO substrate by using chemical solution deposition method
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Effect of Pressing on Structural, Mechanical and Superconducting Properties of BSCCO Bulk Materials
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A proximity effect in the HTS/Ferromagnet multilayers as the probing method of symmetry of superconducting order parameter in HTS compounds
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Grows and interfacial properties of sputter-deposited NbN films
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Magnetic and electrical properties of a single weak-link in a Nb film carver with focused ion bean
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Ambient temperature growth of mono- and polycrystalline NbN nanofilms and their surface and composition analysis
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Orientation Engineering for the Growth of c-axis and Non-c-axis Epitaxial Bi2Sr2CaCu2O8+δ Thin Films by MOCVD
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A method to fabricate bi-axially textured MgO buffer layer for HTS coated conductor

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Jc enhancement by LAO doping in YBCO films both in self-field and magnetic field

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Aging of Precursor Solutions Used For YBCO Films Chemical Solution Deposition: Study of Mechanisms and Effects on Film Properties

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Study on The Field Properties and Pinning mechanism of YBCO Superconducting Film with Nb Doping

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Development of low fluorine solution for YBCO film growth

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SrTiO3 buffer layer grown at low temperature on reinforced cube-textured Cu-based substrate by PLD for YBCO Coated Conductor

XURIGUERA Elena1, PADILLA Jose2, RODRIGUEZ Laura2, VANNOZZI Angelo3, RUFOLONI Alessandro3, CELENTANO Giuseppe3
1La Farga Lacambra SAU, Spain, 2Universitat de Barcelona, Spain, 3ENEA, Italy

Superconducting Dy1-xGdxBa2Cu3O7-d thin films made by Chemical Solution Deposition

OPATA Yuri1, WULFF Anders1, ZHAO Yue1, HANSEN Jørn1, GRIVEL Jean-Claude1
1Technical University of Denmark, Denmark

Pyrolysis study of thick deposited YBCO precursor layers by ink jet printing

VILLAREJO Bohores1, POP Cornelia1, RICART Susagna1, SORT Jordi1, FARJAS Jordi1, ROURA Pere1, OBRADORS Xavier1, PUIG Teresa1
1Institut de Ciència de Materials de Barcelona, Spain, 2Institució Catalana de Recerca i Estudis Avançats, Spain, 3GRMT, University of Girona, Spain
Ultra-high speed pulsed laser deposition of YBCO layer in processing of long HTS coated conductors
RUTT Alexander¹, SCHNEIDER Thomas¹, KIRCHHOFF Lutz¹, HOFACKER Frank¹, HESSLER Andreas¹, SWISTUNOVA Olga², USOSKIN Alexander³
¹Bruker HTS, Germany, ²Kurchatov's Institute, Russia

Effects of strontium substitution in YBa2Cu4O8 films by the KOH flux method
MIYACHI Yugo¹, FUNAKI Shuhei¹, OKUNISHI Ryota¹, YAMADA Yasuji¹
¹Shimane University, Japan

Process potential of KOH flux method for very low temperature growth of REBa2Cu3O7-δ crystal and film
YAMADA Yasuji¹, FUNAKI Shuhei¹, OKUNISHI Ryota¹, MIYACHI Yugo¹
¹Shimane University, Japan

Thickness dependent properties of YBCO films grown on CLO/GZO-buffered NiW substrates
MALMIVIRTA Mika¹, HUHTINEN Hannu¹, ZHAO Yue², GRIVEL Jean-Claude², PATURI Petrina¹
¹University of Turku, Finland, ²Technical University of Denmark, Denmark

Microstructure and Superconducting Properties of the YBa2Cu3O7-X Films with the co-doping of BaTiO3 and Y2O3 nanoparticles
GU Hongwei¹, DING Fazhu¹, WANG Hongyan¹, QU Fei¹, ZHANG Huiliang², DONG Zebin²
¹Institute of Electrical Engineering, Chinese Academy of Sciences, China, ²University of Chinese Academy of Sciences, China

Enhanced Jc of YBa2Cu3O7-x – Ag superconducting thin films synthesized through Low-fluorine MOD method
LI Chunyan¹, LIU Min¹, SUO Hongli¹
¹Beijing University of Technology, China

Planarization Y2O3 buffer substrate for biaxially textuxted IBAD_MgO films
KO Rock-Kil¹, KIM Gwan-Tae⁵, KANG Boo-Min¹, HA Dong-Woo¹
¹Korea Electrotechology Research Institute, South Korea

1A-M-P-05 Sep 7 - Afternoon (2:00-4:00 PM)
Materials - MgB2 I

Synthesis of MgB2 thin films via solution-based approach
STRAKA Weston¹, CARNES Trever², REY Chris², SCHWARTZ Justin¹
¹NC State University, United States, ²E2P Solutions, United States

The influence of processing conditions on MgB2 superconductor obtained by ex-situ spark plasma sintering technique
BADICA Petre¹, BURDUSEL Mihail⁵, POPA Stelian⁵, ENCULESCU Monica⁵, PASUK Iuliana¹, VASYLKIV Oleg², BORODIANSKA Hanna², ALDICA Gheorghe¹
Addition of Sb2O5 into MgB2 obtained by ex-situ spark plasma sintering technique
BURDUSEL Mihail1, ALDICA Gheorghe2, POPA Stelian2, BADICA Petre2

Enhanced superconducting and mechanical properties of disc and ring shape MgB2 fabricated by an excess Mg method for large scale applications
GECER Sahure1, ERTEKIN Ercan1, KOSA Jonas1, YANMAZ Ekrem2, GENCER Ali1
1Ankara university, Turkey, 2Karadeniz Technical University, Turkey

Working with MgB2 - The formation of hazardous B2H6 during processing of MgB2 powder
KAUFFMANN-WEISS Sandra1, HÄSSLER Wolfgang2, SCHEITER Juliane3, HOLZAPFEL Bernhard1
1Karlsruhe Institute of Technology (KIT), Germany, 2IFW Dresden, Germany

The Effect of Bi2Sr2Ca1Cu2O8+κ addition on superconducting properties of bulk MgB2 obtained by hot-press method
TAYLAN KOPARAN Ezgi1, SAVASKAN Burcu2
1Bulent Ecevit University, Zonguldak, Turkey, 2Karadeniz Technical University, Turkey

Microstructure and magnetic properties of bulk MgB2 samples
WIEDERHOLD Alex1, KOBLYSHKA Michael1, INOUE Kazuo2, MURALIDHAR Miryala2, MURAKAMI Masato2, BERGER Kévin3, DOUINE Bruno3, HAUET Thomas3, NOUDEM Jacques4, HARTMANN Uwe3
1Saarland University, Germany, 2Shibaura Institute of Technology, Japan, 3Université de Lorraine, France, 4CRISMAT-CNRS, France

Electron paramagnetic resonance spectroscopy studies on the defect structure of MgB2 superconductor
BATENI Ali1, ERDEM Emre2, REPP Sergei2, STEFAN Weber2, ACAR Selcuk2, KOKAL Ilkin2, HÄSSLER Wolfgang2, SOMER Mehmet1
1Koc University, Turkey, 2University of Freiburg, Germany, 3Pavezyum Kimya Sanayi, Turkey, 4Institute for Solid State and Materials Research Dresden, Germany

Flux-pinning mechanisms in oxide-containing magnesium diboride thin films
SHATERNIK Volodymyr1, PRIKHNA Tatjana2, SHAPOVALOV Andrii2, EISTERER Michael2, SHATERNIK Anton2, KOVYLAEV Valeri2
1G.V.Kurdyumov Institute for Metal Physics of the National Academy of Sciences of Ukraine, Ukraine, 2Institute for Superhard Materials of the NASU, Ukraine, 3Atominstut, Vienna University of Technology, Austria, 4Institute for Problems in Materials Science, Ukraine
XPS/XRD/AFM Characterization of Mg1-xAlxB2 Superconductor
SALEM Ahmed¹, FAIZ Mohammed¹, ZIQ Khalil¹
¹King Fahd University of Petroleum & Minerals, Saudi Arabia

1A-WT-P-01 Sep 7 - Afternoon (2:00-4:00 PM)
Wires and Tapes - Coated conductor characterization

1 D and 2 D current and remnant current density profiles of BSCCO and YBCO HTS tapes by a 3D Hall probe system
TALLOULI Mohamed¹, SUN Jian¹, WATANABE Hirofumi¹, HAMABE Makoto¹, IVANOV Yuri¹, KAWAHARA Toshio¹, YAMAGUCHI Satarou¹, OTABE Soji Edmund², SHYSHKIN Oleg³, CHARFI-KADDOUR Samia⁴
¹Chubu University, Japan, ²Kyushu Institute of technology, Japan, ³V. N. Karazin Kharkov National University, Ukraine, ⁴El Manar University, Tunisia

Characterization of YBa2Cu3O7−δ Films with Various Porous Structures Grown by Metallorganic Decomposition Route
ZHAO Yue¹, QUREISHY Thomas², MIKHEENKO Pavlo², JEAN-CLAUDE Grivel¹
¹Energy Department, Technical University of Denmark, Denmark, ²Department of Physics, University of Oslo, Norway

Effect of granularity on the local critical current density in YBCO coated conductors
PAHLKE Patrick¹, SIEGER Max¹, CHEKHONIN Paul², SKROTZKI Werner³, LAO Mayraluna³, EISTERER Michael³, MELEDIN Alexander¹, VAN TENDERLOO Gustaaf⁴, HÄNISCH Jens⁴, HÜHNE Ruben¹
¹IFW Dresden, Germany, ²Technische Universität Dresden, Germany, ³Vienna University of Technology, Austria, ⁴University of Antwerp, Belgium, ⁵Karlsruhe Institute of Technology (KIT), Germany

Thickness Effect on Texture and Superconducting Performance in REBaCuO Coated Conductors
CAI Chuanbing¹, LU Qi², BAI Chuanyi², GUO Yanqun²
¹Shanghai Key Laboratory for High Temperature Superconductors, Shanghai University, China, ²Shanghai University, China

Magneto-optical investigation of the critical state in coated conductors: peculiarities of the magnetic field distribution and the determination of the critical current density
OSIPOV Maxim¹, PRIMENKO Alexey², RUDNEV Igor¹
¹National Research Nuclear University MEPhI, Russia, ²Bauman Moscow State Technical University, Russia

Microstructural study of YBCO coated conductors
PUICHAUD Anne-Hélène¹, KNIBBE Ruth¹, YAZDI Sadeghi², KASAMA Takeshi³, WIMBUSH Stuart¹, TALANTSEV Evgeny¹, STRICKLAND Nick¹
¹Victoria University of Wellington, New Zealand, ²Technical University of Denmark, Denmark
Structural study of commercially produced (RE)BCO films

MIŠÍK Jozef¹, GÖMÖRY Fedor², VÁVRA Ivo², SKARBA Michal¹, PEKAŘÍKOVÁ Marcela¹, MICHALCOVÁ Eva¹, JANOVEC Jozefº
¹Slovak University of Technology, Slovakia, ²Slovak Academy of Sciences, Slovakia

Investigation of microstructure and pinning characteristics in MBa2Cu3O7-x (M=Y and/or Gd) coated conductors at the level of manufacturing grade

JIN Hye-Jin¹, JO William¹, KIM Kunsu², KIM Miyung², KO Rock-Kil³, JO Young-Sik³, HA Dong-Woo³
¹Ewha Womans University, South Korea, ²Seoul National University, South Korea, ³Korea Electrotechnology Research Institute, South Korea

1A-WT-P-02 Sep 7 - Afternoon (2:00-4:00 PM)
Wires and Tapes - New characterization techniques

First measurement of critical current versus strain of MgB2 strands using a traditional traction machine

STATERA Marco¹, CLIULLO Giuseppe²
¹Ferrara Univ. and INFN, Italy, ²Ferrara University, Italy

Study of the behaviour of 2G tapes under thermal cycles for design of SFCL

ÁLVAREZ Alfredo¹, SUÁREZ Pilar¹, CEBALLOS José María¹, PÉREZ Belén¹, GUERRA Antonio¹
¹University of Extremadura, Spain

1A-WT-P-03 Sep 7 - Afternoon (2:00-4:00 PM)
Wires and Tapes - MgB2 wires

Critical current density and pinning force at SiC doped MgB2 wires after HIP

MORAWSKI Andrzej¹, ZALESKI Andrzej⁰, CETNER Tomasz¹, RINDFLEISCH Matt¹, TOMSKI Michael¹
¹Institute of High Pressure Physics PAS, Poland, ²Institute of Low Temperature and Structure Research Polish Academy of Sciences, Poland, ³Hyper Tech Research, Inc, United States

Superconductivity and microstructure of Cu additional MgB2 multifilamentary wires using different kinds of boron-11 isotope powders

HISHINUMA Yoshimitsu¹, KIKUCHI Akihiro², SHIMADA Yusuke³, HATA Satoshi⁴, YAMADA Shuich²
¹National Institute for Fusion Science, Japan, ²National Institute for Materials Science, Japan, ³The Ultramicroscopy Research Center, Kyushu University, Japan, ⁴Kyushu University, Japan, ⁵Naional Institute for Fusion Science, Japan

Effect of platinum group metal doping in MgB2 wires

GRIVEL Jean-Claude¹, ALEXIOU Aikaterini¹, NAMAZKAR Shahla², PITILLAS Andrea³
¹Technical University of Denmark, Denmark, ²University of Skövde, Sweden, ³Universidad Autonoma de Barcelona, Spain
High Jc MgB2 superconducting wires fabricated by using B powder treated with coronene (C24H12)
YE Shujun1, SONG Minghui2, TAKIGAWA Hiroyuki2, MATSUMOTO Akiyoshi2, KUMAKURA Hiroaki2
1National Institute for Materials Science, Japan

Superconducting Properties and Structures of MgB2 Wires Prepared by Bidirectional Magnesium Diffusion Process
OHUCHI Hiroshi1, YAMADA Yutaka1, MATSUMOTO Akiyoshi2, HIROAKI Kumakura2
1Tokai University, Japan, 2NIMS, Japan

Magnesium diboride conductor for space applications
NARDELLI Davide1, MUSENICH Riccardo2, BRISIGOTTI Silvia1, CUBEDA Valeria1, PIETRANERA Davide1, TROPEANO Matteo1, TUMINO Andrea1, VALESI Giovanni1, VALLE Riccardo1, GRASSO Giovanni1
1Columbus Superconductors, Italy, 2INFN, Italy

Extrinsic properties of MgB2 prepared by internal magnesium diffusion
KULICH Miloslav1, KOVÁČ Pavol1, ROSOVÁ Alica1, BRUNNER Boris1
1Slovak Academy of Sciences, Slovakia

Novel superconducting MgB2 wires made by continuous process
AYRANCI Isil1, KUTUKCU Mehmet2, BASKYS Algirdas1, ATAMERT Serdar2, GLOWACKI Bartek1
1University of Cambridge, United Kingdom, 2Epoch Wires Ltd., United Kingdom

Development of a multifilamentary MgB2 superconducting wire with simultaneous addition of VB2 and SiC
DA SILVA Lucas1, ANTUNES Luiz1, MANESCO Antônio1, VIANNA Alan1, RODRIGUES JR Durval1
1Universidade de São Paulo, Brazil

1A-WT-P-04 Sep 7 - Afternoon (2:00-4:00 PM)
Wires and Tapes - Flux pinning and critical current

Development and Investigation of Properties of Short-Circuited Coils from HTSC tape of SCS4050-i-AP 2G HTS type
BISHAEV Andrey1, BUSH Aleksandr1, GAVRIKOV Mikhail2, KAMENTSEV Konstantin1, KOZINTSEVA Marina1, SAVELEV Vyacheslav2, DRANNIKOV Aleksey1, KUZNETSOV Andrey1, SERDYUKOVA Ekaterina1
1Moscow State Technical University of Radioengineering, Electronics and Automation, Russia, 2Keldysh Institute of Applied Mathematics RAS, Russia

Possible reasons of asymmetrical anisotropy of critical currents of 2G HTS tape in external magnetic field.
SOTNIKOV Dmitry1, VYSOTSKY Vitaly1, FETISOV Sergey1
1Russian Scientific R&D Cable Institute, Russia
Measurements and Simulations of Jc Magnetic Field Dependence in 2G Wires and Coils
MARTINS Flavio¹, SASS Felipe², BARUSCO Pedro², FERREIRA Antonio Carlos³, DE ANDRADE JUNIOR Rubens¹
¹Universidade Federal do Rio de Janeiro, Brasil

Critical current and flux pinning characteristics in Sr0.6K0.4Fe2As2 superconducting tapes
NI Baorong¹, LI Haojie², ZHANG Xianping³, MA Yanwei³
¹Fukuoka Institute of Technology, Japan, ²Nanjing University of Science and Technology, China, ³Chinese academy of Sciences, China

Sub-MeV ion irradiation in YBa2Cu3O7 thin films: a practical route for a flux-pinning optimization
MATSUI Hiroaki¹, OOTSUKA Teruhisa¹, OGISO Hisato¹, YAMASAKI Hirofumi¹, SOHMA Mitsugu¹, YAMAGUCHI Iwao², KUMAGAI Toshiya¹, MANABE Takaaki¹
¹National Institute of Advanced Industrial Science, Japan

Enhancement of Jc properties in magnetic fields of BZO doped REBCO coated conductors by a newly modified TFA-MOD process
YUJI Takagi¹, KOICHI Nakoka¹, KAZUNARI Kimura¹, TERUO Izumi¹, YUH Shiohara¹
¹Industrial Superconductivity Technology Research Association, Japan

Pinning centres in ISD-MgO coated conductors
STAFFORD Benjamin¹, HÄNISCH Jens², HÜHNE Ruben³, GROŒE Veit¹, BAUER Markus¹, PRUSSEIT Werner¹, HOLZAPFEL Bernhard³, SCHULTZ Ludwig⁴
¹THEVA Dünnschichttechnik GmbH, Germany, ²Karlsruhe Institute of Technology (KIT), Germany, ³IFW Dresden, Germany, ⁴Institute for Metallic Materials (IMW), Germany

Relationships of superconducting and structure characteristics of cold-rolled and annealed niobium-titanium foil with high anisotropic pinning
GURYEV Valentin¹, SHAVKIN Sergey¹, KRUGLOV Vitaly¹, VOKLOV Pavel¹, VASILIEV Alexander¹, OVCHAROV Alexey¹, ZUBAVICHUS Yan¹, SVETOGOROV Roman¹, PASHSEV Elhan¹, LIKHACHEV Igor¹
¹NRC “Kurchatov Institute”, Russia

The superconducting properties and microstructure of filamentary (Sm,Gd,Dy)-Ba-Cu-O with different Sm/Gd/Dy ratio prepared by a solution spinning method
IKEBE Yumiko¹, BAN Eriko¹
¹Meijo University, Japan

Transport measurements on Bi2Sr2Ca2Cu3O10 multifilament conductors
GRÜN Andreas¹, KOBLISCHKA Michael¹, HARTMANN Uwe¹
¹Saarland University, Germany
The post-annealing process to improve flux pinning properties of GdBa2Cu3O7-δ films by pulsed laser deposition
WONJAE Oh¹, EUN KYUNG Yang¹, JAEEUN Kim¹, SANG-IM Yoo¹
¹Seoul National University, South Korea

Microstructure analysis of GdBCO coated conductors with improved flux pinning
YANG Eun Kyung¹, OH Wonjae¹, LEE Jae-Hun², LEE Hunju², MOON Seung-Hyun³, YOO Sang-Im¹
¹Seoul National University, South Korea, ²SuNAM Co., Ltd., South Korea

1A-WT-P-05 Sep 7 - Afternoon (2:00-4:00 PM)
Wires and Tapes - Cable development

Development of joints for 45 kA at 10T/4K class six-around-one CORC based Cable-in-Conduit Conductors
MULDER Tim¹, DUDAREV Alexey², MENTINK Matthijs², DHALLÉ Marc³, TEN KATE Herman⁴
¹CERN and University of Twente, Switzerland, ²CERN, Switzerland, ³University of Twente, Netherlands

USE OF LASER LITHOGRAPHY TO STRIATE 2G TAPES FOR LOW AC LOSS APPLICATIONS
OSOFSKY Michael¹, PRESTIGIACOMO Josephi, AUYEUNG Raymond, CHARIPAR Kristin¹, CLAASSEN John², PIQUÉ Alberto¹, RUPICH Martin³, KVITKOVIC Josef⁴, HATWAR Rajeev⁴, PAMIDI Sastry⁴
¹Naval Research Laboratory, United States, ²NOVA Research, Inc., United States, ³AMSC, Inc., United States, ⁴Center for Advanced Power Systems, Florida State University, United States

New progress of Nb3Sn strand production for ITER in WST
LI Jianfeng¹, ZHANG Ke¹, LIU Jianwei¹, SHI Yigong¹, DU Shejun¹, LIU Xanghong¹, FENG Yong¹, ZHANG Pingxiang², LIU Sheng³
¹Western Superconducting Technologies Co., Ltd., China, ²Northwest Institute for Nonferrous Metal Research, China, ³China International Nuclear Fusion Energy Program, China

Magnetization loss of Roebel coated conductor cable with up to 20 filaments for AC applications
KARIO Anna¹, VOJENCIK Michal², KLING Andrea³, NAST Rainer³, GODFRIN Aurélien¹, DEMENCIK Eduard¹, RINGSDORF Bernd¹, GRILLI Francesco¹, GOLDAKER Wilfried¹
¹Institute for Technical Physics, Karlsruhe Institute of Technology, Germany, ²Institute of Electrical Engineering, SAS, Slovakia

On Roebel Cable Geometry for Accelerator Magnet
FLEITER Jerome³, LORIN Clement², BALLARINO Amalia³
³CERN, Switzerland, ²CEA Saclay, France
Results of R&D and production on two type of High purity Aluminum stabilized Superconducting Cable
KATAYAMA Kota¹, KITAZATO Keisuke¹, TSUBOUCHI Hirokazu¹, TAKAGI Akira¹, TANAKA Ricardo², SHIGUEOKA Joao², BUEHLER Marc³, KASHIKHIN Vadim³, LAMM Michael³, LOMBARDO Vito³, PAGE Thomas³
¹FURUKAWA ELECTRIC CO., LTD., Japan, ²FURUKAWA INDUSTRIAL S.A. in Brazil, Brazil, ³Fermi National Accelerator Laboratory, United States

Cabling Technology of Nb3Sn Conductor for CFETR Central Solenoid Model Coil
QIN Jinggang¹
¹Institute of Plasma Physics, CAS, China

Progress towards current densities of 500 A/mm² at 20 T in HTS Conductor on Round Core (CORC) cables
VAN DER LAAN Danko¹, BROMBERG Leslie², MICHAEL Phil², NOYES Patrick³, GODEKE Arno³, TROCIEWITZ Ulf³, WEIJERS Huub³
¹Advanced Conductor Technologies & University of Colorado, United States, ²Massachusetts Institute of Technology, United States, ³NHMFL, Florida State University, United States

The Manufacture and Properties of the Nb3Sn Strand by Bronze Route
ZHANG Ke¹, ZHANG Pingxiang¹, GUO Jianhua², JIA Jingjing², LIU Jianwei², LI Jianfeng², LIU Xianghong², FENG Yong²
¹Northwestern Polytechnical University, China, ²Western Superconducting Technologies Co. Ltd., China
Growth and properties of amorphous MoSi superconductor for single photon detectors
BOSWORTH David¹, HADFIELD Robert², BARBER Zoe¹
¹University of Cambridge, United Kingdom, ²University of Glasgow, United Kingdom

SNSPD with ultralow dark count rate (< 0.0001 cps)
HIROYUKI Shibata¹, KAORU Shimizu², HIROKI Takesue², TOKURA Yasuhiro²
¹Kitami Institute of Technology, Japan, ²NTT Basic Research Laboratories, Japan

Investigation of CeO2 Buffer Layer Effects on the Responsivity of YBCO Transition Edge Bolometer
MOHAJERI Roya¹, NAZIFI Rana¹, ESMAEILI Mohaddeseh¹, HOSSEINI Mehdi³, VESAGHI Mohammad Ali³, FARDMANESH Mehdi¹
¹Sharif University of Technology, SERL, Iran, ²University of Technology, Iran, ³Sharif University of Technology, Iran

Novel Technique for Obtaining Ultrathin MgB2 HEB Mixer Devices Without Tc degradation
CUNNANE Daniel¹, WOLAK Matthaeus², ACHARYA Narendra², KAWAMURA Jonathan¹, XI Xiaoxing², KARASIK Boris¹
¹Jet Propulsion Laboratory, United States, ²Temple University, United States

Current crowding effects in nanostructured superconductors
ADAMI Obaïd¹, CERBU Dorin², CABOSART Damien³, MOTTA Maycon⁴, ORTIZ Wilson Aires⁴, MOSCHHALKOV Victor², HACKENS Benoit², DELAMARE Romain⁵, VAN DE VONDEL Joris², SILHANEK Alejandro¹
¹Université de Liège, Belgium, ²INPAC–Institute for Nanoscale Physics and Chemistry, Belgium, ³NAPS/IMCN, Université catholique de Louvain, Belgium, ⁴Departamento de Física, Universidade Federal de São Carlos, Brazil, ⁵ICTEAM, Université catholique de Louvain, Belgium

Non-uniform RF power absorption in superconducting constrictions: application to YBaCuO HEB hot spot model with THz frequency-dependent performance
LADRET Romain¹, DEGARDIN Annick², KREISLER Alain²
¹Centrale Supélec, France, ²UPMC Univ. Paris 06, France

Measuring the local sensitivity of a superconducting nanowire using a scanning current injector
DRIESSEN Eduard¹, KLPWJ/K Teunis², COUMOU Pieter-Jan², CHAPELIER Claude¹
¹INAC-SPSMS, CEA and Univ. Grenoble-Alpes, France, ²Kavli Institute of Nanoscience, Delft Univ of Technology, Netherlands
High Efficiency Superconducting Nanowire Single Photon Detector at 940 nm in Quantum Information

CHEN Yajun1, GU Min1, ZHANG Labao1, KANG Lin1, WU Peiheng1
1Nanjing University, China

Vortex assisted mechanism of photon counting in the superconducting nanowire single photon detector revealed by external magnetic field

VODOLAZOV Denis1, KORNEEEVA Yuliya2, SEMENOV Alexander2, KORNEEV Alexander2, GOLTSMAN Gregory2
1Institute for Physics of Microstructures (IPM RAS), Russia, 2Moscow State Pedagogical University, Russia, 3Moscow Institute of Physics and Technology, Russia

Dynamics of quantum dot - superconductor hybrids

VAN ZANTEN David1, BASKO Denis2, COURTOIS Hervé1, WINKELMANN Clemens1
1Institut Néel, France, 2Laboratoire de Physique et Modélisation des Milieux Condensés, France

Transmission Spectroscopy Measurement of a circuit QED System using a Superconducting 3D Transmon Qubit

DONG-GWANG Ha1, HYUN-GUE Hong1, YONUK Chong1
1Korea Research Institute of Standards and Science, South Korea

Coupled macroscopic quantum tunneling in intrinsic Josephson junction of BSCCO

NOMURA Yoshiki1, KAMBARA Hitoshi1, NAKAGAWA Yuya1, KAKEYA Itshiro1
1Kyoto University, Japan

Coherent quantum phase-slips in NbN superconducting nanowires: dc transport and microwave irradiation experiments

FENTON Jonathan1, BURNETT Jonathan1
1University College London, United Kingdom

The Tunneling Atom Laser: switching from microwave loss to gain using disordered material states

ROSEN Yaniv1, KHALIL Moe2, BURIN Alex2, OSBORN Kevin3
1Laboratory for Physical Sciences, University of Maryland, United States, 2Department of Chemistry, Tulane University, United States, 3Laboratory for Physical Sciences & JQI, University, United States

Microwave Quantum Optics in Superconducting Circuits

TREJO PIZZO David1
1Universidad de Palermo, Argentina

2A-E-P-02 Sep 8 - Afternoon (2:00-4:00 PM)
Electronics - SQUIDs & SQIFs II

Fabrication of small biaxial high-Tc gradiometric SQUID

ADACHI Seiji1, TSUKAMOTO Akira1, MOON Yusik1, OSHIKUBO Yasuo1, TANABE Keiichi1
1ISTEC, Japan
Noise-reduction in wire-wound SQUID gradiometers used in pulsed-field magnetic resonance
MAGNELIND Per1, MATLASHOV Andrei1, VOLEGOV Petr2, ESPY Michelle1
1Los Alamos National Laboratory, United States

Development of Magnetic Prospecting System using HTS SQUID Gradiometer with Baseline of 20 mm
TSUKAMOTO Akira1, HATO Tsunehiro1, ADACHI Seiji1, MOTOORI Masayuki1, SUGISAKI Masaki1, TANABE Keiichi1
1SRL-ISTEC, Japan, 2JOGMEC, Japan

Atomically smooth YBa2Cu3O7-x films for multilayer high-Tc superconducting devices
CHUKHARKIN Maxim1, ALEXEI Kalaboukhov1, XIE Minshu1, JUSTIN Schneiderman1, DAG Winkler1
1Chalmers University of Technology, Sweden, 2MedTech West, Sweden

Integrated Navigation Technology in Airborne Superconducting Full Tensor Gradient Measurement System
WU Jun1, KONG Xiangyan1, RONG Liangliang1, QIU Longqing1, XIE Xiaoming1
1Chinese Academy of Sciences, China

Development of a superconducting accelerometer based on superconducting test mass and SQUID
KIM In-Seon1, CHOI Jae-Hyuk1, CHOI In-Mook1
1Korea Research Institute of Standards and Science, South Korea

The fabrication and characterization of 2D Nb and 3D NbN nanoSQUIDs
CHEN Lei1, LIU Xixi1, LIU Xiaoyu1, WANG Hao2, WANG Zhen1
1SIMIT CAS, China, 2ShanghaiTech University, China

Fabrication of low-noise SQUID axial gradiometers by optimization of inductance matching
YONG-HO Lee1, KWON-KYU Yu1, JIN-MOK Kim1, SANG-KIL Lee1, HYUKCHAN Kwon1, KIWOONG Kim1
1Korea Research Institute of Standards and Science, South Korea

Single sensor HTS SQUID magnetic tensor gradiometer
SHANE Keenan1, LESLIE Keith1, CLARK Dave1
1CSIRO, Australia

Research on Intelligent Control System of SQUID Magnetometer Parameters in Multi-channel System
CHEN Hua1, WANG Yongliang1, YANG Kang1, XU Xiaofeng1, WANG Yi1, KONG Xiangyan1
1Shanghai Institute of Microsystem & Information Technology, China

The fabrication of 3D NbN nano-SQUIDs
WANG Hao1, LIU Xiaoyu2, CHEN Lei2, WANG Zhen2
1ShanghaiTech University, China, 2SIMIT, China
Low crosstalk in multi-channel system with weakly damped SQUID gradiometer
YANG Kang¹, QIU Yang¹, KONG Xiangyan¹, ZHANG Shulin¹, WANG Yongliang¹
¹Shanghai Institute of Microsystem & Information Technology, China

Integrated dc SQUID based on epitaxial grown NbN/AIN/NbN Josephson junctions
LIU Quansheng¹, WANG Huiwu¹, PENG Wei¹, WANG Zhen¹
¹Shanghai Institute of Microsystem & Information Technology, China

Unshielded MCG measurement using a full tensor compensation technique under urban hospital environment
LI Hua¹, ZHANG Shulin¹, ZHANG Chaoxiang¹, KONG Xiangyan¹, XIE Xiaoming¹
¹Shanghai Institute of Microsystem & Information Technology, China

Integrated NbN Circuits for a Superconducting Computer
VILLEGIER Jean-Claude¹
¹CEA-Grenoble INAC, France

Compact voltage standard based on high Tc Josephson junctions
KHORSHEV Sergey¹, PASHKOVSKY Alexander², ROGOZHKINA Nina¹, PESTOV Evgeni², LEVICHEV Maxim², KATKOV Alexander³, KLUSHIN Alexander³
¹Institute of Electronic Measurements (IEM) KVARZ, Russia, ²Institute for Physics of Microstructures (IPM RAS), Russia, ³D.I.Mendeleyev Institute for Metrology (VNIIM), Russia

Effects of Readout Cell Configuration and Parameters on the Stability and Functional Frequency Limits of RSFQ TFF
JABBARI Tahereh¹, ZANDI Hesam¹, FOROUGHI Farshad², BOZBEY Ali³, FARDMANESH Mehdi³
¹School of Electrical Engineering, Sharif University of Technology, Iran, ²Quantum Technology Group, 2nd Institute of Physics, Germany, ³Department of Electrical and Electronics Engineering, Turkey

Cryogen-free operation of AC quantum voltage standards
SOSSO Andrea¹, DURANDETTO Paolo¹, TRINCHERA Bruno¹, FRETT Matteo¹, MONTICONE Eugenio¹, LACQUANITI Vincenzo¹
¹INRIM, Italian Institute of Metrological Research, Italy

Deep-Submicron Niobium Stripline Resonators at Microwave Frequency
OATES Daniel¹, TOLPYGO Sergey¹, BOLKHOVSKY Vladimir¹
¹MIT Lincoln Laboratory, United States

Improved design of integrated quantum voltage noise source
MAEZAWA Masaaki¹, YAMADA Takahiro¹, URANO Chiharu¹
¹AIST, Japan
Characterization of the maximum frequency of operation of SFQ digital cells
COLLOT Romain1, FEBVRE Pascal1, KUNERT Juergen2, STOLZ Ronny2
1Université Savoie Mont-Blanc, France, 2IPHT, Germany

Ten years of quantum annealing processor development at D-Wave.
BUNYK Paul1
1D-Wave Systems, Canada

Low Power digital gates in ERSFQ and reversible nSQUID technology
LUCCI Massimiliano1, REN Jie2, SARWANA Saad2, OTTAVIANI Ivan, CIRILLO Matteo1, BADONI Davide3, SALINA Gaetano6
1University of Rome Tor Vergata, Italy, 2HYPRES, Incorporated, 3INFN, Italy

2A-E-P-04 Sep 8 - Afternoon (2:00-4:00 PM)
Electronics - Microwave and THz devices & systems II

Double-Resonance HTS Coils for Dual-Optimized High-Sensitivity NMR Probes
RAMASWAMY Vijaykumar2, HOOKER Jerris2, EDISON Arthur3, BRY William4
1University of Florida, United States, 2Florida State University, United States

Matching of Active Superconductor Antennas
MUKHANOV Oleg1, KORNEV Victor2, KOLOTINSKIY Nikolay2, WANG Xu5, SUN Liang5, HE Yusheng7
1Hypres, Inc., USA, 2Lomonosov Moscow State University, Russia, 3Institute of Physics, Chinese Academy of Sciences, China

Compact linear phase HTS filter with quasi-elliptic response by cascaded quadruplet structure
BO Zhang1, MENG Wu1, JINGPING Liu1, XU Zhang1, XINJIE Zhao1, LAN Fang1, SHAOLIN Yan1
1Nankai University, China

Design of HTS dual-band bandpass filter using shorted stub-loaded hair-pin resonators with controllable bandwidths and feeding structure
SEKIYA Naoto1
1University of Yamanashi, Japan

Design of high-order HTS dual-band bandpass filter for future mobile communication system
SEKIYA Naoto1
1University of Yamanashi, Japan

Integrated four-pixel narrowband antenna array for picosecond THz spectroscopy
SCHMID Alexander1, RAASCH Juliane1, KUZMIN Artem1, WUENSCH Stefan1, ILIN Konstantin1, MICHAEL Siegel1
1Karlsruhe Institute of Technology (KIT), Germany
High Temperature Superconducting Bow-Tie THz Antenna
HOLDENGREBER Eldad\textsuperscript{1}, MIZRAHI Moshe\textsuperscript{2}, SCHACHAM Shmuel\textsuperscript{1}, FARBER Eli\textsuperscript{1}
\textsuperscript{1}Ariel University, Israel, \textsuperscript{2}Bar-Ilan University, Israel

Power-handling capability of superconducting transmit bandpass filter when increasing the number of bulk resonators
TSURUI Ryota\textsuperscript{1}, ATSUSHI Saito\textsuperscript{1}, KATO Tomoki\textsuperscript{1}, SAITO Taiki\textsuperscript{1}, TESHIMA Hidekazu\textsuperscript{1}, OHSHIMA Shigetoshi\textsuperscript{1}
\textsuperscript{1}Yamagata University, Japan, \textsuperscript{2}Nippon Steel & Sumitomo Metal Corporation, Japan

Development of HTS pickup coils for 700 MHz NMR ~Resonance frequency tuning using a sapphire plate~
KOSHITA Kazuma\textsuperscript{1}, KITAJIMA Keita\textsuperscript{1}, YAMADA Takahiro\textsuperscript{1}, TAKAHASHI Masato\textsuperscript{2}, MAEDA Hideaki\textsuperscript{1}, SAITO Atsushi\textsuperscript{1}, OHSHIMA Shigetoshi\textsuperscript{1}
\textsuperscript{1}Yamagata University, Japan, \textsuperscript{2}RIKEN, Japan

Subgap electron transport in hybrid superconducting devices
BUBANJA Vladimir\textsuperscript{1}
\textsuperscript{1}Callaghan Innovation, New Zealand

Structural and electrical characterization of ultra thin SrTiO3 tunnel barriers grown over YBa2Cu3O7 electrodes for the development of high Tc Josephson Junctions
SIRENA Martin\textsuperscript{1}, FÉLIX AVILES Luis\textsuperscript{1}, GONZALEZ SUTTER Jesus\textsuperscript{1}, HABERKORN Nestor\textsuperscript{1}, STEREN Laura\textsuperscript{2}, VILLEGAS Javier\textsuperscript{1}, BRIATICO Javier\textsuperscript{1}, BERGEAL Nicolas\textsuperscript{4}, ZIMMERS Alexandre\textsuperscript{4}, LÉSUEUR Jerome\textsuperscript{4}
\textsuperscript{1}Instituto Balseiro & CONICET, Argentina, \textsuperscript{2}Laboratorio Tandar & CONICET, Argentina, \textsuperscript{3}Unite Mixte de Physique CNRS/Thales, France, \textsuperscript{4}Laboratoire de Physique et d'Etude des Materiaux (LPEM), France

Deviation from Fraunhofer-Type Modulation of Josephson Current through Niobium Tunnel Junctions by Applying Vertical Magnetic Field
NAKAYAMA Akiyoshi\textsuperscript{1}, ABE Susumu\textsuperscript{1}, WATANABE Norimichi\textsuperscript{1}
\textsuperscript{1}Kanagawa University, Japan

Fabrication of superconducting flux quantum bits and the research of characteristic parameters of Al/AlOx/Al tunnel junctions
LI Yongchao\textsuperscript{1}, XU Weiwei\textsuperscript{1}, SHI Jianxin\textsuperscript{1}, ZHAI Jiquan\textsuperscript{1}, SUN Guozhu\textsuperscript{1}
\textsuperscript{1}Nanjing University, China

The coherent dynamic state of intrinsic josephson junctions
GRIB Alexander\textsuperscript{1}, SEIDEL Paul\textsuperscript{2}
\textsuperscript{1}Kharkiv V. N. Karazin National University, Ukraine, \textsuperscript{2}Friedrich Schiller University of Jena, Germany

Colossal superconducting spin valve effect and ultra-small exchange-splitting in epitaxial rare-earth-niobium trilayers
GU Yuanzhuo\textsuperscript{1}
\textsuperscript{1}University of Cambridge, United Kingdom
Time-resolved analysis of Josephson junctions self heating in cryocooler
SOSSO Andrea¹, DURANDETTA Paolo¹, MONTICONE Eugenio¹, LACQUANITI Vincenzo¹
¹INRIM, Italy

Yield and uniformity test method for Josephson junctions in superconducting circuit fabrication
OLAYA David¹, DRESSELHAUS Paul¹, BENZ Samuel¹
¹National Institute of Standards and Technology, United States

The influence of the FIB sculpting on Josephson junctions’ electrical response
FRETTO Matteo¹, DE LEO Natascia¹, LACQUANITI Vincenzo¹, D’ORTENZI Luca¹, BOARINO Luca¹, ENRICO Emanuele¹
¹INRIM, Italian Institute of Metrological Research, Italy

NbN/AIN/NbN/TiN tunnel junctions on Si (100) substrate for superconducting devices
KAZUMASA Makise¹
¹National Institute of Information and Communications, Japan

Fabrication of stacks of intrinsic Josephson junctions in Bi2Sr2CaCu2O8+δ-delta via photoresist-free X-ray nanolithography
TRUCCATO Marco¹, AGOSTINO Angelo¹, BORFECCHIA Elisa¹, MINO Lorenzo¹, CARA Eleonora¹, PAGLIERO Alessandro¹, PASCALE Lise¹, OPERTI Lorenza¹, ENRICO Emanuele², DE LEO Natascia¹, FRETTO Matteo¹, MARTINEZ-CRIADO Gema¹, LAMBERTI Carlo¹
¹University of Torino, Italy, ²University of Torino and INSTM, Italy, ³European Synchrotron Radiation Facility, France, ⁴University of Torino & Southern Federal University, Italy

Fabrication of NbN/AIN/NbN tunnel junctions on Si substrate with TiN buffer layers
SUN Rui¹, MAKISE Kazumasa², TERAI Hirotaka², ZHEN Wang¹
¹Shanghai Institute of Microsystem & Information Technology, China, ²National Institute of Information and Communications, Japan

Noise characteristics of ion-irradiated Josephson nano-junctions and arrays
SHARAFIEV Aleksei¹, MALNOU Maxime¹, FEUILLET-PALMA Cheryl¹, ULYSSE Christian¹, FEVIRE Pascal¹, LESUEUR Jerome¹, BERGEAL Nicolas¹
¹LPEM ESPCI-ParisTech CNRS, France, ²LPN-CNRS, France, ³LAHC Université de Savoie, France

Novel functionalities of josephson junctions with doped semiconductor interlayers
SHATERNIK Volodymyr¹, SHAPOVALOV Andrii², PRIKHNA Tatyana², SVOBOROV Olexandr³, BELOGOLOVSKII Mikhail³, SCHMIDT Stefan³, SEIDEL Paul¹
¹G.V.Kurdyumov Institute for Metal Physics of the National Academy of Sciences of Ukraine, Ukraine, ²Institute for Superhard Materials of the NASU, Ukraine, ³Institut für Festkörperphysik, FSU Jena, Germany

High normal state resistivity NbN films for microwave and mm-wave applications: fabrication, characterization techniques and first results
CAMMILLERI Davide¹, BÉLIER Benoît², BORDIER Guillaume², GADOT Frédérique², PIAT Michel², TARTARI Andrea²
¹Laboratoire de Physique de Gaz et des Plasmas, France, ²IEF - Université Paris Sud, France, ³Laboratoire APC - Université Paris Diderot, France
High-critical current proximity Josephson junctions
DE CECCO Alessandro¹, WINKELMANN Clemens¹, COURTOIS Hervé¹
¹Institut Néel, Université Grenoble Alpes - CNRS, France

Dissipation Effects of the Phase in Higher Order Switching Events of Intrinsic Josephson Junctions
KAKEHI Daiki¹, TAKAHASHI Yusaku¹, YAMAGUCHI Hikaru¹, KOIZUMI Shin-Ichiro¹, AYUKAWA Shin-Ya¹, KITANO Haruhisa¹
¹Aoyama Gakuin University, Japan

Fabrication and characterization of MgB2/BN/MgB2 trilayers
HU Hui¹, GAN Zhi¹, FENG Qing¹, WANG Yue¹, ZHANG Yan¹
¹School of Physics, Peking University, China

Decay and decoherence due to non-equilibrium quasiparticles
ZANKER Sebastian¹, HEIMES Andreas¹, MARTHALER Michael¹, SCHÖN Gerd¹
¹Karlsruhe Institute of Technology (KIT), Germany

Fabrication and Characterization of YBa2Cu3O7-x step-edge Josephson Junctions
UZUN Yigitcan¹, AVCI Ilbeyi¹
¹Ege University, Faculty of Science, Turkey

2A-LS-P-01 Sep 8 - Afternoon (2:00-4:00 PM)
Large Scale - Superconducting Magnets for medical applications

Manufacture Technology and Performance of Nb3Al Experimental Coil
ZHU Guang¹, WANG Qiuliang¹
¹Institute of Electrical Engineering, Chinese Academy of Sciences, China

Analyses of Field Quality of Dipole Magnets Wound with Coated Conductors for Rotating Gantry for Carbon Cancer Therapy by Using Cross-Sectional Model
AMEMIYA Naoyuki¹, SAKASHITA Masaki¹, SOGABE Yusuke¹, IWATA Yoshiyuki¹, NODA Koji¹, OGITSU Toru¹, ISHIYAMA Yusuke¹, KURUSU Tsutomu¹
¹Kyoto University, Japan, ²National Institute of Radiological Sciences, Japan, ³High Energy Accelerator Research Organization, Japan, ⁴Toshiba Corporation, Japan

High reliability and availability of the Iseult/Inumac MRI magnet facility
BELORGEY Jean¹, DONATI Andre¹, DUBOIS Olivier¹, GUIHARD Quentin¹, LOTODE Ange¹, SINANNA Armand¹, BREDY Philippe¹, LANNOU Herve¹, GUIHO Patrice¹, TOUZERY Robert¹, SCHILD Thierry¹
¹CEA Saclay, France

Mechanical Reinforcement of REBCO Pancake Coil for High-temperature Superconducting Cyclotron
TSUJI Yoshiaki¹, ISHIYAMA Atsushi¹, YAMAKAWA Hiroshi¹, WANG Xudong¹, UEDA Hiroshi¹, WATANABE Tomonori¹, NAGAYA Shigeo¹
Numerical Simulation on Magnetic Field Distribution generated by Screening Current in High Temperature Supercon. Cyclotron
UEDA Hiroshi¹, FUKUDA Mitsuhiro¹, HATAKAZA Kichiji¹, IMAICHI Yohei², ISHIYAMA Atsushi², NOGUCHI So³
¹Osaka University, Japan, ²Waseda University, Japan, ³Hokkaido University, Japan

The Performance and Analysis of a HTS No-Insulation Hybrid Magnet
ZHANG Yi¹, TANG Yuejin¹, DENG Xuzhi¹, WANG Zuoshuai¹, YU Bing¹
¹State Key Lab. Of Advanced Electromagnetic Engineering and Technology, China

An Optimal Configuration Design of MRI/NMR Magnet Taking into Account REBCO Layer
NOGUCHI So¹, UEDA Hiroshi², ISHIYAMA Atsushi³, MIYAZAKI Hiroshi⁴, TOSAKA Taizo⁴, NOMURA Shunjii⁴, KURUSU Tsutomu⁴, URAYAMA Shinichi⁵, FUKUYAMA Hidenao⁵
¹Osaka University, Japan, ²Hokkaido University, Japan, ³Waseda University, Japan, ⁴Toshiba Corporation, Japan, ⁵Kyoto University, Japan

Numerical Analyses on Magnetic Field Generated by Screening Current in REBCO Multiple Pancake Coils for MRI application
UEDA Hiroshi¹, NOGUCHI So², MOCHIKA Ayumu³, WANG Tao⁴, ISHIYAMA Atsushi⁵, MIYAZAKI Hiroshi⁵, TOSAKA Taizo⁵, NOMURA Shunjii⁵, KURUSU Tsutomu⁵, URAYAMA Shinichi⁵, FUKUYAMA Hidenao⁵
¹Osaka University, Japan, ²Hokkaido University, Japan, ³Waseda University, Japan, ⁴Toshiba Corporation, Japan, ⁵Kyoto University, Japan

Evaluation of magnetic field homogeneity for a conduction-cooled REBCO magnet with a room temperature bore of 200 mm
MIYAZAKI Hiroshi⁵, IWAI Sadanori¹, OTANI Yasumi¹, TAKAHASHI Masahiko¹, TOSAKA Taizo¹, TAKAKI Kenji¹, NOMURA Shunjii¹, KURUSU Tsutomu¹, UEDA Hiroshi², NOGUCHI So³, ISHIYAMA Atsushi³, URAYAMA Shinichi³, FUKUYAMA Hidenao⁵
¹Toshiba Corporation, Japan, ²Osaka University, Japan, ³Hokkaido University, Japan, ⁴Waseda University, Japan, ⁵Kyoto University, Japan

Numerical Evaluation on Influence of Screening Current on Field Homogeneity in REBCO coils
UEDA Hiroshi¹, NOGUCHI So², MATSUMI Ayako³, IMAICHI Yohei³, WANG Tao⁴, ISHIYAMA Atsushi⁵, MIYAZAKI Hiroshi⁵, TOSAKA Taizo⁵, NOMURA Shunjii⁵, KURUSU Tsutomu⁵, URAYAMA Shinichi⁵, FUKUYAMA Hidenao⁵
¹Osaka University, Japan, ²Hokkaido University, Japan, ³Waseda University, Japan, ⁴Toshiba Corporation, Japan, ⁵Kyoto University, Japan
Cryogenic Receive-only 7 Tesla Coil for Hyperpolarized 13C MRI
WOSIK Jarek¹, NESTERUK Krzysztof², BOCHHORST Kurt³, I-CHIH Tan⁴, BANKSON James⁵, NARAYANA Ponnada²
¹University of Houston, United States, ²Institute of Physics PAS, Poland, ³The University of Texas, United States

Current sharing properties in parallel conductors composed of REBCO superconducting tapes for MRI
KAWAHARA Fuminori¹, IWAKUMA Masataka¹, SATO Seiki¹, YOSHIDA Koichi¹, TOMIOKA Akira², IZUMI Teruo³
¹Kyushu University, Japan, ²Fuji Electric Co.Ltd., Japan, ³ISTEC, Japan

Relaxation of shielding current in test coils for MRI with REBCO superconducting scribed tapes
IWAKUMA Masataka¹, TSUKIGI Yuhki¹, NABEKURA Kohei¹, SATO Seiki¹, YOSHIDA Kouichi¹, TOMIOKA Akira², KONNO Masayuki², IZUMI Teruo³, MACHI Takato³, IBI Akira³
¹Kyushu University, Japan, ²Fuji Electric Co. Ltd, Japan, ³ISTEC, Japan

Relaxation of shielding current in test coils for MRI with REBCO superconducting non-scribed tapes
TSUKIGI Yuki¹, NABEKURA Kohei¹, IWAKUMA Masataka¹, SATO Seiki¹, YOSHIDA Koichi¹, TOMIOKA Akira², KONNO Masayuki², IZUMI Teruo³, MACHI Takato³, IBI Akira³
¹Kyushu University, Japan, ²Fuji Electric Co. Ltd, Japan, ³ISTEC, Japan

Designing and Optimizing of High Field MRI Magnets Composed of 4 Layer Superconducting Coils Made of MgB2 Wires
INANIR Fedai¹, KUTUKCU Pinar¹, KEYSAN Ozan²
¹Yildiz Technical University, Turkey, ²Middle East Technical University, Turkey

Development of 22 T VSM System using Novel Improvements in HTS Conductor
GOOD Jeremy¹, BRACANOVIC Darko¹
¹Cryogenic Ltd, United Kingdom

Magnetic system of the high field superconducting multipole wiggler for CAMD LSU
KHRUSCHEV Sergey¹, LEV Vladimir², MEZENTSEV Nikolay¹, SHKARUBA Vitaliy¹, SYROVATIN Vasiliy¹, TARASENKO Olga¹, TSUKANOV Valeriy¹, VOLKOV Askold¹, ZORIN Artem¹
¹Budker Institute of Nuclear Physics, Russia

Field calculation and measurement of a staggered undulator with HTS YBCO Bulk
CHIANG Chen-An¹, CHEN Sei-Da², LUO Hao-Wen¹, HWANG Ching-Shiang², INGANN Chen³
¹National Tsing Hua University, Taiwan (ROC), ²National Synchrotron Radiation Research Center, Taiwan (ROC), ³National Cheng Kung University, Taiwan (ROC)
The MSU superconducting superferric cyclotron gas-stopper magnet, would replacing the LTS coils with HTS coils make any sense?

GREEN Michael, CHOUHAN Shailendra
1Michigan State University, United States

Prototype of the HTS shield for electron cooling system.

DROBIN Valery, KULIKOV Evgeny, DOROFEEV Gennady, SMIRNOV Alexander, MALINOWSKI Henryk
1Joint Institute for Nuclear Research (JINR), Russia

Large Superconducting Magnets of the NICA Facility at JINR
KOVALENKO Alexander, KEKELIDZE Vladimir, BUTENKO Andrew
1Joint institute for Nuclear Research, Russia

Design of a 16 Tesla Block-Coil Model Dipole for FCC
GIANLUCA Sabbi, XIAORONG Wang, EMMANUELE Ravaioli
1LBNL, United States, 2CERN, Switzerland

Performance of Super Separator Spectrometer (S3) multipole magnets
MANIKONDA Shashikant, MEINKE Rainer, NOLEN Jerry
1AML Superconductivity and Magnetics, United States, 2Argonne National Laboratory, United States

Self-field tests of Bi-Sr-Ca-Cu-O canted-cosine-theta dipoles
1LBNL, United States, 2NHMFL, Florida State University, United States

Novel approach to providing the main dipole field in the hadron version of the FCC
TAYLOR Thomas
1CERN, Switzerland

Performance of the LARP Nb3Sn Quadrupole HQ03a
CHLACHIDZE Guram, AMBROSIO Giorgio, ANERELLA Mike, BAJAS Hugo, BORGNOLUTTI Franck, BOSSERT Rodger, CHENG Daniel, DIETDERICH Daniel, FELICE Helene, FERRACIN Paolo, GHOSH Arup, GODEKE Arno, HAFALIA Aurelio, MARCHEVSKY Maxim, ORRIS Daryl, RAVAIOLI Emmanuele, SABBIA Gianluca, SCHMALZLE Jesse, SALMI Tiina, SYLVESTER Cosmore, TARTAGLIA Mike, TODESCO Ezio, WANDERER Peter, WANG Xiaorong, YU Miao
1FNAL, United States, 2BNL, United States, 3CERN, Switzerland, 4LBNL, United States

Different Methods for Studying and Analyzing Dimensional Change due to Heat Treatment of Nb-Sn Rutherford Cable made for Coils in Accelerator Magnets
PONG Ian, DIETDERICH Dan, GHOSH Arup, HOLIK III Eddie
1Lawrence Berkeley National Laboratory, United States, 2Brookhaven National Laboratory, United States, 3Fermi National Accelerator Laboratory, United States
Comparing Turn Position Errors and Field Quality Measurement of the LARP Nb-Sn Quadrupole Magnet HQ02
AMBROSIO Giorgio¹, CHLACHIDZE Guram¹, DIMARCO Joseph¹, BOSSERT Rodger², CHENG Daniel², DIETDERICH Daniel³, FELICE Helen², GHOSH Arup³, HOLIK III Eddie³, MARCHEVSKY Maxim², NOBREGA Alfred³, PONG Ian², SABBİ Gian⁵, SCHMALZLE Jesse⁴, WANG Xiaorong⁵, YU Miao⁵
¹Fermi National Accelerator Laboratory, United States, ²Lawrence Berkeley National Laboratory, United States, ³Brookhaven National Laboratory, United States

Simultaneous Magnetic Shielding and Magnetization Loss Measurements of YBCO Cylinders at Variable Temperatures Under Cryogenic Helium Gas Circulation
KVITKOVIC Jozef¹, PAMIDI Sastry¹
¹Florida State University, United States

Screening-currents simulation and experimental measurement in a YBCO tape-wound coil
DILASSER Guillaume¹, FAZILLEAU Philippe¹, PARDO Enric¹, TIXADOR Pascal¹
¹CEA Saclay, France, ²Slovak Academy of Sciences, Slovakia, ³Université de Grenoble-Alpes, France

Open circuit voltage of rotating magnets based superconducting flux pump
GENG J¹, MATSUDA K¹, FU L¹, COOMBS T A¹
¹University of Cambridge, United Kingdom

Hysteresis losses and Jc(B) scaling law for ITER Nb3Sn strand
SEILER Eugen¹, RICHTER David¹, BORDINI Bernardo¹, BOTTURA Luca¹, BESSETTE Denis², VOSTNER Alexander², DEVRED Arnaud²
¹CERN, Switzerland, ²ITER Organization, France

Temperature, mechanical stress and induced current distribution in YBCO bulk during pulsed field magnetization
TRILLAUD Frederic¹, BERGER Kévin², DOUINЕ Bruno², LEVÊQUE Jean²
¹Universidad Nacional Autónoma de México, Mexico, ²GREEN - Université de Lorraine, France

Temporal field change measurement on a pancake coil wound by coated conductor
OGITSU Toru¹, SUGANO Michinaka¹, NAKAMOTO Tatsushi¹, TAKAYAMA Shigeki², KOYANAGI Kei², TASIKA Kenji², ISHII Yusuke², AMEMIYA Naoyuki³, NODA Koji³
¹KEK, Japan, ²Toshiba Corporation, Japan, ³Kyoto University, Japan, ⁴National Institute of Radiological Sciences, Japan

2A-LS-P-03 Sep 8 - Afternoon (2:00-4:00 PM)
Large Scale - AC losses, magnetization effects, and other electromagnetic characteristics
Influence of an AC magnetic field on a superconducting bulk magnetized in an iron core
GONY Bashar¹, BERGER Kévin¹, DOUINE Bruno¹, LÉVÉQUE Jean¹
¹GREEN - Université de Lorraine, France

Numerical analysis of temperature dependence of ac loss for BSCCO insert in an 8T superconducting magnet
WANG Lei¹, WANG Qiuliang¹
¹Institute of Electrical Engineering, Chinese Academy of Sciences, China

AC losses in a 2G HTS coil at diverse temperatures
KIM Yungil¹, LEE Ji-Young¹, LEE Seyeon¹, PARK Sang Ho¹, KIM Woo-Seok¹, HONG Gye-Won¹, LEE Ji-Kwang², CHOI Kyeongda³
¹Korea Polytechnic University, South Korea, ²Woosuk University, South Korea

Properties of magnetized second generation superconductors in rotating machines: Critical role of substrates in magnetization and demagnetization of HTS stacked tapes
BAGHDADI Mehdi¹, RUIZ Harold¹, MATSUDA Koichi¹, COOMBS Timothy¹
¹University of Cambridge, United Kingdom

Numerical and experimental study of superconducting coils with different coated conductors in self field
ZHANG Huiming¹, YUAN Weijia¹, ZHANG Min¹, ZHANG Zhenyu¹
¹University of Bath, United Kingdom

Turn-to-turn Characteristic Resistance Determination of no-insulation YBCO HTS Pancake Coil
ZHANG Zhenyu¹, KIM Chu¹, KIM Jin Geun², KVITKOVIC Jozef³, PAMIDI Sastry², YUAN Weijia¹
¹University of Bath, United Kingdom, ²Florida State University, United States

Numerical and experimental study of superconducting coils in external magnetic field
ZHANG Huiming¹, YUAN Weijia¹, ZHANG Min¹, ZHANG Zhenyu¹
¹University of Bath, United Kingdom

Experimental research on ac loss and critical current of impregnated superconducting coils
ZHANG Huiming¹, YUAN Weijia¹, ZHANG Min¹
¹University of Bath, United Kingdom

Influence of the internal architecture of MgB2 conductors in the load-line of magnet coils.
PELEGRIN Jorge¹, YOUNG Edward¹, YANG Yifeng¹
¹Institute of Cryogenics, Energy Technology, University of Southampton, United Kingdom

Study of AC losses in HTS coils considering different harmonic components
AMARO Nuno¹, MURTA-PINA João¹, MARTINS João¹, CEBALLOS José-Manaº, CATARINO Isabelº
Performances of a 2G HTS coil wound on a Soft Magnetic Composite material core

MORICI Luigi¹, MESSINA Giuseppe¹, CELENTANO Giuseppe¹, MAIERNA Ferruccio¹, MARCHETTI Marcello¹, VIOLA Rosario¹, MARIGNETTI Fabrizio²

¹ENEA, Italy, ²University of Cassino, Italy

Large Scale - Quench, Stability & Thermal problems

3D Electro-Thermal Model For Assessing The Performance of Multilayered Structures When They Are Utilised In a Superconducting Fault Current Limiter

RUIZ Harold¹, COOMBS Tim¹

¹University of Cambridge, United Kingdom

Application of the FDM-ADI Method for Simulating SFCL under Inrush Conditions

DE SOUSA Wescley Tiago¹, POLASEK Alexander², DE ANDRADE Jr Rubens³

¹Federal University of Rio de Janeiro, Brazil, ²Electric Power Research Center, Brazil

Upgrading quench detection system for EAST TF magnet

HU Yanlan¹, PAN Chao¹, XIAO Yezhen¹

¹Institute of Plasma Physics, CAS, China

A New Numerical Model for the Quench Simulation in Cable in Conduit Conductor

YANG Yilin¹, WU Yu¹, LIU Bo¹

¹Institute of Plasma Physics, China

Investigation of Current Path between Turns of NI REBCO Pancake Coil by 2-D Finite Element Method

MONMA Katsutoshi¹, NOGUCHI So¹, IGARASHI Hajime¹, ISHIYAMA Atsushi²

¹Graduate School of Information Science and Technology Hokkaido University, Japan, ²Department of Electrical Engineering and Bioscience, Japan

Over-current Properties of MgB2 Wire Cooled by Liquid Hydrogen under Magnetic Field

SHIGETA Hiroki¹

¹Kyoto University, Japan

Study of HTS machine system cooling with a closed loop thermosyphon: stability for unsteady heat load and transient conduction

YAMAGUCHI Kota¹, MIKI Motohiro¹, IZUMI Mitsuru¹, MURASE Yohei², YANASE Etsuya², YANAMOTO Toshiyuki²

¹Tokyo University of Marine Science and Technology, Japan, ²Kawasaki Heavy Industries, Ltd, Japan
Validation test of the forced-flow cooling concept for the superconducting magnet of AMIT cyclotron
MUNILLA Javier1, ABRAMIAN Pablo1, CALERO Jesus1, GARCÍA-TABARES Luis2, GUTIERREZ Jose Luis2, MOLINA Eduardo1, TORAL Fernando1, VAZQUEZ Cristina1
1CIEMAT, Spain

Experimental study and simulation of quench in MgB2 coils for wind generators for SUPRAPOWER
SANZ Santiago1, SARMIENTO Gustavo1, PUJANA Ainhoa1, JOSE Merino1, MARINO Iker1
1TECNALIA, Spain

The magnetization processes in layered high-temperature superconductors: the effect of anisotropy
KASHURNIKOV Vladimir1, MAKSIMOVA Anastasiia1, RUDNEV Igor1
1National Research Nuclear University MEPhI, Russia

Comparison of overcurrent responses of 2G HTS tapes
CZERWINSKI Dariusz1, JAROSZYNSKI Leszek1, CHARMAS Barbara2, MAJKA Michal3, KOZAK Janusz3
1Lublin University of Technology, Poland, 2Marie Curie-Sklodowska University, Poland, 3Electrotechnical Institute, Poland

Coupled Electromagnetic-Thermal Analysis of YBCO Bulk Magnets for the Excitation System of Low-Speed Electric Generators
BRANCO Paulo1, ARNAUD Joao1
1Universidade de Lisboa, Instituto Superior Técnico, Portugal

Finite element modeling of the magnetization process of a superconducting stack
LOPEZ Jose1, GRANADOS Xavier2, CARRERA Miquel3, MAYNOU Roger1
1UPC BarcelonaTech, Spain, 2ICMAB-CSIC, Spain, 3Universitat de Lleida, Spain

Quench Propagation Simulation Using Monte Carlo Method
MANIKONDA Shashikant1, MEINKE Rainer2, BHADORI Reza2
1AML superconductivity and magnetics, United States, 2Florida Institute of Technology, United States

Computational evaluation of temperature distribution in various layers of HTS cable using finite element method
CHEMIKALA Prudhvinath Reddy1, SUNIL Karthik2, USURUMARTI Preeti Rao2, DONDAPATI Rajasekhar3
1Lovely Professional University, India, 2PVKK Institute of Technology, India

Numerical analysis for forced convection heat transfer of cryogenic hydrogen at supercritical pressure
SHIRAI Yasuyuki1, SHIOTSU Masahiro1, NARUO Yoshihiro2, KOBABASHI Hiroaki2, NONAKA Satoshi2, INATANI Yoshifumi2
1Kyoto University, Japan, 2Japan Aerospace Exploration Agency (JAXA), Japan
Impact of Matrix Material on Quench Propagation in MgB2 Conductors
MASOUDI Ali\textsuperscript{1}, LECLERC Julien\textsuperscript{1}, MASSON Philippe\textsuperscript{1}
\textsuperscript{1}University of Houston, United States

2A-LS-P-05 Sep 8 - Afternoon (2:00-4:00 PM)
Large Scale - Test facilities and measurement

Test of 6 kA HTS Current Leads for Accelerator Magnet
LIU Chenglian\textsuperscript{1}, DING Kaizhong\textsuperscript{1}, ZHOU Tingzhi\textsuperscript{1}, FENG Hansheng\textsuperscript{1}, WU Huan\textsuperscript{1}, LIU Xiang\textsuperscript{1}, JING Kaiming\textsuperscript{1}, ZHANG Ke\textsuperscript{1}, LU Kun\textsuperscript{1}, SONG Yuntao\textsuperscript{1}
\textsuperscript{1}Institute of Plasma Physics, CAS, China

Recent progress in compact, robust and superior field-tolerant QMG current leads using RE-Ba-Cu-O bulk superconductors
TESHIMA Hidekazu\textsuperscript{1}, NARIKI Shinya\textsuperscript{1}, MORITA Mitsu\textsuperscript{1}
\textsuperscript{1}Nippon Steel & Sumitomo Metal Corporation, Japan

Commissioning of a Cryogenic DC Superconducting Current Transformer for the Operation of a 70 kA Superconducting Transformer at the CERN Cable Test Facility
MONTENERO Giuseppe\textsuperscript{1}, PASQUALE Arpaa\textsuperscript{1}, BALLARINO Amalia\textsuperscript{1}, BOTTURA Luca\textsuperscript{1}
\textsuperscript{1}European Laboratory for Nuclear Research (CERN), Switzerland,
\textsuperscript{2}Università di Napoli Federico II, Italy

Commissioning of HTS Adapter and Heat Exchanger for Testing of High Current HTS Conductors
WESCHE Rainer\textsuperscript{1}, BYKOFSKY Nikolay\textsuperscript{1}, UGLIETTI Davide\textsuperscript{1}, SEDLAK Kamil\textsuperscript{1}, STEPA\textsuperscript{1}NOV Boris\textsuperscript{1}, BRUZZONE Pierluigi\textsuperscript{1}
\textsuperscript{1}EPFL-CRPP, Switzerland

Upgrade of the Automatic Measurement System for the Electrical Verification of the LHC Superconducting Circuits
LUDWIN Jaromir\textsuperscript{1}, JURKIEWICZ Piotr\textsuperscript{1}
\textsuperscript{1}Henryk Niewodniczanski Institute of Nuclear Physics, Poland

Development of Zinc Coating Methods on Fiber Bragg Grating Temperature Sensors
SUGINO Motohiko\textsuperscript{1}, OGATA Masafumi\textsuperscript{1}, KATSUTOSHI Mizuno\textsuperscript{1}, HASEGAWA Hitoshi\textsuperscript{1}
\textsuperscript{1}Railway Technical Research Institute, Japan

Modified calibration free method for AC magnetization loss measurement
FROLEK Lubomir\textsuperscript{1}, PITEL Jozef\textsuperscript{1}, TANC\textsuperscript{C}\textsuperscript{\text{\v{r}}} Juraj\textsuperscript{1}
\textsuperscript{1}Institute of Electrical Engineering, SAS, Slovakia

Novel rotating coil setup for the definition of the magnetic field quality for XFEL magnets
BONDARCHUK Eduard\textsuperscript{1}, KLIMCHENKO Yury\textsuperscript{1}, KONSTANTINOV Alexey\textsuperscript{1}, KOVALCHUK Oleg\textsuperscript{1}, LANCETOV Andrey\textsuperscript{1}, MARUSHIN Egor\textsuperscript{1}, MEDNIKOV Andrey\textsuperscript{1}, RODIN Igor\textsuperscript{1}
\textsuperscript{1}JSC D.V.Efremov Institute of Electrophysical Apparatus, Russia
DESIGNING VAPOUR-COOLED AND FORCED-FLOW COOLED CURRENT LEADS
AUGUSTO Paulo¹, CASTELO-GRANDE Teresa¹, AUGUSTO Pedro², BARBOSA Domingos¹, ESTEVEZ Angel²
¹LEPABE, Faculdade de Engenharia da Universidade do Porto, Portugal, ²Science Manager, Faculty of Medicine of Porto University, Portugal

Magnet Test Facility Upgrades at LBNL
TURQUETI Marcos¹, MARCHEVSKY Maxim¹
¹Lawrence Berkeley National Laboratory, United States

Study of the self field influence on the IxV characteristic of 2G superconducting coil
MARTINS ROCHA Luis Micahel¹, DIAS Daniel¹, SOTELO Guilherme¹, POLASEK Alexander², MARTINS Helvio²
¹Universidade Federal Fluminense, Brazil, ²Centro de Pesquisas de Energia Elétrica, Brazil

Probing the characteristics of the magnetic moment of large bulk GdBCO single domains using a flux extraction magnetometer suited to large samples
VANDERBEMDEN Philippe¹, EGAN Raphael¹, PHILIPPE Matthieu¹, WERA Laurent¹, MORITA Mitsuru², NARIKI Shinya², TESHIMA Hidekazu², VANDERHEYDEN Benoît³, FAGNARD Jean-Francois¹
¹University of Liège, Belgium, ²Nippon Steel & Sumitomo Metal Corporation, Japan

Study on the Transport Current Characteristic Test for the HTS Tape Under the Spray Cooling
DU Ho Ik¹, HONG Gong Hyun¹
¹Chonbuk National University, South Korea

Comparison of peak current limiting in two magnetically coupled SFCLs using dual iron core
KO Seok¹, KIM Young¹
¹Kongju National University, South Korea

Effect of peak current limiting in series connection SFCL with two magnetically coupled circuits using E-I core
KIM Young¹, LIM Sung², KO Seok¹
¹Kongju National University, South Korea, ²Soongsil University, South Korea

Analysis on Current Limiting Characteristics of Transformer Type Superconducting Fault Current Limiters Made of BSCCO and GdBCO Wires
ZHANG Chi¹, YONEMURA Naoki¹, MUKAI Mariko¹, SHIRAI Yasuyuki¹, BABA Jumpei²
¹Kyoto University, Japan, ²The University of Tokyo, Japan
Performance of Modular SFCL using REBCO Coated Conductor Tapes under repetitive overcurrent tests  
Baldan Carlos¹, Yuan Weijia¹, Shigue Carlos¹, Ruppert Filho Ernesto²  
¹EEL - University of Sao Paulo - USP, Brazil, ²University of Bath, United Kingdom

Saturated iron-core superconducting fault current limiter assisted by a fast circuit fault detector  
Fajoni Fernando¹, Ruppert Ernesto², Baldan Carlos²  
¹FEEC - State University of Campinas - UNICAMP, Brazil, ²EEL - University of Sao Paulo - USP, Brazil

Optimized Design of the Dc Coil, Ac Coil, and the Iron Core for a Saturated Iron Core Superconducting Fault Current Limiter  
Wei Ziqiang¹, Xin Ying¹, Jin Jianxun¹, Cui Jibin², Tian Bo², Li Bin¹  
¹Tianjin University, China, ²Futong Group, Co., China

A Superconducting Air-Core Power Reactor with Non-Inductive Coil Insert  
Jin Jian Xun¹, Chen Xiao Yuan², Xin Ying¹  
¹Tianjin University, China, ²Sichuan Normal University, China

Recovery Characteristics of GdBCO Superconducting Tape with Cooling Fins and Teflon Coating for Resistive Fault Current Limiter  
Shirai Yasuyuki¹, Yoneda Kazuya¹, Higa Daisuke¹, Shiotsu Masahiro¹, Honda Yoshihiro¹, Isojima Shigeki²  
¹Kyoto University, Japan, ²Sumitomo Electric Industries, Japan

Modeling and experiment of the current limiting performance of a resistive superconducting fault current limiter in the experimental system  
Liang Fei¹, Yuan Weijia¹, Baldan Carlos², Zhang Min¹, Lamas Jérika²  
¹University of Bath, United Kingdom, ²University of Sao Paulo, Brazil, ³Université Libre de Bruxelles, Belgium

A method for quench detection in inductive superconducting fault current limiters of transformer type  
Murta-Pina Joao¹, Alves Marco²  
¹Centre of Technology and Systems - UNINOVA, Portugal, ²Faculdade de Ciencias e Tecnologia - Universidade de Lisboa, Portugal

Evaluation of Electrical and Mechanical Properties of Micro-joined Coated Conductors  
Arsénio Pedro¹, Vilhena Nuno¹, Murta-Pina Joao¹, Pronto Anabela¹, Alvarez Alfredo¹, Suarez Pilar¹, Miranda Rosa²  
¹Uninova - Centre of Technology and Systems, Portugal, ²“Benito Mahedero” Group of Electrical Applications, Spain, ³UNIDEI, Portugal

Thermal stability of different ReBCO tapes at varying electrical field and over-current conditions  
Andrey Kudymow¹, Steffen Elschner², Severin Strauss³  
¹Karlsruhe Institute of Technology (KIT), Germany, ²Mannheim University of Applied Sciences, Germany
Behavior of a small superconducting fault current limiter based on SmBaCuO polycrystalline ceramic
PASSOS Carlos¹, ORLANDO Marcos¹, CAPUCHO Ivan¹, ROCHA JR Edmilson¹, ABILIO Vinicius¹, MCAHCADO Luiz¹
¹Federal University of Espirito Santo, Brazil

Design methodology for modelling and simulation of saturated cores fault current limiters
VILHENA Nuno¹, ARSEÑIO Pedro¹, MURTA-PINA João¹, PRONTO Anabela¹, ÁLVAREZ Alfredo²
¹UNINOVA - CTS, Portugal, ²Electrical Engineering Department, University of Extremadura, Spain

Study on Peak Fault Current Limiting Characteristics of SFCL using Two Magnetically Coupled Shunt-Reactors
KO Seok-Cheol¹, LIM Sung-Hun²
¹Kongju National University, South Korea, ²Soongsil University, South Korea

2A-LS-P-07 Sep 8 - Afternoon (2:00-4:00 PM)
Large Scale - Transmission and Distribution Cables II

Development and characterisation of a 2G HTS Roebel cable for aircraft power systems
FETISOV Sergey¹, ZUBKO Vasily¹, ZANEgin Sergey¹, NOSOV Alexander¹, VYsotsky Vitaly¹, KARIO Anna², KLING Andrea², GOLDACKER Wilfried³, MOLODYK Alexander³, MANKEVICH Alexey³, KALITKA Vladislav³, SAMOILENKOv Sergey², MELYUKOV Dmitry²
¹Russian Scientific R&D Cable Institute, Russia, ²Karlsruhe Institute of Technology (KIT), Germany, ³SuperOx, Russia

Development and test results of the first Russian triaxial HTS cable prototype with 1 kV/2 MVA ratings
FETISOV Sergey¹, ZUBKO Vasily¹, ZANEgin Sergey¹, NOSOV Alexander¹, VYsotsky Vitaly¹
¹Russian Cable Scientific R&D Institute, Russia

Sustainable power transmission - Socio-economics of superconducting transmission lines
THOMAS Heiko¹, MARIAN Adela¹, CHERVYAKOV Alexander¹, RUBBIA Carlo¹
¹Institute for Advanced Sustainability Studies e.V., Germany

Offshore Renewable Energy Integration – Superconducting Submarine Power Cables
LI Quan¹, INGRAM David¹
¹University of Edinburgh, United Kingdom

Evaluation of Thermoelectric Performance of Peltier Current Leads designed for Superconducting Direct-Current Transmission Cable Systems
SEIKI Miyata¹, YUKIO Yoshiwara¹, HIROFUMI Watanabe¹, KENGO Yamauchi¹, KEIJI Makino¹, SATAROU Yamaguchi¹
¹Chubu University, Japan
Design and Construction of the 500-meter and 1000-meter DC Superconducting power cables
CHIKUMOTO Noriko¹, WATANABE Hirofumi¹, IVANOV Yury¹, TAKANO Hirofisa¹, YAMAGUCHI Sataro¹, KOSHIZUKA Hiromi², HAYASHI Kazuhiko³, SAWAMURA Toru⁴
¹Chubu University, Japan, ²Chiyoda Corporation, Japan, ³Sumitomo Electric Industries, Ltd., Japan, ⁴Sakura Internet Inc., Japan

The test results of AC and DC HTS cables in Russia
SYTNIKOV Victor¹, BEMERT Sergey¹, KRIVETSKY Igor¹, ROMASHOV Maxim¹, SHAKARYAN Yuri¹
¹JSC R&D Center, FGC UES, Russia

Numerical Simulation for Development of a Superconducting Power Cable
SILVA Edson¹, NEVES Marcelo¹, LOPES Artur¹, CASTELLO-BRANCO Luiz¹, ANTUNES Janefer¹, TORRES Alesson¹, NASCIMENTO Carlos²
¹LMDS-UFRRJ, Brazil, ²CEMIG, Brazil

New HTS Cable Project in Japan – Progress in Safety and Reliability of HTS Power Transmission Technology -
OHYA Masayoshi¹, MASUDA Takato¹, MIMURA Tomoc², HONJO Shoiči³, MUKOYAMA Shinichi³, YAGI Masashi³, IJIMA Yasuhiro⁴, WATANABE Kazuo⁴, YAGUCHI Hiroharu⁵, MACHIDA Akitô⁵
¹Sumitomo Electric Industries, Ltd., Japan, ²Tokyo Electric Power Company, Japan, ³Furukawa Electric Co., Ltd., Japan, ⁴Fujikura Ltd., Japan, ⁵Mayekawa MFG. Co., Ltd., Japan

Design and testing of 200 kW synchronous motor with 2G HTS field rotor coils
DEZHIN Dmitry¹, KOVALEV Konstantin¹, VERZHBITSKY Leonid², KOZUB Sergey³, FIRSOV Valery¹
¹Moscow Aviation Institute, Russian Federation, ²JSC Scientific-Research Institute of Electromechanical Plant, Russian Federation, ³Institute for High Energy Physics, Russian Federation

AC Loss Modelling and Comparison for 10 MW Wind Turbine Generators with MgB2 Superconducting Field Winding
LIU Dong¹, SCHELLEVIS Joost¹, POLINDER Henk¹, ABRAHAMSEN Asger², MAGNUSSON Niklas³
¹Delft University of Technology, Netherlands, ²Technical University of Denmark, Denmark, ³SINTEF Energy Research, Norway

The electromagnetic design of a 15 kW-class fully-superconducting synchronous generator
SONG Peng¹, QU Timing², WU Qihong³, GU Chen¹, HAN Zhenghe¹
¹Applied Superconductivity Research Center, China, ²Department of Mechanical Engineering, Tsinghua University, China

AC Losses of 2G HTS Machines in Different Operating Conditions
SONG Xiaowei¹, MIJATOVIC Nenad¹, JENSEN Bogi², HOLBOELL Joachim³
¹Applied Superconductivity Research Center, China, ²University of Strathclyde, Scotland, ³Technical University of Denmark, Denmark
Technical University of Denmark, Denmark, University of the Faroe Islands, Faroe Islands

Estimation of hysteretic losses for MgB2 tapes in a generator-like operation condition
VARGAS-LLANOS Carlos Roberto1, RODRIGUEZ-ZERMENO Victor M.1, TRILLAUD Frederic1, GRILLI Francesco2
1National Autonomous University of México (UNAM), Mexico, 2Karlsruhe Institute of Technology (KIT), Germany

Axial-field HTS machine with integrated magnetic coupling
DOLISY Bastien1, MEZANI Smail1, LUBIN Thierry1, BERGER Kevin1, DOUINE Bruno1, LÉVEQUE Jean1
1Université de Lorraine, France

YBCO coils system for axial flux electrical machines applications: manufacturing and test
MESSINA Giuseppe1, MORICI Luigi1, CELENTANO Giuseppe1, MAIERNA Ferruccio1, MARCHETTI Marcello1, VIOLA Rosario1
1ENEA, Italy

Experimental evaluation of a new induction motor starting method using superconducting
BRAZ DA SILVA Flavio1, BALDAN Carlos2, JUSSARA Fardin3, SIMONETTI Domingos3
1IFES - Federal Institute of Espirito Santo, Brazil, 2EEL - University of São Paulo - USP, Brazil, 3UFES-Federal University of Espirito Santo, Brazil

Short circuit and locked rotor tests of a superconducting machine
BAILEY Wendell1, YANG Yifeng1, ZHANG Qingbo1, BEDUZ Carlo1
1University of Southampton, United Kingdom

Comparison of Force Density of Various Superconducting Linear Motor Types Considering Numerically Evaluated AC Losses
DE BRUYN Bart1, JANSEN Helm1, LOMONOVA Elena1
1Eindhoven University of Technology, Netherlands

YBCO-SrTiO3 multilayer approach for coated conductors on textured Ni-W tapes
CHERNYKH Igor1, KRYLOVA Tatiana1, SHAYNUROV Ruslan1, ZANAVESKIN Maxim1
1National Research Centre "Kurchatov institute", Russia

Low temperature fabrication of high-Tc REBa2Cu3Oy films by oxygen partial pressure controlled KOH flux method
FUNAKI Shuhei1, YAMADA Yasuji1, OKUNISHI Ryota1, MIYACHI Yugo1
1Shimane University, Japan
The optimization of nitrates decomposition synthesis for preparation of LaBaCaCu3Oy (6 < y < 7)
ARADA M.el Hachemi
Université de Jijel, Algeria

Low-angle grain boundaries revisited: towards a field effect study
FÊTE Alexandre, ROSSI Lidia, AUGIERI Andrea, SENATORE Carmine
University of Geneva, Switzerland

Current flowing mechanism through interlayers in YBa2Cu3Ox - SrTiO3 multilayer structures on textured tapes
CHERNYKH Igor, KRYLOVA Tatiana, CHERNYKH Maria, SHAINUROV Ruslan, ZANAVESKIN Maxim
NRC "Kurchatov Institute", Russia

Inkjet printed multifilamentary YBCO/PrBCO coated conductors
MITCHELL-WILLIAMS Thomas, Vanden Bussche Dries, HOPKINS Simon, PETRYKIN Valery, MOLOYK Alexander, VAN DRIESSCHE Isabell, GLOWACKI Bartek
University of Cambridge, United Kingdom, SuperOx Japan LLC, Japan, SuperOx-Innovations, Russia, Ghent University, Belgium

Doping effects of Cl on the magnetic angular dependence of Jc of fluorine-free MOD Y123 films
MOTOKI Takanori, SHIMOYAMA Jun-Ichi, YAMAMOTO Akiyasu, OGINO Hiraku, KISHIO Kohji, IKUHARA Yuichi, HORII Shigeru, DOI Yoshiya, HONGA Genki, NAGASHI Tatsuoki
The University of Tokyo, Japan, Sumitomo Electric Industries, Ltd., Japan

Cube Texture Formation of Cu-33at.%Ni Alloy Substrates and CeO2 Buffer Layer for YBCO Coated Conductors
YI Wang, HUI Tian
Beijing University of Technology, China

Superconducting properties and degradation in water of Gd-Ba-Cu-O tapes fabricated by a suspension spinning
BAN Eriko, IKEBE Yumiko
Meijo University, Japan

Preparation of YbBa2Cu4O8 epitaxial films using metal organic deposition method
HORIDE Tomoya, AOYAGI Shoma, DICHIUSE Ataru, MATSUMOTO Kaname
Kyushu Institute of Technology, Japan, Central Research Institute of Electric Power Industry, Japan

Tailoring of YBCO film with Artificial Pinning Center For Low Temperature and High Field Pinning Application.
ANGRISANI ARMENIO Achille, PINTO Valentina, MANCINI Antonella, RIZZO Francesco, VANNOZZI Angelo, RUFOLONI Alessandro, AUGIERI Andrea, GALLUZZI Valentina, SOTGIU Giovanni, FROLOVA Anna, POMPEO Nicola, SILVA Enrico, CELENTANO Giuseppe
ENEA, Italy, Università di Roma Tre, Italy
The influence factors during the preparation process of SCO buffer via reel-to-reel slot-die coating

ZHao Yong†, Yong Zhang†
†Southwest Jiaotong University, China

Nanocomposite YBa2Cu3O7-δ thin films using low fluorine metal organic deposition and preformed nanocrystals

POLLEFEYT Glenn†, RIJCKAERT Hannes†, DE KEUKELEERE Katrien†, DE ROO Jonathan†, HÄNISCH Jens†, FEENSTRA Ron†, BENNEWITZ Jan†, BÄCKER Michael†, HEMGESBERG Maximilian†, VAN DRIESSCHE Isabel†
†Ghent University, Belgium, ‡Karlsruhe Institute of Technology (KIT), Germany, §Deutsche Nanoschicht GmbH, Germany, ¶BASF, Germany

Understanding growth and nucleation of nanocomposite YBa3Cu307-δ thin films derived from low fluorine metal organic deposition.

RIJCKAERT Hannes†, POLLEFEYT Glenn†, DE KEUKELEERE Katrien†, DE ROO Jonathan†, HÄNISCH Jens†, FEENSTRA Ron†, BENNEWITZ Jan†, BÄCKER Michael†, HEMGESBERG Maximilian†, VAN DRIESSCHE Isabel†
†Ghent University, Belgium, ‡Karlsruhe Institute of Technology (KIT), Germany, §Deutsche Nanoschicht GmbH, Germany, ¶BASF, Germany

Intermediate phase evolution in YBCO films fabricated by precursor solution with a F/Ba atomic ratio of 2

WU Wei†, FENG Feng†, ZHAO Yue‡, TANG Xiao‡, GRIVEL Jean-Claude‡, HAN Zhenghe‡, HONG Zhiyong†, JIN Zhijian†
†Shanghai Jiao Tong University, China, ‡Tsinghua University, China, §Technical University of Denmark, Denmark, ¶University of Hamburg, Germany

Development of a low-fluorine propionate precursor solution for YBCO superconducting films

NASUI Mircea†, PETRISOR Traian Jr.†, MOS Ramona†, MESAROS Amalia†, GABOR Mihai†, RIZZO Francesco†, CELENTANO Giuseppe†, CIONTEA Lelia†, PETRISOR Traian†
†Technical University of Cluj–Napoca, Romania, §ENEA Superconductivity Laboratory, Italy

In-situ monitoring of oxygenation kinetics in solution derived YBCO films by electrical resistivity

CAYADO Pablo†, SÁNCHEZ Cesar†, STANGL Alexander†, VALLÉS Ferran†, PALAU Anna†, COLL Mariona†, PUIG Teresa†, OBRADORS Xavier†
†ICMAB-CSIC, Spain

2A-M-P-02 Sep 8 - Afternoon (2:00-4:00 PM)
Materials - Vortex, flux pinning I

Relationship between the vortex movement and the surface resistance of YBCO thin films in high magnetic fields

OHSHIMA Shigetoshi†, SATO Keisuke†
†Yamagata University, Japan
Dissipative mechanisms of moving vortices in mesoscopic superconducting systems
DUARTE Elwis¹, SARDELLA Edson¹, ZADOROSNY Rafael¹, MILOSEVIC Milorad²
¹Univ Estadual Paulista - UNESP, Brazil, ²Universiteit Antwerpen, Belgium

Analysis of order and vortex grouping in an isotropic vortex glass in microTesla-field-cooled YBCO thin films by scanning SQUID microscopy
WELLS Frederick¹, PAN Alexey¹, GOLOVCHANSKIY Igor¹, FEDOSEEV Sergey¹, WANG X. Renshaw, HILGENKAMP Hans²
¹University of Wollongong, Australia, ²University of Twente, Netherlands

Analysis of the ac magnic response of superconductors across the dc irreversibility line
MIU Lucica¹, IVAN Ion¹, IONESCU Alina¹, MIU Dana²
¹National Institute of Materials Physics, Romania, ²National Institute of Laser, Plasma, and Radiation, Romania

Observation of Little-Parks oscillations in a multiband superconducting film
NISHIO Taichiro³, ARISAWA Shunichi², TANAKA Yasumoto³
¹Tokyo University of Science, Japan, ²NIMS, Japan, ³AIST, Japan

Dopant diameter dependence of Jc(B) in doped YBCO films
PATURI Petriina¹, MALMIVIRTA Mika¹, PALONEN Heikki², HUHTINEN Hannu¹
¹University of Turku, Finland, ²Uppsala University, Sweden

Measurements of vortex pinning in YBCO and YBCO/BZO coated conductors using a microwave technique.
TOROKHTII Kostiantyn¹, POMPEO Nicola¹, RIZZO Francesco², AUGIERI Andrea³, MANCINI Antonella³, CELENTANO Giuseppe², SILVA Enrico³
¹Università di Roma Tre, Italy, ²ENEA CR Frascati, Italy

Electron holography of high temperature superconductors – experiences and learnings.
PUICHAUD Anne-Helene¹, KNIBBE Ruth¹, YAZDI Sadegh², KASAMA Takeshi³, WIMBUSH Stuart¹, STRICKLAND Nick¹, TALANTSEV Evgeny¹
¹Victoria University of Wellington, New Zealand, ²Technical University of Denmark, Denmark

Effects of the size of pinning centers on the flux pinning properties of YBCO single grain grown by Top Seeded Melt Texture and Growth
MOUTALBI Nahed¹, NOUDEM Jacques², M'CHIRGUI Ali³
¹Systems and Applied Mechanics Laboratory LASMAP, Tunisia, ²CRISMAT - LUSAC / CNRS, UCBN / ENSICAEN, France

Vortex pinning behavior of YBa2Cu3O7 thin films grown on La0.66Sr0.33MnO3 nano-island decorated MgO (001) substrates
PETRISOR Traian Jr¹, MOS Ramona¹, NASUI Mircea¹, GABOR Mihai, MESAROS Amalia¹, SANDU Viorel², MIU Lucica², CIONTEA Lelia¹, PETRISOR Traian¹
Collective Pinning and E–J characteristics of 2G Coated Conductor Tapes
FALORIO Iole1, YOUNG Edward1, YANG Yifeng1
1Institute of Cryogenics, Energy Technology, University of Southampton, United Kingdom

Pinning and Matching effects in YBa2Cu3O7-x thin films with Ba2Y(Nb/Ta)O6 additions
OPHERDEN Lars1, SIEGER Max1, MELEDIN Alexander2, BIANCHETTI Marco1, PAHLKE Patrick1, NAST Rainer3, SCHULTZ Ludwig1, VAN TENDELOO Gustaaf2, HOLZAPFEL Bernhard3, MACMANUS-DRISCOLL Judith4, HÜHNE Ruben1, HÄNISCH Jens4
1IFW Dresden, Germany, 2University of Antwerp, Belgium, 3University of Cambridge, United Kingdom, 4Karlsruhe Institute of Technology (KIT), Germany

Stability mechanisms of high current transport in iron-chalcogenides superconducting films
LEO Antonio1, AVITABILE Francesco1, GRIMALDI Gaia2, GUARINO Anita1, MARRA Pasquale2, CITRO Roberta1, BELLINGERI Emilio2, KAWALE Shrikant2, FERDEGHINI Carlo2, NIGRO Angela1, PACE Sandro1
1Università degli Studi di Salerno, Italy, 2CNR-SPIN, Italy

Combined effect of high-energy heavy-ion and proton irradiation on iron based superconductor (Ba, K)Fe2As2 studied by quantitative magneto-optical imaging
LAVIANO Francesco1, GERBALDO Roberto1, GHIGO Gianluca1, GOZZELINO Laura1, MIKITIK Grigorii2, TAMEGAI Tsuyoshi3
1Politecnico di Torino, Italy, 2Ukrainian Academy of Sciences, Ukraine, 3The University of Tokyo, Japan

Optimal, Nanodefect Configurations via Strain-Mediated Assembly for Optimized Vortex-Pinning in High-Temperature Superconducting Wires in a Wide Operating Temperature Regime from 4.2K-77K

Enhancement of high-Tc phase formation and critical current density in (Bi,Pb)-2223 superconductor by B4C doping and high-energy ball milling
MARGIANI Nikoloz1, PAPUNASHVILI Natela1, ADAMIA Zurab1, DZANASHVILI Dalir2, MULMADZE Giorgi2, NIKOGHOSYAN Sergey3, SAHAKYAN Aram3, KUZANYAN Armen4, SARKISYAN Albert5
1VI. Chavchavidze Institute of Cybernetics of the Georgian Technical University, Georgia, 2R. Agladze Institute of Inorganic Chemistry and Electrochemistry, Georgia, 3Yerevan Physics Institute, Armenia, 4Institute for Physical Research (IPR) of NAS RA, Armenia, 5International Scientific-Educational Center of NAS, Armenia
Topotactic synthesis and pressure effects of BiS2-based superconductors
OGINO Hiraku1, OKADA Tomoyuki1, YAKITA Hiroyuki1, SHIMOYAMA Jun-Ichi1, KISHIO Kohji2, TAKESHITA Nao2, SHIRAKAWA Naoki2, IYO Akira2, EISAKI Hiroshi2
1The University of Tokyo, Japan, 2National Institute of Advanced Industrial Science and Technology, Japan

Relationship between phase stability and alkaline-earth and rare-earth species in Nb- and Ta-“1-2-1-2” compounds
MAEDA Toshihiko1, HIRANO Shoya3, AKESAKA Takeshi1, MATSUDA Gota1, YASUDA Kento1
1Kochi University of Technology, Japan

Critical temperature of superconducting proximity sytems with nonuniform ferromagnetic
TUMANOV Vadim1, PROSHIN Yuri1
1Kazan Federal University, Russia

Impurity Effects on Transition Temperatures of Nano-Structured Superconductors
UMEDA Masaki1, KATO Masaru1, SATO Osamu1
1Osaka Prefecture University, Japan

Thickness Modulated Niobium Nano-strips by Focused Ion Beam
DE LEO Natascia1, FRETTO Matteo1, LACQUANITI Vincenzo1, CASSIAGO Cristina1, D’ORTENZI Luca1, BOARINO Luca1, MAGGI Sabino1
1INRIM National Institute for Metrological Research, Italy, 2CNR-IRSA, Italy

Revisiting of specific heat of non-superconducting PrBCO ceramics in orthorhombic phase: signature of magnetic phase transitions at low temperatures
LAHOUBI Mahieddine1
1Badji Mokhtar-Annaba University, Faculty of Science, Algeria

Effect of Co addition on (Sm, Gd, Dy)-Ba-Cu-O filament fabricated by a solution spinning method
HOSONO Takanori1, IKEBE Yumiko1, BAN Eriko1
1Meijo University, Japan

Effects of Nano-Boron (98% B - 2% C) addition on superconducting properties of BSCCO
OZTURK Hamit1, SAFRAN Serap1, KILIC Ahmet1, GENCER Ali1
1Ankara University, Turkey

THIN SUPERCONDUCTING CUPRATE FILMS BASED ON THALLIUM PREPARED USING FLUORIDE PRECURSORS
SOJKOVÁ Michaela1, STRBÍK Vladimír2, CHROMÍK Štěfan2, LIDAY Jozef1, VOGRINČIČ Peter3, DOBROČKA Edmund1, ŠPANKOVÁ Marianna1
1Institute of Electrical Engineering, SAS, Slovakia, 2Department of Microelectronics, Slovak Technical University, Slovakia, 3STU Centre for Nanodiagnostics, Slovakia
Normal State Optical Features Study of Nd123 and Gd1212 HTSC Materials for Photonics and MetaMaterials Fabrication
GOMBOS Marcello¹, RENDINA Ivo¹, ROMANO Silvia¹, CARAPELLA Giovanni², CIANCIO Regina³, MOCELLA Vito¹
¹CNR-IMM UdR Napoli, Italy, ²Università di Salerno - Dip. Fisica "E.R.Caianiello", Italy, ³CNR-IOM UdR TASC Trieste, Italy

Peparation and performance of low loss NbTi superconducting wire with Cu10Ni matrix
WANG Qingxiang¹, LI Yonghua², ZHU Yanmin¹
¹Western Superconducting Technologies Co., LTD

2A-M-P-04 Sep 8 - Afternoon (2:00-4:00 PM)
Materials - MgB2 II

Phase formation, microstructure and superconductivity of MgB2 bulk prepared using Mg and MgB4 powders
JUN Byung-Hyuk¹, KIM Chan-Joong¹, CHOO Kee Nam¹, PARK Soon-Dong¹
¹Korea Atomic Energy Research Institute, South Korea

Bulk and tape MgB2 superconductor co-added with SiC and Te processed by ex-situ spark plasma sintering
ALDICA Gheorghe¹, SANDU Viorel¹, POPA Stelian¹, ENCULESCU Monica¹, BADICA Petre¹
¹National Institute of Materials Physics, Romania

Enhancement of the critical current density by Ge2C6H10O7 addition into MgB2 Superconductor Obtained by ex-situ Spark Plasma Sintering
BATALU Dan¹, MIHAIL Burdusel², POPA Stelian³, ENCULESCU Monica³, PASUK Iuliana³, ALDICA Gheorghe³, BADICA Petre³

Low temperature fracture strength of MgB2 bulk processed by Spark Plasma Sintering
MURAKAMI Akira¹, NOUDEM Jacques², GUESMI Zied², IWAMOTO Akifumi³
¹Ichinoseki College, Japan, ²LUSAC/CRISMAT, UCBN/ENSICAEN, France, ³Université du Littoral Côte d'opale, France, ⁴National Institute for Fusion Science, Japan

Effect of Turkish Raki on Superconducting Properties of Bulk MgB2 Fabricated by an Novel Method Using Nano Boron
KILICARSLAN Ebru¹, GENCER Ali², YANMAZ Ekrem¹
¹Ankara University, Turkey

The effect of Boron doped on the superconducting properties of Bi-2212 bulk samples
ALP Meryem¹, SAFRAN Serap¹, KILIC Ahmet¹
¹Ankara University, Turkey
Controlling the formation of grain boundaries in ex-situ MgB2 bulks and wires

YAMAMOTO Akiyasu¹, MIZUTANI Shunusuke¹, SHIMOYAMA Junichi¹, KISHIO Kohji², SHIMADA Yusuke², HATA Satoshi², MATSUMURA Syo³, KODAMA Motomune³, TANAKA Hideki³
¹The University of Tokyo, JST-PRESTO, Japan, ²Kyushu University, Japan, ³Hitachi, Ltd., Japan

The critical current density (Jc) and critical temperature (Tc) of the cerium and neodymium oxides and carbon encapsulated boron doped MgB2 samples, treated by high pressure (1GPa) hot isostatic pressing.

GAJDA Grzegorz¹, MORAWSKI Andrzej², PRESZ Adam², DIDUSZKO Ryszard³, CETNER Tomasz³, HOSSAIN Shahnar³, GAJDA Daniel¹
¹International Laboratory of HMF and LT PAS, Poland, ²Institute of High Pressure Physics PAS, Poland, ³Tele and Radio Research Institute, Poland, ⁴University of Wollongong and Institute for Superconducting and Electronic Materials, Australia

The influence of stearic acid addition on the MgB2 superconducting properties

DA SILVA Lucas¹, VIANNA Alan¹, MANESCO Antônio¹, HELLSTROM Eric², RODRIGUES JR Durval³
¹Universidade de São Paulo, Brazil, ²Florida State University, United States

Trapped field properties of doped MgB2 superconducting bulk magnets

YAMAMOTO Akiyasu¹, IWASE Kazuyuki², SHIMOYAMA Jun-Ichi², KISHIO Kohji²
¹The University of Tokyo, JST-PRESTO, Japan, ²The University of Tokyo, Japan

Calcia-stabilized zirconia buffer layers on a mismatched interface of a {110} <001> textured iron tape toward a development of low-cost coated conductors

ICHINOSE Ataru¹, WATANABE Ken², NAKA Junpei², UCHIMA Takayuki¹, HORII Shigeru², DOI Toshiya²
¹Central Research Institute of Electric Power Industry, Japan, ²Kyoto University, Japan

Influence of Configuration between Target and Coating Sample on Crystal Orientation of Sputtered CeO2 film on Ni/Cu/Stainless Steel Clad Substrate for Superconductive wire

HASHIMOTO Yusuke¹, KUROKAWA Tepppei¹, OKAYAMA Hironao¹, NAGAISHI Tatsuki², OKI Kotaro², HONDA Genki²
¹Toyo Kohan Co., Ltd., Japan, ²Sumitomo Electric Industries, Ltd., Japan
Study on Fabrication of Ni5W long Tapes with CeO2 Buffer layer by Reel-to-Reel Route
MA Lin1, TIAN Hui2, ZHAO Yue3, SUO Hongli1, GRIVEL Jean-Claude2
1Beijing University of Technology, China, 2Technical University of Denmark, Denmark

Development of biaxially textured LZO film on cold-rolled metal substrate
VANNOZZI Angelo1, AUGIERI Andrea1, CELENTANO Giuseppe1, RUFOLONI Alessandro1, MANCINI Antonella1, PINTO Valentina1, RIZZO Francesco1, ANGRISANI ARMEANIO Achille1, GALLUZZI Valentina1, FABBRI Fabio1, PETRISOR Traian2
1ENEA, Italy, 2Technical University of Cluj-Napoca, Romania

Study of MgO/TiN Architecture for YBCO Coated Conductor Development
MANCINI Antonella1, VANNOZZI Angelo1, ANGRISANI ARMEANIO Achille1, RUFOLONI Alessandro1, RIZZO Francesco1, PINTO Valentina1, GALLUZZI Vaòlentina1, AUGIERI Andrea1, BAUER Markus2, MELEDIN Alexander3, VAN TENDELOO Gustaa3, CELENTANO Giuseppe1
1ENEA, Italy, 2THEVA, Germany, 3University of Antwerp, Belgium

Inkjet-printed planarization layers on rough metallic tapes for cost reduction of ABAD-based coated conductors
CALLEJA Albert1, VILARDELL Marta1, VLAD Valentina Roxana1, SINES Xavier1, RICART Susagna2, GRANADOS Xavier2, PUIG Teresa2, OBRADORS Xavier2, KIRCHHOFF Lutz2, RUTT Alexander2, USOSKIN Alexander3
1OXOLUTIA SL, Spain, 2ICMAB-CSIC, Spain, 3Bruker HTS, Germany

Surface acoustic waves – a new thin film deposition approach for coated conductors
KIRCHNER Anke1, WINKLER Andreas1, HOLZAFEL Bernhard2, HUHNE Ruben2
1Leibniz-Institute IFW Dresden, Germany, 2Karlsruhe Institute of Technology (KIT), Germany

Study on the influence of elements diffusion behavior on properties of Ni-8at.%W/Ni-12at.%WNi-8at.%W alloy composite substrates with different layer-thickness ratios
MENG Yichen1
1Beijing University of Technology, China

Microstructure and texture evolution during annealing of a heavily cold-rolled Cu-45at.%Ni alloy
TIAN Hui1, MA Lin1
1Beijing University of Technology, China

Nucleation and texture growth of IBAD-MgO and SDP-Y2O3 buffer templates for coated conductors
JIN Hye-Jin1, JO William1, JO Janghyun2, KIM Miyoung2, KANG Boo Min2, KIM Gwan-Tae3, KO Rock-Kil1, JO Young-Sik3, HA Dong-Woo3
1Ewha Womans University, South Korea, 2Seoul National University, South Korea, 3Korea Electrotechnology Research Institute, South Korea
Effect of the diffusion annealing and design of internal-tin wires on the structure and morphology of superconducting Nb3Sn layers
DERYAGINA Irina1, POPOVA Elena1, PATRAKOV Evgeny1, VA LOVA-ZAHAREVSKAYA Evgeniya1
1M.N. Miheev Institute of Metal Physics, UB of RAS, Russia

Critical Current Characterization under Pure Bending Strains of Pre-bent Cu-Nb/Nb3Sn Strands for Practical React-and-Wind Process
SUGIMOTO Masahiro1, TSUBOUCHI Hirokazu1, ENDOH Sakaru1, TAKAGI Akira1, WATANABE Kazuo2, AWAJI Satoshi2, OGURO Hidetoshi2
1Furukawa Electric Co. Ltd., Japan, 2Tohoku University, Japan

Characterization of the reaction path in Nb3Sn Powder in Tube (PIT) wires with the goal of obtaining maximum Jc at small def
SEGAL Christopher1, TARANTINI Chiara1, LEE Peter1, LARBALESTIER David1
1Florida State University, United States

Approach to Optimization of Internal Tin Nb3Sn Strands with Enhanced Critical Current Density and Mechanical Strength
PANTSYRNY Victor1, KRAINEV Alexey1, SERGEEV Vladimir1, ABDYUHANOV Ildar1, KARASEV Yuriy1
1Bochvar Institute of Inorganic Materials, Russia, 2SPC Nanoelectro, Russia

Preparation investigation of wire-in-channel NbTi/Cu superconducting wire with high Jc
GUO Qiang1, YAN Kaijuan1, WANG Qingxiang1, LIU Jianwei1, LI Jianfeng1, LIU Xianghong1, FENG Yong1
1National Engineering Laboratory for Superconducting Materials Preparation, China

V-I measurements up to 2 KA on short sample flattened Rutherford NbTi cables
RAINE Mark1, FAIR Ruben2, HAMP SHIRE Damian1
1European Fusion Energy Reference Laboratory, United Kingdom, 2Thomas Jefferson National Accelerator Facility, United States

Conductor Performance of CBCN2 and CBCN3 Samples for ITER Correction Busbar conductor
LIU Bo1, WU Yu1, Qi/N Jinggang1, DEVRAUD Arnaud2, BRUZZONE Pierluigi3, STEPANOV Boris3, SEDLAK Kamil3, LONG Feng1, LIU Huajun1, LIU Fang1, YU Min1
1Institute of Plasma Physic, China, 2Magnet Division, ITER Organization, France, 3Centre de Recherches en Physique des Plasmas, Switzerland
Acoustic emission testing for high temperature superconductors tapes
KISIEL Anna¹, WOZNY Leszek¹
¹Wroclaw University of Technology, Poland

Effect of random position shifts of strands on the transverse mechanical properties of REBCO Roebel cables
LONG Nicholas¹, TALANTSEV Evgeny¹, BADCOCK Rodney¹, BOULOUKAKIS Konstantinos¹
¹Victoria University of Wellington, New Zealand

Transverse loading experiments on REBCO Roebel cables with and without impregnation
OTTEN Simon¹, DHALLÉ Marc², GAO Peng², WESSEL Sander², KARIO Anna¹, KLING Andrea¹, GOLDAKER Wilfried¹
¹Karlsruhe Institute of Technology (KIT), Germany, ²University of Twente, Netherlands

In-situ compression tests in MgB2 wires
COMMISSO Maria¹, MAIRE Eric¹, BUFFIERE Jean-Yves¹, BRUZEK Christian-Eric²
¹University of Lyon - INSA de Lyon, France, ²Nexans, France

Inverse problem solution algorithms for current density distribution calculation in different HTS tape configurations basing on minimum self-magnetic field measurements
SHYSHKIN Oleg¹, KAZARINOV Yurij¹, TALLOULI Mohamed², FAMAKINWA Tosin³, YAMAGUCHI Satarou¹
¹V.N. Karazin Kharkiv National University, Ukraine, ²Chubu University, Japan, ³University of Western Sydney, Australia

2A-WT-P-04 Sep 8 - Afternoon (2:00-4:00 PM)
Wires and Tapes - Coated conductor processing

Property improvement of 600 nm thick YBCO superconducting films fabricated using a Pb-modified MOD method
FENG Feng¹, HUANG Rongxia², QU Timing¹, ZHU Yuping¹, HAN Zhenghe¹
¹Tsinghua University, China, ²Guangdong University of Technology, China

Standard entropy change and enthalpy change of the YBCO formation reaction in MOD process obtained by in situ resistance measurement
QU Timing¹, ZHU Yuping¹, FENG Feng¹, LIN Guan¹, DENG Shutong¹, ZENG Pan¹, HAN Zhenghe¹
¹Tsinghua University, China

Minimization of BaHfO3 flux pinning centers in YBa2Cu3Oy films by metal organic deposition process
TERANISHI Ryo¹, HORITA Hiroshi¹, OOTAGURO Kenya¹, YAMADA Kazuhiro¹, KANEKO Kenji¹, YOSHIZUMI Masateru¹, IZUMI Teruo²
¹Kyushu University, Japan, ²International Superconductivity Technology Center, Japan
Tape self-heating for MOCVD of double-sided coated conductor  
TAO Bowen\textsuperscript{1}  
\textsuperscript{1}University of Electronic Science and Technology of China, China

Reflectometric analysis of coated conductor architectures as a useful quality control tool  
VLAD Valentina Roxana\textsuperscript{1}, VILARDELL Marta\textsuperscript{1}, MOLINA Edgar\textsuperscript{3}, PUIG Teresa\textsuperscript{2}, OBRADORS Xavier\textsuperscript{2}, CALLEJA Albert\textsuperscript{1}  
\textsuperscript{1}OXOLUTIA SL, Spain, \textsuperscript{2}ICMAB-CSIC, Spain

High – efficient copper shunt deposition technology on REBCO tape surfaces  
FLOEGEL-DELOR Uta\textsuperscript{1}, RIEDEL Thomas\textsuperscript{1}, ROTHFELD Rolf\textsuperscript{1}, SCHIRRMEISTER Petter\textsuperscript{1}, KÖNNIG Rene\textsuperscript{1}, WERFEL Frank\textsuperscript{1}  
\textsuperscript{1}Adelwitz Technologiezentrum GmbH (ATZ), Germany

Fabrication of the all-chemical growth of CSDYBCO/PADCGO/ABA\textsubscript{DYSZ}/SS coated conductors  
MOS Ramona\textsuperscript{1}, NASUI Mircea\textsuperscript{1}, PETRISOR Traian Jr.\textsuperscript{1}, MESAROS Amalia\textsuperscript{1}, GABOR Mihai\textsuperscript{1}, POP Cornelia\textsuperscript{2}, CALLEJA Albert\textsuperscript{3}, USOSKIN Alexander\textsuperscript{4}, PUIG Teresa\textsuperscript{2}, OBRADORS Xavier\textsuperscript{2}, CIONTEA Lelia\textsuperscript{1}, PETRISOR Traian\textsuperscript{1}  
\textsuperscript{1}Technical University of Cluj-Napoca, Romania, \textsuperscript{2}Institut de Ciència de Materials de Barcelona, Spain, \textsuperscript{3}OXOLUTIA SL, Spain, \textsuperscript{4}Bruker HTS, Germany

2A-WT-P-05 Sep 8 - Afternoon (2:00-4:00 PM)  
Wires and Tapes - Coated conductor mechanical properties

Torsional dependence of the critical current in 2G tapes  
SOTELO Guilherme\textsuperscript{1}, GRANADOS Xavier\textsuperscript{2}, LOPEZ LOPEZ Jose\textsuperscript{3}, CARRERA M.\textsuperscript{4}  
\textsuperscript{1}Fluminense Federal University, Brazil, \textsuperscript{2}Institut de Ciència de Materials de Barcelona, Spain, \textsuperscript{3}Universitat Politècnica de Catalunya, Spain, \textsuperscript{4}Universitat de Lleida, Spain

Experimental study of electromechanical properties of 2G HTS wires under different mechanical loading conditions  
ZHANG Yifei\textsuperscript{1}, HAZELTON Drew\textsuperscript{1}, TANSKI Joe\textsuperscript{1}, KELLEY Randall\textsuperscript{1}, SAKAMOTO Hisaki\textsuperscript{1}  
\textsuperscript{1}SuperPower Inc., United States

Assessment of critical currents in coated conductors at low temperatures  
FISCHER David\textsuperscript{1}, PROKOPEC Rainer\textsuperscript{1}, KAGERBAUER Daniel\textsuperscript{1}, ECKHARDT Christian\textsuperscript{1}, EISTERER Michael\textsuperscript{1}  
\textsuperscript{1}Atominstitut, Vienna University of Technology, Austria

HTS coated conductors: mechanical properties; role of substrate features  
RUTT Alexander\textsuperscript{1}, KIRCHHOFF Lutz\textsuperscript{1}, STROEMER Jan\textsuperscript{1}, USOSKIN Alexander\textsuperscript{1}  
\textsuperscript{1}Bruker HTS, Germany
The role of a-axis grains in the transition to the normal state of 2G-coated conductors induced by high current densities
BERNSTEIN Pierre¹, HARNOIS Christelle¹, NOUDEM Jacques¹, THIMONT Yohann¹, VEIRA Jose-Antonio², VIDAL Félix²
¹Université de Caen-Basse-Normandie, France, ²Universidade de Santiago de Compostela, Spain

Two level undercut-profile Ni-W substrate for filamentary coated conductors
WULFF Anders¹, MISHIN Oleg¹, ZHAO Yue¹, GRIVEL Jean-Claude¹
¹Technical University of Denmark, Denmark

Low AC loss inkjet-printed multifilamentary YBCO coated conductors
HOPKINS Simon¹, MITCHELL-WILLIAMS Thomas³, VANDEN BUSSCHE Dries¹, CALLEJA Albert², VLAD Valentina², VILARDELL Marta², GRANADOS Xavier², PUIG Teresa³, OBRADORS Xavier³, USOSKIN Alexander³, SOLOVIOV Mykola³, VOJNČIAK Michael³, GÖMÖRY Fedor³, VAN DRIESSCHE Isabel³, BÄCKER Michael³, GLOWACKI Bartek³
¹University of Cambridge, United Kingdom, ²OXOLUTIA SL, Spain, ³ICMAB-CSIC, Spain, ⁴Bruker HTS, Germany, ⁵Institute of Electrical Engineering, SAS, Slovakia, ⁶Ghent University, Belgium, ⁷Deutsche Nanorschicht GmbH, Germany

High field Ic characterisations of commercial HTS conductors
MIYOSHI Yasuyuki¹, NISHIJIMA Gen¹, KITAGUCHI Hitoshi¹, CHAUD Xavier²
¹NIMS, Japan, ²LNCMI-CNRS / Univ. Grenoble Alpes, France

Frequency effect on shielding quality of open and closed superconducting magnetic shields made of superconducting tapes
TOMKÓW Łukasz¹
¹Wroclaw University of Technology, Poland

Towards uniform trapped field magnets using Roebel cable offcuts to create stacks of tape with different stacking arrangements
MITCHELL-WILLIAMS Thomas¹, PATEL Anup¹, BASKYS Algirdas¹, HOPKINS Simon¹, KARIO Anna¹, GOLDACKER Wilfried¹, GLOWACKI Bartek³
¹University of Cambridge, United Kingdom, ²Karlsruhe Institute of Technology (KIT), Germany

Characterization of multi-layered MOCVD-YBCO/IBAD 2G HTS wires with transport critical current and magnetization measurements
KAUL Andrey¹, SCHUKIN Alexander¹, MARKELOV Anton¹, MOLODYK Alexander¹, SAMOILENKOV Sergey¹, RUDNEV Igor², ABIN Dmitriy¹, MINEEV Nikolay²
¹SuperOx, Russia, ²National Research Nuclear University MEPhI, Russia
Tetrahedral Modelling Method for Inductance Extraction of Complex 3D Superconducting Structures
JACKMAN Kyle\textsuperscript{1}, FOURIE Coenrad\textsuperscript{1}
\textsuperscript{1}Stellenbosch University, South Africa

Study on energy dissipation in adiabatic quantum-flux-parametron logic at finite temperature
TAKEUCHI Naoki\textsuperscript{1}, YAMANASHI Yuki\textsuperscript{1}, YOSHIKAWA Nobuyuki\textsuperscript{1}
\textsuperscript{1}Yokohama National University, Japan

Creation of a Logic Simulation Model for Adiabatic Quantum Flux Parametron Logic
XU Qiuyun\textsuperscript{1}, AYALA Christopher\textsuperscript{1}, TAKEUCHI Naoki\textsuperscript{1}, ORTLEPP Thomas\textsuperscript{1}, YOSHIKAWA Nobuyuki\textsuperscript{1}
\textsuperscript{1}Yokohama National University, Japan, \textsuperscript{2}CiS Research Institute for Microsensor Systems Gmbh, Germany

Josephson oscillation phase-locking in parallel resonance peak
KORNEV Victor\textsuperscript{1}, KOLOTINSKIY Nikolay\textsuperscript{1}, LEVOCHKINA Anna\textsuperscript{1}
\textsuperscript{1}Lomonosov Moscow State University, Russia

Numerical simulation of HTS dc-SQUID by FEM coupling with circuit equation taking into account phase difference of Josephson junction
NOGUCHI So\textsuperscript{1}, TERAUCHI Naoya\textsuperscript{1}
\textsuperscript{1}Hokkaido University, Japan

Lattices of ultracold atom traps over nano- and mesoscopic superconducting disks
SOKOLOVSKY Vladimir\textsuperscript{1}, PRIGOZHIN Leonid\textsuperscript{1}
\textsuperscript{1}Ben-Gurion University of the Negev, Israel

Biologically Inspired Circuits Based on Superconductive Electronics
TOEPFER Hannes\textsuperscript{1}, KRAUSSE Dominik\textsuperscript{1}
\textsuperscript{1}Technische Universität Ilmenau, Germany

Self-excited motion of vortices in superconducting nanostrips with holes
MAWATARI Yasunori\textsuperscript{1}, KASHIWAYA Satoshi\textsuperscript{1}
\textsuperscript{1}National Institute of Advanced Industrial Science and Technology, Japan

Numerical analysis on the influence of the circuit parameters on the operation of a quasi-one-junction SQUID comparator
MIYAJIMA Shigeyuki\textsuperscript{1}, NAKAYAMA Hirotaka\textsuperscript{1}, ISHIDA Takekazu\textsuperscript{1}
Controllable sign-change of the resistance in three-terminal nanojunctions with superconducting lead

DOMANSKI Tadeusz¹, WYSOKINSKI Karol¹, MICHALEK Grzegorz², BULKA Bogdan²

¹Marie Curie-Sklodowska University, Poland, ²Polish Academy of Sciences, Poland

Electronics - SQUIDs & SQIFs III

HTS bi-SQUID with bi-crystal Josephson junctions

SOLOVIEV Igor¹, KLENOV Nikolay¹, KORNEV Victor¹, WANG Xu², SUN Liang², HE Yusheng²

¹Lomonosov Moscow State University, Russia, ²Institute of Physics, Chinese Academy of Sciences, China

Fast and precision detection of magnetic relaxation using HTS-SQUID based rotating-sample magnetometer with multiple detection coils

SAKAI Kenji¹, WATANABE Yuuta¹, SAARI Mohd Mawardi¹, KIWA Toshihiko¹, TSUKADA Keiji¹

¹Okayama University, Japan

Size Effect Impact on Active Superconductor Antenna Characteristics

KORNEV Victor¹, KOLOTINSKIY Nikolay¹, SHARAFIEV Alexey¹, MUKHANOVOleg²

¹Lomonosov Moscow State University, Russia, ²Hypres Inc., United States

Analysis of high-Tc rf SQUIDs in nonhysteretic mode based on the harmonics of its flux-to-voltage characteristics

XU Jie¹, BENDEN Christian¹, ZHANG Yi¹, KRAUSE Hans-Joachim¹

¹Forschungszentrum Jülich, Germany

NDE System Utilizing Robust HTS-SQUID Magnetometer for Use in Unshielded Environments

HATSUKADE Yoshimi¹, TANAKA Saburo²

¹Kinki University, Japan, ²Toyohashi University of Technology, Japan

Influence of dielectric material and topology on the operation of the resonator tank circuits of RF SQUIDs

KALANTARI Nafise¹, SHANEHSAZDEH Faezeh¹, FARDMANESH Mehdi¹

¹Sharif University of Technology, SERL, Iran

Dynamic Nuclear Polarization at less than Earth’s magnetic field

LEE Seong-Joo¹, SHIM Jeong Hyung¹, KIM Kiwoong¹, YU Kwon Kyu¹, HWANG Seong-Min¹

¹Korea Research Institute of Standards and Science, South Korea

Proton spin echo magnetometer with SQUID-detected NMR system at KRISS

SHIM Jeong Hyung¹, KIM Kiwoong¹, SEONG-JOO Lee¹, SEONG-MIN Hwang¹, KWON-KYU Yu¹

¹Korea Research Institute of Standards and Science, South Korea
Characterisation of nanoSQUIDs in magnetic fields
KOEHN Claudia¹, BECHSTEIN Sylke¹, STORM Jan-Hendrik¹, KIELER Oliver¹, KOHLMANN Johannes¹, WEIMANN Thomas², SCHURIG Thomas³
¹Physikalisch-Technische Bundesanstalt, Germany

Ultra-low noise SQUID magnetometer
SCHMELZ Matthias¹, ZAKOSARENKO Viatcheslav², CHWALA Andreas¹, SCHOENAU Thomas¹, STOLZ Ronny¹, ANDERS Solveig¹, LINZEN Sven¹, MEYER Hans-Georg¹
¹Leibniz Institute of Photonic Technology, Germany, ²Supracon AG, Germany

Secondary SQUID used as tunable Josephson junction in a Double-SQUID device
CRÉTÉ Denis¹, LEMAÎTRE Yves¹, MARCILHAC Bruno¹, OUANANI Saphia¹, KERMORVANT Julien², BERGEAL Nicolas², LESUEUR Jérôme³, ULYSSE Christian³, MAILLY Dominique³
¹THALES, France, ²THALES Communication Systems, France, ³CNRS, France

Magnetic field noise investigation for site selection of a SQUID-based Earth magnetic field recording station
BOZBEY Ali¹, BALABAN Deniz¹, RAZMKHAH Sasan¹, FEBVRE Pascal², CELIK Cengiz³, GAFFET Stéphane⁴, DI BORGO Elisabeth⁵
¹TOBB University of Economy and Technology, Turkey, ²University Savoie Mont Blanc, France, ³Bogazici University, Turkey, ⁴Laboratoire Souterrain à Bas Bruit, France, ⁵Université d'Avignon, France

Compensation of the earth filed fluctuation in TEM surveying with a SQUID magnetometer sensor
LIU Yang¹, RONG Liangliang², CHANG Kai², ZHANG Yi², XIE Xiaoming¹
¹ShanghaiTech University, China, ²Chinese Academy of Sciences, China

Investigation of the Operating Range of a Josephson Comparator
SHELLY Connor¹, WILLIAMS Jonathan¹, ADAN Abu², ROMANS Ed²
¹National Physical Laboratory, United Kingdom, ²London Centre for Nanotechnology, United Kingdom

Spin-triplet superconducting current in metal-oxide heterostructures with composite ferromagnetic interlayer
CONSTANTINIAN Karen¹, OVSYANNIKOV Gennady¹, KISLINSKI Yuli², SHADRIN Anton³, KALABUKHOV Alexei³, MUSTAFA Luqman³, KHAYDUKOV Yury⁴, WINKLER Dag⁴
¹Kotel’nikov IRE RAS, Russia, ²Chalmers University of Technology, Sweden, ³Max-Planck Institute for Solid State Research, Germany
Planar hybrid Josephson junctions based on Ba-122 single crystals
HASAN Noor¹, DÖRING Sebastian¹, SCHMIDT Stefan¹, SCHMIDL Frank¹, TYMPEL Volker¹, SEIDEL Paul¹, WOLF Thomas²
¹Friedrich Schiller University of Jena, Germany, ²Karlsruhe Institute of Technology (KIT), Germany

Nucleation of superconducting domains in thin s-layers of S-F/N-sIS Josephson devices
BAKURSKIY Sergey¹, KLENOV Nikolay², SOLOVIEV Igor², KUPRIYANOV Mikhail³, GOLUBOV Alexander³
¹Moscow Institute of Physics and Technology, Russia, ²Lomonosov Moscow State University, Russia, ³University of Twente, Netherlands

The solitary superconductivity in dirty ferromagnet-superconductor heterostructures for the spin valve applications
PROSHIN Yurii¹, AVDEEV Maxim¹
¹Kazan Federal University, Russia

Growth and Characterization of NiCu ferromagnetic films and superconductor/ferromagnet bilayers
LI Feng¹, HAN Haoxuan¹, JIN Hua¹, GAO Haobin¹, ZHANG Lu¹, PENG Wei¹, WANG Zhen¹
¹Shanghai Institute of Microsystem & Information Technology, China

Embedding superconducting nanowires into quantum circuits with a neon focused ion beam
BURNETT Jonathan¹, SAGAR James¹, WARBURTON Paul¹, FENTON Jonathan¹
¹University College London, United Kingdom

Transport properties on epitaxial superconducting rhenium films and wires
RATTER Kitti¹, DELSOL Benjamin², DUMUR Etienne², ROCH Nicolas², GUICHARD Wiebke², HASSELBACH Klaus², GILLES Bruno¹, NAUD Cecile², BUISSON Olivier²
¹SIMaP and Institut Neel, France, ²Institut Neel CNRS, France

A current-crowding cryotron
MCCAUGHAN Adam¹, ZHAO Qingyuan¹, BERGGREN Karl¹
¹MIT, United States

Investigation of Characteristics of Superconducting-Ferromagnetic Transistors
NEVIRKOVETS Ivan¹, CHERNYASHEVSKYY Oleksandr², MUKHANOV Oleg³, PROKOPENKO Georgy¹, KETTERSON John²
¹HYPRES Inc., United States, ²Northwestern University, United States

Josephson junctions with a PdNi ferromagnetic barrier layer for integrated circuits
TANIGUCHI Soya¹, ISHIKAWA Kouta¹, AKAIKE Hiroyuki¹, FUJIMAKI Akira¹
¹Nagoya University, Japan
High sensitivity light detectors for cryogenic experiments: the CALDER project.
CRUCIANI Angelo\(^1\)
\(^1\)Dept. of Physics, Sapienza, University of Rome, Italy

Optical Evaluation of Microwave Kinetic Inductance Detectors for Fourier Transforms Terahertz Spectroscopy
ARIYOSHI Seiichiro\(^1\), NAKAJIMA Kensuke\(^2\), SAITO Atsushi\(^2\), TAINO Tohru\(^3\), YAMADA Hironobu\(^2\), OHSHIMA Shigetoshi\(^2\), OTANI Chiko\(^1\), BAE Jongsuck\(^3\), TANAKA Saburo\(^1\)
\(^1\)Toyonohasi University of Technology, Japan, \(^2\)Yamagata University, Japan, \(^3\)Saitama University, Japan, \(^4\)RIKEN, Japan, \(^5\)Nagoya Institute of Technology, Japan

Optimization of the Cryogenic Kinetic-Inductance Bolometer (KIBO)
ARNDT Matthias\(^1\), GROETSCH Christopher\(^1\), KUZMIN Artem\(^1\), ZIEGER Gabriel\(^2\), WUENSCHE Stefan\(^1\), MAY Torsten\(^2\), MEYER Hans-Georg\(^2\), SIEGEL Michael\(^1\)
\(^1\)Karlsruhe Institute of Technology (KIT), Germany, \(^2\)Leibniz Institute of Photonic Technology, Germany

Evaluation of amorphous WxSi1-x material parameters relevant for the detection of single photons with infrared and X-ray energies
ZHANG Xiaofu\(^1\), ENGEL Andreas\(^1\), SCHILLING Andreas\(^1\)
\(^1\)Universität Zürich, Switzerland

The position-dependence of the threshold current in superconducting nanowire single-photon detectors
ENGEL Andreas\(^1\), RENEMA Jelmer\(^2\), WANG Qiang\(^2\), GAUDIO Rosalinda\(^1\), KOMEN Irina\(^2\), OP ’T HOOG Koen\(^3\), SAHIN Dondu\(^4\), SCHILLING Andreas\(^1\), VAN EXTER Martin\(^2\), FIORE Andrea\(^2\), DE DOOD Michiel\(^2\)
\(^1\)University of Zurich, Switzerland, \(^2\)Leiden University, Netherlands, \(^3\)Eindhoven University of Technology, Netherlands, \(^4\)University of Bristol, United Kingdom

Effects of Twin Boundaries on Spontaneous Half-quantized Vortices in Superconducting Composite Structures (d-dot’s)
NORIO Fujita\(^1\), MASARU Kato\(^1\), TAKEKAZU Ishida\(^1\)
\(^1\)Osaka Prefecture University, Japan

Detector tomography of WSi nanowire superconducting single photon detectors
GAUDIO Rosalinda\(^1\), RENEMA Jelmer\(^2\), ZHOU Zili\(^3\), WANG Qiang\(^2\), VERMA Varun\(^7\), LITA Adriana\(^8\), SHAINLINE Jeffrey\(^7\), STEVENS Martin\(^3\), MIRIN Richard\(^3\), NAM Sae Woo\(^3\), DE DOOD Michiel\(^2\), VAN EXTER Martin\(^2\), FIORE Andrea\(^2\)
\(^1\)COBRA Research Institute, Netherlands, \(^2\)Huygens-Kamerlingh Onnes Laboratory, Leiden University, Netherlands, \(^3\)National Institute of Standards and Technology, United States
An automated, cryogen-free ADR cryostat for superconducting detector applications
CARPENTER Matthew¹, CANTOR Robin¹
¹STAR Cryoelectronics, United States

Demonstration and Improvement of Superconducting Time-of-Flight Mass Spectrometry Systems Operated in a Cryo-Cooler
SANOKYOSuke¹, SHIMODATOMoki¹, YAMANASHIYuki¹, YOSHIKAWA Nobuyuki¹, ZEN Nobuyuki², OHKUBOMasa²
¹Yokohama National University, Japan, ²AIIST, Japan

The Cryogenic Readout Integrated Circuit for SNSPDs Based on 0.18 um SiGe BiCMOS Process
WANCHao¹, PEIYufeng¹, WANGChao², MAJie², KANGLin¹, WUPeiheng¹
¹Nanjing University, China, ²China Key System & Integrated Circuit Co., Ltd., China

Superconductor/Ferromagnet nanowires for Optical Photon Detection
PEPE Giovanni Piero¹, PARLATOLoredana¹, NASTI Umberto², CRISTIANORoberto³, EJRNAAES Mikkel³, MYOREN Hiroaki⁴, TAINOTohru⁴, SOBOLEWSKIRoman⁵
¹Univ. degli Studi di Napoli "Federico II" and CNR, Italy, ²Univ. degli Studi di Napoli "Federico II", Italy, ³CNR-SPIN, Italy, ⁴University of Saitama, Japan, ⁵University of Rochester, United States

Study of superconducting bilayer for Microwave Kinetic Inductance Detectors (MKIDs) for astrophysics
DOMINJON Agnes¹
¹National Astronomical Observatory of Japan (NAOJ), Japan

Superconducting nanowire single photon detectors at 1550 nm wavelength with distributed Bragg reflector
ZHANGWeijun¹, LIHao¹, YOU Lixing¹, HE Yuhao¹, ZHANGLu¹, WANG Zhen¹
¹Shanghai Institute of Microsystem & Information Technology, China

Data acquisition system for kinetic-inductance detectors
ARNDT Matthias¹, BERGBenjamin¹, SCHWENKFerdinand¹, HOFHERRMatthias¹, WUNSCH Stefan¹, SIEGEL Michael¹
¹Karlsruhe Institute of Technology (KIT), Germany

2D THz Imaging System using Spiral-MKID Array
SAITO Atsushi¹, NAKAJIMA Kensuke¹, OGAWAYuhei¹, OKADAik¹, ARIYOSHISEiichiro², YAMADA Hironobu¹, TTOHRU¹, OTANICHIKO³, OHSHIMASHIGETOŠI²
¹Yamagata University, Japan, ²Toyohashi University of Technology, Japan, ³Saitama University, Japan, ⁴RIKEN, Japan

Transport and magnetic measurements on Bi2Sr2CaCu2O8 nanowire networks prepared via electrospinning
KOBĻISCHKA Michael¹, ZENG Xianlin¹, KARWOTHThomas¹, HAUETThomas¹, HARTMANNUwe¹
¹Saarland University, Germany, ²Université de Lorraine, France
Implementation of a closed cycle refrigerator test system for superconducting stripline detectors
BOZBEY Ali¹, RAZMKHAH Sasan¹, FUJIMAKI Arika²
¹TOBB University of Economy and Technology, Turkey, ²Nagoya University, Japan

A superconducting phase qubit with two internal degrees of freedom
LECOQ Florent¹, POP Ioan¹, DUMUR Etienne¹, NAUD Cecile¹, GUICHARD Wiebke¹, BUISSON Olivier¹
¹Institut NEEL, France

Coherent manipulation of Andreev states in a superconducting atomic contact
JANVIER Camille¹, TOSI Leandro², BRETHEAU Landry¹, GIRIT Caglar¹, STERN Michael¹, BERTET Patrice¹, JOYEZ Philippe¹, VION Denis¹, ESTEVE Daniel¹, GOFFMAN Marcelo¹, POTHIER Hugues¹, URBINA Cristian¹
¹Quantronics group, SPEC, CEA-Saclay, UMR3680, France, ²Centro Atómico Bariloche and Instituto Balseiro, Argentina

Optimization of front-end of the SFQ read-out circuits for Superconducting Stripline Detectors
USENMEZ Kubra¹, BOZBEY Ali¹, TANAKA Masamitsu², FUJIMAKI Akira²
¹TOBB University of Economy and Technology, Turkey, ²Nagoya University, Japan

Effect of Quasiparticles in the Intra-Gap States on the Superconducting Surface Resistance
NOGUCHI Takashi¹, NARUSE Masato², SEKINE Masakazu³, KARATSU Kenichi¹, SEKIMOTO Yutaro³
¹National Astronomical Observatory of Japan, Japan, ²Saitama University, Japan, ³The University of Tokyo, Japan

Photon detectors based on High Tc Superconductors
FEUILLET-PALMA Cheryl¹, BERGEAL Nicolas¹, LESUEUR Jérôme¹
¹LPEM - ESPCI/CNRS/UPMC PSL Research University, France

Critical current analysis of an YBCO insert for ultra-high field all superconducting magnet
LIU Jianhua¹, QIULIANG Wang¹
¹Institute of Electrical Engineering, Chinese Academy of Sciences, China

Study of various ReBCO conductors in long samples under high field with variable divergence, and first pancake tests for the NOUGAT Project
BENKEL Tara¹, BADEL Arnaud¹,², CHAUD Xavier¹,², TIXADOR Pascal², FAZILLEAU Philippe²
¹Univ. Grenoble Alpes ²CNRS, France, ³CEA / IRFU / SACM, France
Test and Analysis of Electromagnetic and Mechanical Properties of HTS Coils

PARK Young Gun, LEE Jeyull, JO Hyun Chul, KIM Ho Min, CHUNG Yoon Do, CHU Yong, YOON Kyung Yong, YOON Yong Soo
1Yonsei University, South Korea, 2Institute for Basic Science, South Korea, 3Jeju National University, South Korea, 4Suwon Science College, South Korea, 5National Fusion Research Institute, South Korea, 6HIN ANSAN UNIVERSITY, South Korea

3D Critical State Model for Large-Scale HTS Magnet with Iron Yoke.

WANG Yawei, HONG Zhiyong, JIN Zhijian, SONG Honghai
1Michigan State University, United States, 2Shanghai Jiao Tong University, China

Practical experience with impact of screening currents on field quality in magnetic resonance applications using HTS magnets

SLADE Robert, PARKINSON Benjamin, BOULOUKAKIS Konstantinos
1Victoria University of Wellington, New Zealand

Magnetic field distribution of YBCO bulk pair with large distance

WEIDNER Markus, HALBEDEL Bernd, RÄDLEIN Eduard
1Technische Universität Ilmenau, Germany

Transient Thermal Stability Analysis of a 35kV HTS Controllable Reactor

WANG Zuoshuai, LI Ren, XUZHI Deng, SHIFENG Shen, YUEJIN Tang, QI Dai
1R&D Center of Applied Superconductivity; State Key Lab. of AEET, China

Measurement of the transverse magnetization of a bulk MgB2 cylinder

STATERA Marco, CIULLO Giuseppe, CONTALBRIGO Marco, SANDORFI Andrew
1Università di Ferrara and INFN, Italy, 2Università di Ferrara, Italy, 3INFN, Italy, 4Jefferson Lab, United States

Study of Electrical Properties on Bi2223 HTS windings under AC/DC operation on Rotating Machine

TSUZUKI Keita, IDA Tetsuya, IZUMI Mitsuru
1National Institute of Technology, Toba College, Japan, 2National Institute of Technology, Hiroshima College, Japan, 3Tokyo University of Marine Science and Technology, Japan

Critical Current Measurement of GdBCO Superconducting Tape Cooled by Liquid Hydrogen under External Magnetic Field

SHIRAI Yasuyuki, YONEDA Kazuya, IMURA Takeshi, YOKOYAMA Shoichi
1Kyoto University, Japan, 2Mitsubishi Electric corp., Japan

Magnetic Field Stability of the Stacked Jointless HTS Coils

LEE Seyeon, KIM Woo-Seok, KIM Yungil, LEE Ji-Young, PARK Sang Ho, HONG Gye-Won, LEE Ji-Kwang, CHOI Kyeongdal
1Korea Polytechnic University, South Korea, 2Woosuk University, South Korea
Observation of screening magnetic field in transition to normal state in GdBCO coil
MA Dongxia¹, MIYOSHI Yasuyuki¹, NISHIJIMA Gen¹, MATSUMOTO Shinji¹
¹National Institute for Materials Science, Japan

Influence of critical current non-uniformity on the performance of HTS coil
GÖMÖRY Fedor³, ŠOUC Ján³, VOJENČIAK Michal³, SOLOVYOV Mykola³
³Institute of Electrical Engineering, SAS, Slovakia

Development of a Roebel-cable-based cos-theta dipole: design and windability of magnet ends
LORIN Clement¹, DURANTE Maria¹, FAZILLEAU Philippe¹, KIRBY Glyn⁴, ROSSI Lucio⁴
⁴CEA, France, ⁵CERN, Switzerland

Platypus Project Insert Magnet System Design at the NHMFL: Monte Carlo Search and Homogeneity Sensitivity Analysis of Parameters
HILTON David¹, TROCIEWITZ Ulf¹, DAVIS Daniel¹, BOSQUE Ernesto⁴, KIM Youngjae¹, MILLER George¹, LARBALESTIER David¹
¹NHMFL, Florida State University, United States

The quench detection system of the high field magnet at Helmholtz Zentrum Berlin
EHMLER Hartmut⁴, KEMPFER Stephan⁴, GERISCHER Sebastian⁴, SMEIBDL Peter⁴
⁴Helmholtz Zentrum Berlin, Germany

The usage of cold spaying of high heat capacity coatings for the increase of low-Tc superconductors stability
KRUGLOV Sergey⁴, AKIMOY Igory², KEILIN Victor⁴, KOVALEV Ivan⁴, KRIUKOV Dmytro⁴, TITOY Alexander², SHOKOLIN Sergey², SHUTOVA Darya²
⁴Kurchatov’s Institute, Russia, ²Bochvar Institute, Russia

Preliminary conception design of Quench Detection System for CFETR CSMC
HU Yan², WANG Teng¹
¹Institute of Plasma Physics, CAS, China

Evaluation of electrical and magnetic characteristics of superconducting coils, taking into consideration some insulation settings.
MONTEIRO DIAS Fernando⁴, SOTELO Guilherme⁴, POLASEK Alexander²
²Universidade Federal Fluminense, Brasil, ²Centro de Pesquisas de Energia Elétrica, Brasil
Strand level modeling and experiments on pulsed field stability and AC loss of Nb3Sn CICCs
BAGNI Tommaso¹, DIJKSTRA Marcel¹, DEVRED Arnaud², NIJHUIS Arend¹
¹University of Twente, Netherlands, ²ITER Organization, France

Magnetic Field Stability test of LTS MRI Magnet Excited by Highly-Stabilized Power Supply
YOSHIKAWA Masaki¹, YONEMURA Naoki¹, YACHIDA Takeyuki¹, IMURA Takeshi¹, SHIRAI Yasuyuki¹, YOKOYAMA Syoichi²
¹Kyoto University, Japan, ²Mitsubishi Electric co., Japan

Quench Protection of Superconducting Magnet for Russian Fusion Neutron Source
IVANOV Denis¹
¹NRC "Kurchatov Institute", Russia

Advanced Quench Protection for the Nb3Sn Quadrupoles for the High Luminosity LHC
RAVAIOLE Emmanuelle¹,², DATSKOV Vladimir¹, KIRBY Glyn¹, MACIEJEWSKI Michal³, TEN KATE Herman¹, VERWEIJ Arjan¹
¹CERN, Switzerland, ²University of Twente, The Netherlands, ³Lodz University of Technology, Poland

Quench detection via Rayleigh - scattering based fiber optic distributed sensors
SCURTI Federico¹, ISHMAEL Sasha¹, FLANAGAN Gene², SCHWARTZ Justin¹
¹North Carolina State University, United States, ²Muons Inc., United States

Study on the methods to control the effective number of turns in the non-insulated HTS coils wound with 2G wires
KIM Seokbeom¹, TANAKA Kazuki¹, KANEMOTO Daiseki¹, NOGUCHI So², ISHIYAMA Atsushi³
¹Okayama University, Japan, ²Hokkaido University, Japan, ³Waseda University, Japan

Quench detection characteristics of co-winding method and conditions for quench protection of YBCO coils
NAKAYAMA Daiki¹, TAKAGI Tomohiro¹, TAKAIHIRO Ariyama¹, SASAKI Erika¹, TSUKAMOTO Osami², TAKAO Tomoaki¹, FUKUI Satoshi², MATSUOKA Taro¹
¹Sophia University, Japan, ²Furukawa Electric Co., LTD., Japan, ³Niigata University, Japan

Analysis of limit operation time and quench recovery feature of HTS winding for A 35 kV/3.5 MVA Single Phase HTS-Controllable Reactor
SHEN Shifeng¹, TANG Yuejin¹, WANG Zuoshuai¹, REN Li¹
¹Huazhong University of Science and Technology, China
Enhancements of the Self-Protection Capability of Non-Insulated and Partially-Insulated High Temperature Superconducting Coils
CHAN Wan Kan¹, SCHWARTZ Justin¹
¹North Carolina State University, United States

Detection Method of Local Normal-State Transition in Non-Insulation REBCO Pancake Coil
WANG Tao¹, JIA Yunhao¹, ISHIYAMA Atsushi¹, NOGUCHI So², MONMA Katsutoshi³, WATANABE Tomonori³, NAGAYA Shigeo²
¹Facility of advanced science and engineering, Waseda University, Japan, ²Graduate School of Information Science and Technology Hokkaido University, Japan, ³Chubu Electric Power Co., Inc., Japan

Electrical and Thermal Behaviors of No-Insulation Pancake Coil during a local Normal-State Transition
IKEDA Aika¹, OKI Takahiro¹, WANG Tao¹, ISHIYAMA Atsushi³, MONMA Katsutoshi³, NOGUCHI So³, WATANABE Tomonori³, NAGAYA Shigeo²
¹Waseda University, Japan, ²Hokkaido University, Japan, ³Chubu Electric Power Co., Inc., Japan

Evaluation of Quench Protection for No-Insulation REBCO Pancake Coil
OKI Takahiro¹, IKEDA Aika¹, WANG Tao¹, ISHIYAMA Atsushi³, MONMA Katsutoshi³, NOGUCHI So³, WATANABE Tomonori³, NAGAYA Shigeo²
¹Waseda University, Japan, ²Hokkaido University, Japan, ³Chubu Electric Power Co., Inc., Japan

Quench detection and propagation in non-insulated 2G HTS coils co-wound with a stainless steel tape
NUÑEZ-CHICO Ana¹, MARTINEZ Elena¹, ANGREL Luis¹, NAVARRO Rafael¹
¹ICMA (CSIC - Universidad de Zaragoza), Spain

Study of the protection of HTS non-insulated inserts against quench of an outer magnet
UGLIETTI Davide¹, WESCO Rainer¹, BRUZZONE Pierluigi¹
¹EPFL, Switzerland

Dependence of BSCCO-2223 tape Critical Current and Minimum Quench Energy on the bending radius
BRESCHI Marco¹, CASALI Marco¹, RIBANI Pier Luigi¹, CONTRERAS-CORONA Nancy², TRILLAUD Frederic², NISHIJIMA Gen³
¹University of Bologna, Italy, ²National Autonomous University of Mexico, Mexico, ³National Institute for Materials Science, Japan

Over-current characteristics and electrical stability improvement of no-insulation racetrack-type field magnet for 10 MW-class HTS wind power generator
KIM Hyung-Wook¹, JO Young-Sik², KIM Seog-Whan², KIM Ji Hyung³, KIM Ho Min³, HUR Jin¹
¹University of Ulsan, South Korea, ²Korea Electrotechnology Research Institute, South Korea, ³Jeju National University, South Korea
Improvement of thermal contact between 2G superconducting coils and cooper plates in conduction cooled systems
NÚÑEZ-CHICO Ana¹, REY-GARCÍA Francisco¹, MARTÍNEZ Elena¹, DE LA FUENTE Germán¹, GARCÍA-CANO Irene², DOSTA Sergi², ANGUREL Luis¹
¹ICMA (CSIC-University of Zaragoza), Spain, ²Centre de Projecció térmica, Spain

Quench study for non-insulated 2G HTS coils
ZHANG Min¹
¹University of Bath, UK

3A-LS-P-04 Sep 9 - Afternoon (2:00-4:00 PM)
Large Scale - Magnetic levitation

Modeling the stiffnesses in the PM-HTS levitation system
YANG Yong¹, ZHENG Xiaojing¹
¹School of Mechano-Electronic Engineering, Xidian University, China

Dynamic Characteristics of High Temperature Superconductor and Hydrodynamic Fluid Film Compound Bearings
XU Jimin¹, YUAN Xiaoyang¹, ZHANG Cuiping², MIAO Xusheng²
¹Xi’an Jiaotong University, China, ²Northwest Institute for non-ferrous metal Research, China, ³Xi’an Aerospace Propulsion Institute, China

Optimization of the Superconducting Linear Magnetic Bearing of a MagLev Vehicle
QUÉVAL Loïc¹, SOTELO Guilherme², KHARMIZ Yassin¹, DIAS Daniel², SASS Felipe³, ZERMEÑO Victor⁴, GOTTKEHASKAMP Raimund¹
¹University of Applied Sciences Düsseldorf, Germany, ²Fluminense Federal University, Brazil, ³Federal University of Rio de Janeiro, Brazil, ⁴Karlsruhe Institute of Technology (KIT), Germany

Evaluation of 5 T High-Tc Superconducting coil for Linear Synchronous Motor for High-speed Train
CHANG-YOUNG Lee¹, JIN-HO Lee¹, I-HYUN Kim¹, NAM-PO Kim¹
¹Korea Railroad Research Institute, South Korea

Persistent currents in coils made of coated conductors for the magnetic bearing application
SASS Felipe¹, MARTINS Flávio¹, FONSECA Brayan², SOTELO Guilherme³, DE ANDRADE JUNIOR Rubens¹
¹Rio de Janeiro Federal University, Brazil, ²Fluminense Federal University, Brazil

Architecture of a dispersed array of superconducting magnets for active radiation shielding of a spaceship
LEVIN George¹, CHESNY David¹
¹Florida Institute of Technology, United States

Vibration Reduction of a Rotor Supported by a Superconducting Magnetic Bearing Utilizing an Electromagnetic Shunt Damper
SUGIURA Toshihiko¹
¹Keio University, Japan
Levitating States of Superconducting Rings, Stable to Shift Along Common Axis and to Deflection Angles of Their Axes from It, in Field of Fixed Superconducting Ring
KOZINTSEVA Marina¹, BISHAEV Andrey¹, BUSH Aleksandr², GAVRIKOV Mikhail³, KAMENTSEV Konstantin⁴, SAVELYEV Vyacheslav⁵, SIGOV Aleksandr⁶, SAZONOV Petr⁷, VORONCHENKO Stanislav⁸, OGARKOV Pavel⁹
¹MSTU MIREA, Russia, ²Keldysh Institute of Applied Mathematics RAS, Russia

Magnetic levitation between HTS tape stacks and permanent magnets for rotary bearing applications
PATEL Anup¹, HOPKINS Simon¹, BASKYS Algirdas¹, KALITKA Vladislav¹, MOLODYK Alexander¹, GLOWACKI Bartek¹
¹Cambridge University, United Kingdom, ²SuperOx, Russia

New 3-D analytical calculation of levitation force between permanent magnet and hard type-II superconductor using integral approach
AZZOUDA Asma¹, ALLAG Hicham¹, YONNET Jean-Paul², TIXADOR Pascal²
¹Jijel University, Algeria, ²Université Grenoble-Alpes, France

A superconducting linear actuator for mid-infrared instruments
HIROE Takashi¹, TERACHI Yusuke¹, OHSAKI Hiroyuki¹
¹The University of Tokyo, Japan

Effects of Engine Oil on the Levitation and Guidance Force in the Bulk MgB2 Superconductors
SAVAŞKAN Burcu¹, KOPARAN Ezgi²
¹Karadeniz Technical University, Turkey, ²Bulent Ecevit University, Turkey

Analysis on the Levitation Control of the Electromanetic Suspension System using the HTS coil and control coils
JO Jeong-Min¹, HAN Young-Jae¹, LEE Chang-Young¹, LEE Jin-Ho¹
¹Korea Railroad Research Institute, South Korea

Superconductor joule losses in a zero-field-cooled (ZFC) maglev vehicle
FERNANDES José¹, MONTES Igor¹, SOUSA Ricardo¹, CARDEIRA Carlos¹, BRANCO Paulo¹
¹Universidade de Lisboa, Portugal

Measurements and Analyses of Dynamic Characteristics of HTS Flywheel Energy Storage System
YU Zhiquiang¹, ZHANG Guomin¹
¹Key Lab of Applied Superconductivity Institute of Electrical Engineering, China

Experiments of superconducting Maglev ground transportation
WERFEL Frank¹, FLOEGEL- DELOR Uta¹, ROTHFELD Rolf², RIEDEL Thomas¹, SCHIRRMEISTER Peter¹, KOENIG Rene¹
¹Adelwitz Technologiezentrum GmbH (ATZ), Germany

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Study on the free vibration characteristics of HTS maglev systems running on a ring test line
QIAN Nan1, GOU Yanfeng1, REN Yu1, ZHENG Jun1, DENG Zigang1
1Southwest Jiaotong University, China

Progress towards multilayer coated conductor cylinders for next-generation electrical machines - fabrication, measurement and applications.
MAHER Eamonn1
13-Cs Ltd., United Kingdom

Operation of the MagLev-Cobra prototype in a 200 meters test line
MATTOS L.1, RODRIGUES E.2, COSTA F.2, SOTELO G.3, DE ANDRADE JR. R.2, STEPHAN R.2
1CEFET-MG-Leopoldina, Brazil, 2Federal University of Rio de Janeiro, Brazil, 3Fluminense Federal University, Brazil

Sub-harmonic Resonance Due to a Gap between the Geometric and Magnetic Centers of a Rotor Supported by a Superconducting Magnetic Bearing
SASAKI Hiromu1
1Keio University, Japan

Modelling of bulk superconductor magnetization
AINSLIE Mark1, FUJISHIRO Hiroyuki2, ZOU Jin1
1University of Cambridge, United Kingdom, 2Iwate University, Japan

Experimental determination of the parameters of a combined model of properties of bulk HTS with current and magnetization
KURBATOV Pavel1, KURBATOVA Ekaterina1, KULAYEV Yuri1, SISOEV Mikhail2
1National Research University "MPEI", Russia, 2National Research University "Bauman Moscow State Technical University", Russia

Controlling Hysteresis in Superconducting Constrictions with a Resistive Shunt
KUMAR Nikhil1, WINKELMANN Clemens2, BISWAS Saurav1, COURTOIS Herve2, GUPTA Anjan1
1Indian Institute of Technology, Kanpur, India, India, 2Université Grenoble Alpes/ CNRS, Institut Néel, France

Magnetic shielding properties of MgB2: numerical models and experimental tests
TRUCCATO Marco1,2, AGOSTINO Angelo1,2,3, GOZZELино Laura4, BONINO Valentina1, BONOMETTI Elisabetta1,2,3, PASCALE Lise1,2,3, OPERTI Lorenza1,3, LAVIANO Francesco3, GERBALDO Roberto4, GHIGO Gianluca4
1University of Torino, Italy, 2INFN Sezione, Italy, 3INSTM, Italy, 4Politecnico di Torino, Italy
Quantitative modelling of stacks of SC tape for trapped field applications using temperature, field and angular dependence
BASKYS Algirdas¹, PATEL Anup¹, HOPKINS Simon¹, BARTEK Glowacki¹
¹University of Cambridge, United Kingdom

Numerical Calculations of AC Losses in an HTS Insert Composed of Stacked Pancake Coils for High Field Magnet
KAJIKA W Kazuhiro¹, AWAJI Satoshi², WATANABE Kazuo²
¹Kyushu University, Japan, ²Tohoku University, Japan

Low-TC AC losses models
AUGUSTO Paulo¹, CASTELO-GRANDE Teresa², AUGUSTO Pedro³, BARBOSA Domingos³, ESTEVEZ Angel¹
¹APLICAMA Research Group, Facultad de Ciencias Quimicas, Spain, ²LEPABE, Faculdade de Engenharia da Universidade do Porto, Portugal, ³Science Manager, Faculty of Medicine of Porto University, Portugal

Numerical modelling of stacked array of the bulk HTS for precise field control
KI Toshiteru¹
¹Institute of Advanced Energy, Kyoto University, Japan

Characteristic of wireless power transmission using superconductor coil to improve the efficiency according to the shielding materials
LEE Yu-Kyeong¹, JUNG Byung-Ik¹, JEONG In-Sung¹, CHAI Jeong-Eun¹, JUNG Jae-Jun¹, CHOI Hyo-Sang¹
¹Chosun University, South Korea

Determination of grain sizes and current densities in multiseeded HTS bulk superconductors from trapped field measurements by genetic algorithms
MURTA-PINA Joao¹, PEREIRA Pedro¹
¹Centre of Technology and Systems - UNINOVA, Portugal

3D Volume Integral Formulation Based on Facet Elements for the Computation of AC Losses in Superconductors
RAMDANE Brahim¹, MEUNIER Gérard¹, ESCAMEZ Guillaume², CHADEVBC Olivier², SIROIS Frédéric², BADEL Arnaud³, TIXADOR Pascal¹
¹University Grenoble Alpes / CNRS, France, ²Nexans - University Grenoble Alpes, France, ³Polytechnique Montreal, Canada

3D Modeling of Straight Uncoupled Multifilamentary Superconductors Subjected to Elliptical Field
MAKONG HELL Ludovic¹, KAMENI Abelin², BOUILLAULT Frederic², MASSON Philippe²
¹University of Houston, United States, ²Laboratoire de Génie Electrique de Paris, France

A practical scaling law for AC losses prediction in round superconducting filaments under elliptical field and transport current using artificial neural network
LECLERC Julien¹, MAKONG HELL NKATACK Ludovic¹, LORIN Clément¹, MASSON Philippe¹
¹University of Houston, United States, ²CEA Saclay, France
Management of a fuel cell system to feed a superconducting coil
LINARES Rafael¹, BERGER Kévin¹, HINAJE Melika¹
¹GREEN - University of Lorraine, France

Design of a vector magnet generating up to 3 T with 3 axis orientation
LINARES Rafael¹, BERGER Kévin¹, HINAJE Melika¹, DOUINE Bruno¹, LEVESQUE Jean¹
¹GREEN - University of Lorraine, France

Magnetic shielding properties of a bulk Bi-2223 superconducting hollow cylinder subjected to the magnetic stray field of a nearby magnetic source
HOGAN Kevin¹, WÉRA Laurent¹, FAGNARD Jean-François¹, VANDERHEYDEN Benoît¹, VANDERBEMDEN Philippe¹
¹University of Liège, Belgium

Basic study about an air conditioner which combined the magnetic refrigeration technologies using superconducting magnets with humidity regulation system
HIRANO Naoki¹, WATANABE Tomonori¹, NAGAYA Shigeo¹, TAKAHASHI Mikio⁵, TANAKA Kitoshi⁵, NAGAMINE Ryō⁵, OKAMURA Tetsuji⁵
¹Chubu Electric Power Co., Inc., Japan, ²TAKENAKA Corporation, Japan, ³Tokyo Institute of Technology, Japan

Elemental Development of Metal Melting by Electromagnetic Induction Heating Using Superconductor Coils
WATANABE Tomonori¹, NAGAYA Shigeo¹, HIRANO Naoki¹, FUKUI Satoshi²
¹Chubu Electric Power Co., Inc., Japan, ²Niigata University, Japan

Development of a magnetic separation system of scale in boiler feed water in thermal power plants
OKADA Hidehiko¹, IMAMURA Kenichi², ANDO Tsutomu², HIROTA Noriyuki¹, SHIBATANI Saon³, MIZUNO Nobumi³, NAKANISHI Motohiro³, MISHIMA Fumihito³, AKIYAMA Yoko³, NISHIJIMA Shigeihiro³
¹National Institute of Materials Science, Japan, ²Nihon University, Japan, ³Osaka University, Japan

Designing a cryogenic system for a new magnetic separator and classifier
AUGUSTO Paulo¹, CASTELO-GRANDE Teresa², AUGUSTO Pedro³, BARBOSA Domingos⁴, ESTEVEZ Angel³
¹APLICAMA Research Group, Fac. de Ciencias Químicas, Spain, ²LEPABE, Faculdade de Engenharia da Universidade do Porto, Portugal, ³Science Manager, Faculty of Medicine of Porto University, Portugal

Lower Frequency Wireless Power Transfer via Double-tape HTS Resonant Coils
ZHANG Guomin¹
¹Institute of Electrical Engineering, Chinese Academy of Sciences, China
Control of feeble magnetic fluids flow using superconducting magnet
HIROTA Noriyuki¹, WANG Yan², OKADA Hidehiko¹, SAKKA Yoshio¹
¹National Institute for Materials Science, Japan, ²University of Tsukuba, Japan

3A-LS-P-07 Sep 9 - Afternoon (2:00-4:00 PM)
Large Scale - Power applications of bulks

Magnetic flux dynamics of 0°-0° and 45°-45° bridge-seeded multi-seed YBCO single grains magnetized by pulsed fields
ZOU Jin¹, AINSLIE Mark¹, MOCHIZUKI H², FUJISHIRO H², SHI Yun Hua¹, DENNIS Tony¹, CARDWELL David¹
¹University of Cambridge, United Kingdom, ²Iwate University, Japan

A improvement of the pulsed field magnetization strategy for the superconducting motor
HUANG Zhen¹
¹University of Cambridge, United Kingdom

Static and Dynamic Characteristics of Superconducting Magnetic Force and Hydrostatic Fluid Film Force Compound Bearings
CHEN Runlin¹, XU Jimin¹, YUAN Xiaoyang¹, CHEN Hui², MIAO Xusheng⁴, ZHANG Cuipe⁴
¹Xi’an Jiaotong University, China, ²Xi’an Aerospace Propulsion Institute, China, ³Northwest Institute for non-ferrous metal Research, China

5 MJ flywheel energy storage with HTS magnetic suspension
KOVALEV Konstantin¹, POLTAVETS Vladimir¹, KOLCHANANO Irina¹, ILYASOV Roman¹, FIRSOV Valeriy¹, VERZHBITSKY Leonid², MAYEVSKY Vladimir¹, GERGERT Alexey³
¹Moscow Aviation Institute, Russia, ²JSC “Scientific-Research Institute of Electromechanical Plant, Russia, ³JSC “Gorizont”, Russia, ⁴JSC “VPO” Tochmash”, Russia

The Study on the Segmentation Processing Method of Superconducting Bulk.
YAMAGISHI Kazuhito¹
¹Yokohama National University, Japan

Cryogenic system for a ring-shaped SMB and integration in a ring-spinning tester
BERGER Anne¹, SPARING Maria¹, HOSSAIN Mahmud², BERGER Dietmar¹, FUCHS Günter¹, ABDKADER Anwar¹, CHERIF Chokri², SCHULTZ Ludwig¹
¹IFW Dresden, Germany, ²TU Dresden, Germany

Analysis of the homogeneous and inhomogeneous magnetization process of a superconducting stack
CARRERA Miquel¹, GRANADOS Xavier², LÓPEZ Josep³, AMORÓS Jaume⁴
¹Universitat de Lleida, Spain, ²Institut de Ciència de Materials de Barcelona, ICM, Spain, ³EUETIB (UPC-BarcelonaTech), Spain, ⁴Universitat Politècnica de Catalunya, Spain
Design and Analysis of HTS Variable Flux Halbach Permanent Magnet Machine for Hybrid Electrical Vehicles
WANG Dong¹, LIN Heyun¹, ZHANG Yang¹
¹School of electrical engineering, Southeast University, China

Dynamics of rotating superconducting magnetic bearings in ring spinning
SPARING Maria¹, HOSSAIN Mahmud², BERGER Anne¹, HAMEISTER Stefan¹, BERGER Dietmar², ABDKADER Anwar², FUCHS Günter¹, CHERIF Chokri², SCHULTZ Ludwig¹
¹IFW Dresden, Germany, ²Technical University of Dresden, Germany

YBCO Magnetic Screens to Reduce the Magnetic Flux Dispersion in a Transverse-flux Linear Synchronous Generator
BRANCO Paulo¹
¹Universidade de Lisboa, Portugal

3A-LS-P-08 Sep 9 - Afternoon (2:00-4:00 PM)
Large Scale - Fault Current Limiter II

Optimal Design of a Flux-Coupling-Type SFCL for a Micro-Grid System by Chaos Particle Swarm
CHEN Lei¹, DENG Changhong¹
¹Wuhan University, China

Modification of superconductor modules for SFCL to limit fault current within the first half cycle
PARK Byung Jun¹, YANG Seong Eun¹, KIM Hee Sun¹, PARK Ki Jun¹, YU Seung Duck¹, YOO Je Eun¹, HAN Young Hee², KIM Hye Rim²
¹KEPCO Research Institute, South Korea, ²Korea electric Power Research Institute, South Korea

Introducing Superconducting Fault Current Limiting devices into the Power Grid
TAYLOR Richard³, MOSCROP Jeffrey²
¹Queensland University of Technology, Australia, ²University of Wollongong, Australia

Performance Analysis of Resistive Type Superconducting Fault Current Limiters in Power Systems
ZHANG Xiuchang¹, RUIZ Harold¹, COOMBS Timothy¹
¹University of Cambridge, United Kingdom

Impact of liquid nitrogen cooling on the stability of 2G HTS wire for resistive fault current limiters applications
RUBELI Thomas¹, DUTOIT Bertrand¹, MARTYNOVA Irina², MAKAREVICH Artem², MOLODYK Alexander², SAMOILENKOV Sergey²
¹Ecole Polytechnique Fédérale de Lausanne, Switzerland, ²SuperOx, Russia

Tests of the 15 kV class coreless superconducting fault current limiter
KOZAK Janusz¹, MAJKA Michal¹
¹Electrotechnical Institute, Poland
Integrated Control Method for the Active Superconducting Current Controller
JING Shi¹, KANG Gong¹, YANG Liu¹, XIAO Zhou¹, LI Ren¹, YUEJIN Tang¹, JINDONG Li¹
¹Huazhong University of Science and Technology, China

Studies on the Application of R-SFCL in the VSC-based DC Distribution System
LI Bin¹, HE Jiawei¹
¹Tianjin University, China

Modeling of an Inductive Shielded Superconducting Fault Current Limiter in EMTP-ATP and COMSOL Multiphysics
BAEUML Katrin¹, POTKRAJ AC Dejan², KIZILCAY Mustafa²
¹Schneider Electric Sachsenwerk GmbH, Germany, ²University of Siegen, Germany

Application of a high temperature superconducting Inductive-type superconducting fault current limiter for VSC-HVDC systems
AUDU Abba¹, ZHANG Min¹
¹University of Bath, United Kingdom

Comparative study of inductive and resistive SFCLs for various types of short-circuit on meshed and non-meshed HV network.
DIDIER Gaëtan¹, BONNARD Charles Henri¹, LEVEQUE Jean¹
¹GREEN - University of Lorraine, France

Comparison of the effect of different magnetic circuits in the performance of inductive superconducting fault current limiters under symmetric and asymmetric faults
BARROSO Pedro¹, MURTA-PINA João², VILHENA Nuno², ARSEINIO Pedro², AMARO Nuno², PRONTO Anabela²
¹Faculdade de Ciencias e Tecnologia - Universidade de Lisboa, Portugal, ²Centre of Technology and Systems - UNINOVA, Portugal

Transient stability improvement of power system with interconnected AC/DC by SFCLs
JUNG Byung Ik¹, JEONG In Sung¹, LEE Yu Kyeong¹, CHAI Jeong Eun¹, JUNG Jae Jun¹, CHOI Hyo Sang¹
¹Chosun University, South Korea

Analysis of electromagnetic forces in superconducting fault current limiters under short-circuit condition
VILHENA Nuno¹, TAILLACQ Amanda², PRONTO Anabela¹, MURTA-PINA João¹
¹UNINOVA - CTS, Portugal, ²DEE-FCT-UNL, Portugal

Analysis of Short-circuit Current Limiting Effect on the Critical Forces of Inductive Type Superconducting Fault Current Limiters
ARSEINIO Pedro¹, VILHENA Nuno¹, MURTA-PINA João¹, PRONTO Anabela¹, OROSZ Tamás², TAMUS Zoltán²
¹Uninova - Centre of Technology and Systems, Portugal, ²Budapest University of Technology and Economics, Hungary
Technical and Economic Analysis of Resistive-type Superconducting Fault Current Limiter Application in a HVDC Grid regarding DC Breakers Technical Requirements
LEON GARCIA William¹, BERTINATO Alberto¹, TIXADOR Pascal², RAISON Bertrand³, CREUSOT Christophe¹
¹Supergrid Institute, France, ²G2Elab, University Grenoble Alpes, France

3A-LS-P-09 Sep 9 - Afternoon (2:00-4:00 PM)
Large Scale - Motors & Generators III

Superconducting electrical machines for future aircrafts
KOVALEV Konstantin¹, DEZHIN Dmitry¹, IVANOV Nikolay¹, SAMOYLENKOV Sergey², MELYUKOV Dmitry², SEMENIKHIN Valery¹, KOBZEVA Irina¹
¹Moscow Aviation Institute, Russian Federation, ²JSC “SupeOx”, Russian Federation, ³Airbus Group, Russian Federation

An outlook of the cryogenic on-board electric machines use
DUBENSKY Alexander¹, KOVALEV Konstantin¹, LARIONOFF Anatoly¹, MODESTOV Kirill¹, PENKIN Vladimir², POLTAVETS Vladimir³
¹Moscow Aviation Institute, Russia

Torque characteristics of a quasi-diamagnetic rotating machine
RACZ Arpad¹, VAJDA Istvan²
¹University of Debrecen, Hungary, ²Obuda University, Hungary

Brushless superconducting synchronous generator with claw-shaped poles and permanent magnets
KOVALEV Konstantin¹, VERZHBITSKY Leonid², KOZUB Sergey³, PENKIN Vladimir², LARIONOV Anatoly¹, MODESTOV Kirill¹, IVANOV Nikolay¹, TULINOVA Ekaterina¹, DUBENSKY Alexandr³
¹Moscow Aviation Institute, Russia, ²NIIEJSC, Russia, ³IHEP, Russia

Design for the cryogenic structure of a 15 kW fully-superconducting generator
WU Qihong¹, QU Timing¹, SONG Peng², HONG Zhiyong³, SUN Renjun⁴, GU Chen⁵, HAN Zhenghe⁶
¹Department of Mechanical Engineering, Tsinghua University, China, ²Applied Superconductivity Research Center, China, ³Shanghai Superconductor Technology Co., Ltd., China

Design and Analysis of Modular Flux-Concentrating HTS Permanent Magnet Vernier Machines
ZHANG Yang¹, LIN Heyun¹, FANG Shuhua¹, WANG Dong¹
¹Engineering Research Center for Motion Control of MOE, Southeast University, China

A Compact Integration Cooling System of a Combination Two 1.5 MW HTS Motors for Electric Propulsion
LE Thanh Dung¹, KIM Ji Hyung¹, PARK Sa Il¹, KIM Do Jin¹, JO Young-Sik¹, YOON Kyung-Yong¹, YOON Yong Soo¹, KIM Ho Min¹
¹Jeju National University, South Korea, ²Korea Electrotechnology Research Institute, South Korea, ³Yonsei University, South Korea, ⁴Shin Ansan University, South Korea
Fundamental Characteristics Analysis of a Sample HTS Magnet for Design of a 300 kW HTS DC Induction Furnace
JONGHO Choi¹, SUNG-KYU Kim¹, BYEONG-SOO Go¹, MINWON Park², IN-KEUN Yu¹, SEOKHO Kim¹, KIDEOK Sim²
¹Changwon National University, South Korea, ²Korea Electrotechnology Research Institute, South Korea

Analysis of forces and energy densities in compact HTS electromagnetic actuators
STEPIEN Mariusz¹
¹The Silesian University of Technology, Poland

Monte Carlo Design Space Exploration of Superconducting Generator using MgB2 and YBCO Conductors
SALVATORE Grieco¹, NYANTEH Yaw¹, MASSON Philippe¹
¹University of Houston, United States

A Study on the Thermally Actuated Magnetization Flux Pumping Technology and thermal materials
ZHAI Yujia¹
¹University of Cambridge, United Kingdom

Behavior of magnetization changes of Nb3Sn multifilamentary wires after fast proton irradiation with energy up to 32 MeV
DEGTYARENKO Pavel¹, BALLARINO Amalia¹, BOTTURA Luca², FLUKIGER Rene Louis Jacques⁵, KRUGLOV Vitaly¹, GAVRILKIN Sergey¹, VATUSSKIN Sergey¹, RYAZANOVA Alexander¹, SCHELURLEIN Christian², SEMENOV Evgeniy¹, SHAKIN Sergey¹, SPINA Tiziana¹, UNEZHEV V³
¹NRC "Kurchatov institute", Russia, ²CERN, Switzerland, ³P.N. Lebedev Physical Institute of the Russian Ac, Russia

Transport Jc in bulk superconductors: A practical approach?
RUSH Jordan¹, PALMER Kysen¹, DENNIS Anthony¹, SHI Yunhua¹, CARDWELL David¹, DURRELL John¹
¹University of Cambridge, United Kingdom

Calculation of the current paths in the two-exponential model for the HTS tape with defects
RUDNEV Igor¹, PODLIVAEV Alexey¹
¹National Research Nuclear University MEPhI, Russia

Effects of disorder on penetration depth and quasiparticle conductivity of Co and K doped BaFe2As2 crystals, investigated by a microwave coplanar resonator technique
GHIGO Gianluca¹, GERBALDO Roberto¹, GOZZELINO Laura¹, LAVIANO Francesco¹, TAMEGAI Tsuyoshi²
¹Politecnico di Torino and INFN sez. Torino, Italy, ²The University of Tokyo, Japan
A procedure to protect granular and porous samples from oxygen contamination in high resolution magnetization measurements: application to granular high-Tc cuprate superconductors.
RAMOS ÁLVAREZ Alberto1, MOSQUEIRA REY Jesús1, DOVAL GARCIA Juan1, CASTAÑO VERDE José1, SÓNORA VIDAL Daniel1, DANCAUSA VICENT Javier1, VIDAL COSTA Félix1
1LBTS Research Group, University of Santiago de Compostela, Spain

Anomalous thermal expansion of PrBa2Cu3O6+x compounds with x = 0.44 and 0.95 at low temperatures
LAHOUBI Mahieddine1
1Badji Mokhtar-Annaba University, Faculty of Science, Algeria

Fabrication of sintered bulks and electrochemically deposited chalcogenides superconductors
FIAMOZZI ZIGNANI Chiara3, CORATO Valentina1, DE MARZI Gianluca1, MANCINI Antonella2, BESI VETTRELLA Ugo2, YAMASHITA Aichi1, TAKANO Yoshiiiko2, GAIA Grimaldi3
1ENEA C.R. Frascati and Salerno University, Italy, 2ENEA CR Frascati, Italy, 3NIMS, Japan, 4SPIN-CNR, Italy

Impedance Spectroscopy for Applied Superconductivity
LOPES Artur1, NEVES Marcelo1, SILVA Edson1, BRANCO Luiz1, ROSARIO Marco2, PAULO NETO Denis2, PONTES Mayara1, RIBEIRO Mariana1, NASCIMENTO Carlos3
1LMDS-UFRRJ, Brazil, 2NeoKinetika, Brazil, 3CEMIG, Brazil

Battery-like Reaction Beats the Suppression of Superconductivity in Iron Chalcogenides
YAMASHITA Aichi1, TAKANO Yoshiiiko1
1National Institute for Materials Science, Japan

Rietveld-refinement of rutheno-Cuprate superconductor RuSr2-xCaxGdCu2O8±z annealed for different times in oxygen flux
ABATAL Mohamed1, GONZALEZ Adrian2, VAZQUEZ Valentin3, GONZALEZ Gonzalo4
1Universidad Autónoma del Carmen, Mexico, 2UGT, Mexico, 3BUAP, Mexico, 4UNAM, Mexico

3A-M-P-02 Sep 9 - Afternoon (2:00-4:00 PM)
Materials - Vortex, flux pinning II
Phonon escape time deduced from the time of nucleation of hot spots in superconducting niobium filaments
HARRABI Khalil1, OKTASENDA Fandi1, BERDIYOROV Golibjon2, GASMI Khaled1, MANEVAL Jean Paul1, BAKARE Fatai1
1Physics Department, King Fahd University of Petroleum Minerals, Saudi Arabia, 2Qatar Environment and Energy Research Institute, Qatar, 3Laboratoire Pierre Aigrain, ENS, France, 4King Fahd University of Petroleum & Minerals, Saudi Arabia

Field dependence of pinning parameters for YBa2Cu3O7-5 films in low magnetic field
SANNIKOV Ilya1, KUZNETSOV Alexey1, IVANOV Andrey1, MENUSHENKOV Alexey1, CHURKIN Oleg1
1National Research Nuclear University MEPhI, Russia
Pinning and dynamics of magnetic flux in 2G HTS materials
DOROFEEV Gennady¹, DROBIN Valery², MALINOWSKI Henryk²
¹Kurchatov's Institute, Russian Federation, ²JINR, Russian Federation

High field paramagnetic Meissner effect in Ga implanted YBa2Cu3O7 single crystal
VIEIRA Valdemar¹, DIAS Fábio¹, GOUVÉA Cristol², PUREUR Paulo³, SCHAF Jacob¹, HEDNA Marlon¹
¹Universidade Federal de Pelotas, Brazil, ²Instituto Nacional de Metrologia, Qualidade e Tecnologia, Brazil, ³Universidade Federal do Rio Grande do Sul, Brazil

Chemically introduced disorder effects on the critical current density and pinning mechanisms of YBA(2-x)Sr(x)CU3O7-δ single crystals
LOPES Rovan¹, VIEIRA Valdemar², DIAS Fábio², PUREUR Paulo¹, SCHAF Jacob¹, HNEDA Marlon¹, ROA Joan³
¹Universidade Federal do Rio Grande do Sul, Brazil, ²Universidade Federal de Pelotas, Brazil, ³Universitat de Barcelona, Spain

Comparison between the magnetic irreversibility and zero resistance lines of high quality melt-processed YBaCuO superconductors
DIAS Fábio¹, VIEIRA Valdemar¹, WOLFF-FABRIS Frederik², KAMPERT Erik², HNEDA Marlon¹, SCHAF Jacob¹, FARINELA Graziele³, GOUVÉA Cristol², ROA Joan Josep³
¹Universidade Federal de Pelotas, Brazil, ²Dresden High Magnetic Field Laboratory, Germany, ³Universidade Federal do Rio Grande do Sul, Brazil, ³Divisão de Metrologia de Materiais, Inmetro, Brazil, ⁵Universitat Politècnica de Catalunya, Spain

Superconducting fluctuation and Josephson plasma oscillation in Pb1-ySr2Y1-xCaxCu2+yO7+δ thin films observed by Terahertz Time Domain Spectroscopy
UZAWA Akira¹, KOMORI Sachio¹, KAKEYA Itsuhiro¹
¹Kyoto University, Japan

Nonequilibrium phonons in wide superconducting films with phase slippage
KULIKOVSKY Andrey¹
¹A.M. Prokhorov General Physics Institute of RAS, Russia

Controlling flux avalanches in superconducting films
CARMO Danusa¹, COLAUTO Fabiano¹, ANDRADE Antônio², OLIVEIRA Ana¹, JOHANSEN Tom¹, ORTIZ Wilson¹
¹Universidade Federal de São Carlos, Brazil, ²Universidade Federal do Rio Grande do Sul, Brazil, ³Instituto de Federal de Educação, Ciência e Tecnologia, Brazil, ⁴University of Oslo, Norway

Functional behavior of the anomalous magnetic relaxation observed in melt-textured YBaCuO samples showing the paramagnetic Meissner effect
GARCIA Evelin¹, DIAS Fábio¹, VIEIRA Valdemar¹, WOLFF-FABRIS Frederik², KAMPERT Erik², HNEDA Marlon¹, GOUVÉA Cristol², OBRADORS Xavier², PUIG Teresa², ROA Joan Josep³
¹Universidade Federal de Pelotas, Brazil, ²Dresden High Magnetic Field Laboratory, Germany, ³Universidade Federal do Rio Grande do Sul, Brazil, ⁴University of Oslo, Norway
Is there a potential for applications within surface superconductivity state in thin films?

PAN Alexey¹, ESQUINAZI Pablo², BRANDT Ernst³
¹University of Wollongong, Australia, ²University of Leipzig, Germany, ³Max-Planck-Institute fuer Metallforschung, Germany

Vortex dynamics and critical current in superconducting films with linear defects. Classical approach.

KASATKIN Alexander¹, TSVITKOVSKYI Vadym¹
¹Institute for Metal Physics, NASU, Ukraine

Y3Fe5O12 nanoparticles as efficient pinning centers in YBa2Cu3O7-δ matrix

KHENE Samir¹, GASMI Mounia¹, FILLION Gerard²
¹Radiation Physics Laboratory, Physics Department, Badji Mokhtar University, Algeria, ²LNCMI, CNRS, France

Giant Discontinuous Field Increase in Pulsed ZFC Bulk HTS - a Systematic Failure of the Critical State Model

WEINSTEIN Roy¹, PARKS Drew¹, SAWH Ravi-Persad¹, CARPENTER Keith¹, DAVEY Kent¹
¹University of Houston, USA

The correlation between zero resistance and magnetic irreversibility temperatures of Sr and Zn doped YBa2Cu3O7 single crystals: the limits of josephson and abrikosov vortices dynamics

MACEDO Daniela¹, VIEIRA Valdemar¹, DIAS Fábio¹, JAECKEL Sandra¹, PUREUR Paulo², SCHAF Jacob², HEDNA Marlon²
¹Universidade Federal de Pelotas, Brazil, ²Universidade Federal do Rio Grande do Sul, Brazil

First observation of flux avalanches in V3Si superconducting thin films

COLAUTO Fabiano¹, MOTTA Maycon¹, PINHEIRO Lincoln², JOHANSEN Tom³, BELLINGERI Emilio³, SHRIKANT Kawale³, FERDEGHINI Carlo³, ORTIZ Wilson³
¹Universidade Federal de São Carlos, Brazil, ²Instituto Federal de São Paulo, Brazil, ³University of Oslo, Norway, ⁴CNR-SPIN, Italy

Investigating dynamic current profiles in YBa2Cu3O7-x thin films using ultra-fast magneto-optical imaging and simulation

WELLS Frederick¹, GOLOVCHANSKIY Igor¹, PAN Alexey¹, FEDOSEEV Sergey¹
¹University of Wollongong, Australia
An analytical method for the calculation of the force between a magnet and a bulk superconductor
DUPONT Louis1, NOUDEM Jacques2, BERNSTEIN Pierre2
1Société Caylar, France, 2Université de Caen-Basse-Normandie, France

Transition to the normal state induced by high current densities in high-Tc superconductor microbridges under applied magnetic fields.
DOVAL GARCIA Juan1, RAMOS ÁLVAREZ Alberto1, CASTAÑO VERDE José1, SOÑORA VIDAL Daniel1, VEIRA SUÁREZ José1, MAZA FRECHÍN Jesús1, VIDAL COSTA Félix1
1LBTS Research Group, University of Santiago de Compostela, Spain

Two-dimensional measurement of dynamic magnetic flux density distribution on the surface of HTS bulk
IDA Tetsuya1, NAKAGAWA Takumi1, IZUMI Mitsuru2
1National Institute of Technology, Hiroshima College, Japan, 2Tokyo University of Marine Science and Technology, Japan

Magnetization and levitation characteristics of HTS tapes stacks in crossed magnetic fields
POKROVSKII Sergei1, OSIPOV Maxim1, ABIN Dmitry1, RUDNEV Igor1
1National Research Nuclear University MEPhI, Russia

Measurements and numerical simulations of trapped field in a stack of HTS tapes
MINEEV Nikolay1, PODLIAEV Alexey1, RUDNEV Igor1
1National Research Nuclear University MEPhI, Russian Federation

Analysis of Transport Properties of MOD YBCO Films with BaZrO3 as Artificial Vortex Pinning Centres
FROLOVA Anna1, POMPEO Nicola1, TOROKHTII Kostiantyn1, SOTGIU Giovanni1, SILVA Enrico1, ANGRISANI ARMENIO Achille2, AUGIERI Andrea2, FABBRI Fabio2, MANCINI Antonella2, RIZZI Francesca2, RUFOLONI Alessandro2, VANNOZZI Angelo2, CELENTANO Giuseppe2, CIONTEA Lelia3, PETRISOR Traian3
1Università di Roma Tre, Italy, 2ENEA CR Frascati, Italy, 3Technical University of Cluj-Napoca, Romania

Critical current in PLD-YBCO coated conductors investigated by high-resolution Hall scan measurements
LAO Mayraluna1, HECHER Johannes1, PAHLKE Patrick2, SIEGER Max2, HÜHNE Ruben2, EISTERER Michael1
1Atominstitut - Vienna University of Technology, Austria, 2Institute for Metallic Materials, IFW Dresden, Germany

Resistive transition of type-II superconducting films with regular patterns of critical temperature variations induced by micro and nanofunctionalization.
CASTAÑO VERDE José1, DOVAL GARCIA Juan1, RAMOS ÁLVAREZ Alberto1, SÓÑORA VIDAL Daniel1, VÁZQUEZ RAMALLO Manuel1
1LBTS Research Group, University of Santiago de Compostela, Spain
Low-dimensionality effects in MgB2 electronic properties
MANESCO Antonio1, RODRIGUES JR. Durval1
1University of São Paulo-Lorena Engineering School, Brazil

Design of the superconducting end caps of a tubular magnetic shield
WERA Laurent1, FAGNARD Jean-François1, HOGAN Kevin1, VANDERBEMDEN Philippe1, VANDERHEYDEN Benoit1
1SUPRATECES, University of Liège, Belgium

Characterization of the magnetic properties of a continuously coated YBCO coated conductor cylinder in persistent current mode
WÉRA Laurent1, FAGNARD Jean-François1, VANDERHEYDEN Benoit1, VANDERBEMDEN Philippe1
1SUPRATECES, University of Liège, Belgium

Magnetotransport measurements on Nd2-xCexCuO4±d thin films
GUARINO Anita1, AVELLA Adolfo1, AVITABLE Francesco1, GRIMALDI Gaia2, LEO Antonio2, MARTUCCI ELLO Nadia2, ROMANO Alfonso1, ROMANO Paola1, NIGRO Angela1
1Università di Salerno and CNR-SPIN UOS Salerno, Italy, 2CNR-SPIN UOS Salerno, Italy, 3Università del Sannio and CNR-SPIN UOS Salerno, Italy

Relaxation of levitation force of a stack of HTS tapes
ABIN Dmitry1, OSIPOV Maxim1, POIKROVSKIII Sergei1, RUDNEV Igor1
1National Research Nuclear University MEPhI, Russia

First principal investigation of FeSe under pressure
AFRASSA Mesfin Asfaw1
1Addis Ababa University, Ethiopia

In-plane field angle dependence of the critical current of RBCO wires
STRICKLAND Nicholas1, WIMBUSH Stuart1, LONG Nicholas1
1Victoria University of Wellington, New Zealand

Perfect Conductivity within Superconductivity: The Origin of Paramagnetic Meissner Effect
OH Sangjun1
1National Fusion Research Institute, South Korea

Influence of the position of a small hole on the trapped field performance in a holed superconducting bulk magnet
YOKOYAMA Kazuya1, ERANDA Kulawansha1, ZHAO Yuanding1, OKA Tetsuo1
1Ashikaga Institute of Technology, Japan, 2Niigata University, Japan

Effect of co-doping on electrical and thermal transport properties of Nd0.95Pr0.05Ba2Cu3-x MxO7-δ with M=Fe, Co, Ni and Zn) bulk superconductors
RAO Ashok1
1Department of Physics, Manipal Institute of Technology, India
Study of the normal-superconductor phase transition in a granular multi-doped Y0.25Gd0.25Er0.25Nd0.25Ba2Cu3O7-δ superconductor
KAVAMOTO Alana¹, RODRIGUES Pedro¹, JURELO Alcione¹, HNEDA Marlon², BRINATTI André³, COSTA Rosângela⁴
¹Universidade Estadual de Ponta Grossa, Brazil, ²Universidade Federal do Rio Grande, Brazil

Top Seeded Infiltration Growth And Structure Of YBCO Bulk Superconductors
VOJTKOVA Liudmila¹, DIKO Pavel¹, VOLOCHOVÁ Daniela¹, KAVEčANSKY Viktor¹, ANTAL Vitaly¹, PIOVARčí Samuel¹
¹Institute of Experimental Physics, SAS, Slovakia

Growth parameters in Y123-Y211 system
RADUSOVSKA Monika¹, DIKO Pavel¹, VOLOCHOVA Daniela¹, KAVEČANSKY Viktor¹, ANTAL Vitaly¹, PIOVARCI Samuel¹
¹Institute of Experimental Physics, SAS, Slovakia

Doping Effects in Superconducting SmBa2Cu3O7-δ Bulk Materials
ZHAO Wen¹, SHI Yunhua¹, DENNIS Anthony¹, CARDWELL David¹
¹University of Cambridge, United Kingdom

Preparation and characterization of IG processed YBa2Cu3Oy bulk superconductors produced with sintered Y2BaCuO5 precursor
IDE Naoki¹, MIRYALA Muralidhar¹, KOBLISCHKA Michael R ², INOUE Kazuhiro¹, MURAKAMI Masato¹
¹Shibaura Institute of Technology, Japan, ²Saarland University, Germany

Critical current properties of Ca-doped Y123 melt-solidified bulks
OHDA Yoshitaka¹, SETOYAMA Yui¹, YAMAMOTO Akiyasu¹, OGINO Hiraku¹, KISHIO Kohji¹, SHIMOYAMA Jun-Ichi¹
¹The University of Tokyo, Japan

Systematic changes of flux pinning properties and microstructures observed in RE-mixed RE123 melt-solidified bulks
SETOYAMA Yui¹, SHIMOYAMA Jun-Ichi¹, YAMAMOTO Akiyasu¹, OGINO Hiraku¹, KISHIO Kohji¹, AWAJI Satoshi²
¹The University of Tokyo, Japan, ²Institute for Materials Research, Tohoku University, Japan

Processing of YBCO Single Domain Bulk with Modified TSMTG Approach
XU Kexi¹
¹Shanghai University, China

Growth and Superconducting Properties of Multi-seeded Quasi-(RE)BCO Single Grains
SHI Yunhua¹, DENNIS Anthony¹, NAMBURI Devendra¹, DURRELL John¹, CARDWELL David¹
¹University of Cambridge, United Kingdom
YBCO bulk rings grown via a novel crystal growth technique for large scale applications

ERTEKIN Ercan¹, GECER Sahure¹, KOSA Janos², YANMAZ Ekrem², GENCER Ali²
¹Ankara University, Turkey, ²Karadeniz Technical University, Turkey

A low cost fabrication method on the single domain GdBCO bulk superconductor by the simplified melt growth process

YANG Pengtao¹, WANG Miao¹, YANG Wanmin¹
¹Shaanxi Normal University, China

Control of RE/Ba substitution by oxygen partial pressure for REBa2Cu3Oy phase using the molten KOH

OKUNISHI Ryota¹, FUNAKI Shuhei¹, YAMADA Yasuji¹, MIYACHI Yugo¹
¹Shimane University, Japan

2-step Top seeded infiltration and growth process- A reliable fabrication method for producing large, single grain (RE)Ba2Cu3O7-x bulk superconductors

NAMBURI Devendra Kumar², SHI Yunhua¹, DENNIS Anthony¹, DURRELL John¹, CARDWELL David¹
¹University of Cambridge, United Kingdom

YBa2Cu3O7-δ ceramic superconductor obtained by acetate method

DE LÉO Ana¹, NASCIMENTO Mylena², HERNÁNDEZ Ury², PAULO-NETO Denis², SAITOVITCH Elisa², FONTES Magda², LOPES Artur³, NEVES Marcelo³, LOPEZ Ada⁴
¹IF ADT - UERJ & LMDS - UFRRJ, Brazil, ²CBPF, Brazil, ³LMDS-UFRJ, Brazil, ⁴IF ADT - UERJ, Brazil

Preparation of NdBa2Cu3O7-δ samples by the wet-chemical method

DE LÉO Ana¹, NASCIMENTO Mylena², HERNÁNDEZ Ury², PAULO-NETO Denis², SAITOVITCH Elisa², FONTES Magda², LOPES Artur³, NEVES Marcelo³, LOPEZ Ada⁴
¹IF ADT - UERJ & LMDS - UFRRJ, Brazil, ²CBPF, Brazil, ³LMDS-UFRJ, Brazil

Effect of aging induced by additional short-term high temperature treatment on superconducting and electric transport properties of polycrystalline Y-Ba-Cu-O compound

NIKOGHOSYAN Sergey⁴, HARUTUNYAN Vachagan¹, BAGHDASARYAN Valeri¹, MUGHNETSYAN Edgar³, ZARGARYAN Erjanik², AVAZYAN Ashot⁴, SARKISYAN Albert³
¹Yerevan Physics Institute, Armenia, ²International Scientific-Educational Center of NAS, Armenia

Microstructure and Superconducting Properties of YBCO Bulk Superconductors with RE Substitutions

VOLOCHOVA Daniela¹, PIOVARCI Samuel¹, ANTL Vitaly¹, KAVECANSKY Viktor², KOVAC Jozef², JUREK Karef², JIRSA Milos², DIKO Pavel¹, NOUDEM Jacques³
¹Institute of Experimental Physics SAS, Slovak Republic, ²Institute of Physics AS CR, Czech Republic, ³CRISMAT, CNRS/UMR 6508, ENSICAEN, France
Effect of Nd(422) dopant on the superconducting properties of Nd(123) superconductor melt-processed in air
MAHMOUD Ahmed
Department of Physics, Faculty of Science, Libya

Materials - Pnictides II

The combined effect of titanium and air on Fe(Te,Se)-type superconducting materials
ABOUHASWA Aly\textsuperscript{1}, MERENTSOV Alexander\textsuperscript{1}, BARANOV Nikolai\textsuperscript{1}
\textsuperscript{1}Ural Federal University, Institute of Natural Sciences, Russia

Ac Susceptibility and Third Harmonics Studies of Hg-1223 Superconductors with Edition of Arsenic Oxide
METSKHVARISHVILI Ioseb\textsuperscript{1}, Dgebualaze G\textsuperscript{1}, BENDELIANI B\textsuperscript{1}, LOBZHANIDZE T\textsuperscript{2}, METSKHVARISHVILI M\textsuperscript{3}, GABUNIA V\textsuperscript{1}
\textsuperscript{1}I. Vekua Sukhumi Institute of Physics & Technology, Georgia, \textsuperscript{2}Ivane Javakhishvili Tbilisi State University, Georgia, \textsuperscript{3}Georgian Technical University, Georgia

Phosphorus doping level dependence of microstructure and superconducting properties of BaFe2As2 polycrystalline bulks
TSUJITAKE Senri\textsuperscript{1}, YAMAMOTO Akiyasu\textsuperscript{1}, OGINO Hiraku\textsuperscript{1}, SHIMOYAMA Jun-Ichi\textsuperscript{1}, KISHIO Kohji\textsuperscript{1}
\textsuperscript{1}University of Tokyo, Japan

Preparation of Nb3(Al, Ge) by high-energy ball milling and superconductivity
ZHANG Yun\textsuperscript{1}, YANG Dawei\textsuperscript{1}, LI Pingyuan\textsuperscript{1}, XU Liyuan\textsuperscript{1}, CHEN Yongliang\textsuperscript{1}, PAN Xifeng\textsuperscript{1}, YAN Guo\textsuperscript{1}, ZHAO Yong\textsuperscript{1}
\textsuperscript{1}Southwest Jiaotong University, China, \textsuperscript{2}Western Superconducting Technologies Co., Ltd., China

RE dependence of superconducting properties of transition metals co-doped (Ca,RE)FeAs2
YAKITA Hiroyuki\textsuperscript{1}, OGINO Hiraku\textsuperscript{1}, SALA Alberto\textsuperscript{2}, YAMAMOTO Akiyasu\textsuperscript{1}, KISHIO Kohji\textsuperscript{1}, IYO Akira\textsuperscript{2}, EISAKI Hiroshi\textsuperscript{2}, SHIMOYAMA Jun-Ichi\textsuperscript{1}
\textsuperscript{1}The University of Tokyo, Japan, \textsuperscript{2}National Institute of Advanced Industrial Science and Technology, Japan

Study of Microstructure in FeSe Preferred Orientation Bulks Growing by Bridgman Method
CHEN Ingann\textsuperscript{1}, YANG Chiaming\textsuperscript{1}, WU Maw-Kuen\textsuperscript{2}
\textsuperscript{1}National Cheng Kung University, Taiwan (ROC), \textsuperscript{2}Academia Sinica, Taiwan (ROC)

Mechanism of Lithium Doping on FeSe1-xTex Crystal Structure
CHEN Ingann\textsuperscript{1}, YANG Chiaming\textsuperscript{1}, WU Mawkuen\textsuperscript{2}
\textsuperscript{1}National Cheng Kung University, Taiwan (ROC), \textsuperscript{2}Academia Sinica, Taiwan (ROC)
Effect of the FeSe precursor on the transporting properties of KxFe2-ySe2
CUI Yajing1, WANG Xiaofeng1, CHEN Yongliang1, LI Pingyuan1, ZHAO Yong1
1Southwest Jiaotong University, China

Investigation of physical properties of FeSe single crystals grown by chemical vapor transport
SAM Raguilignaba1, KARLSSON Sandra2, STROBEL Pierre2, SULPICE André3, MARCENAT Christophe3, LEGENDRE Murielle3, GAY Frédéric2, PAIRIS Sébastien2, LEYNAUD Olivier2, TOULEMONDE Pierre2
1Université de Ouagadougou, Burkina Faso, 2Université Grenoble Alpes / CNRS, France, 3CEA-INAC / UJF Grenoble 1, France

3A-WT-P-01 Sep 9 - Afternoon (2:00-4:00 PM) Wires and Tapes - BSCCO

Influence of the oxygen partial pressure on the phase evolution during the melt processing of Bi-2212 superconducting wires
SCHEUERLEIN Christian1, ANDRIEUX Jerome2, DOERRER Christopher1, KADAR Julian3, RIKEL Mark4, DI MICHELI Marco5, BALLARINO Amalia1, BOTTURA Luca1, JIANG Jianyi6, KAMETANI Tak6, HELLSTROM Eric6, LARBALESTIER David6
1European Organization for Nuclear Research (CERN), Switzerland, 2Université Claude Bernard Lyon 1, France, 3Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany, 4Nexans SuperConductors GmbH, Germany, 5ESRF, France, 6Applied Superconductivity Center, NHMFL, FSU, United States

Microscopic mechanisms of quench induced critical current degradation in Bi2Sr2CaCu2O8+x round wire
YE Liyang1, LI Pei1, SHEN Tengming1, SCHWARTZ Justin2
1Fermi National Accelerator Laboratory, United States, 2North Carolina State University, United States

Processing of Bi2Sr2CaCu2Ox superconductors via direct oxidation of metallic precursors
ZHANG Yun1, KOCH Carl1, SCHWARTZ Justin1
1North Carolina State University, United States

Electrical transport in a single, dense Bi2Sr2CaCu2Ox colony extracted from a Ag-sheathed multifilamentary wire
ZHANG Yun1, SCHWARTZ Justin1
1North Carolina State University, United States

Synthesis of Bi2Sr2CaCu2Ox oxide precursor from nano-oxides and its relationship with multifilamentary wire transport properties
ZHANG Yun1, JOHNSON Stephen2, STIEHA Joey2, CHAUBAL Manasi2, VENUGOPAL Ganesh2, HUNT Andrew2, SCHWARTZ Justin1
1North Carolina State University, United States, 2nGimat, llc, United States
1D Current density profiles of BSCCO tapes in the stacked conductor under different current feeding modes
FAMAKINWA Tosin1, SHYSHKIN Oleg2, SUN Jian3, TALLOULI Mohamed*, YAMAGUCHI Satarou*
1University of Western Sydney, Australia, 2V. N. Karazin Kharkiv National University, Ukraine, 3Chubu University, Japan

Superconducting properties of Ag and Ag-Cu Alloy Sheathed/Bi-2223 Wires
KILICARSLAN Ebru1, SAFRAN Serap1, KILIC Ahmet1, OZTURK Hamit3, ALP Meryem1, GENCER Ali1
1Ankara University, Turkey

Critical Current Properties of Bi2223 Tapes Synthesized under Low PO2
FURUKI Masahiro1, SHIMOYAMA Jun-Ichi1, YAMAMOTO Akiyasu1, OGINO Hiraku1, KISHIO Kohji2, NAKASHIMA Takayoshi3, KOBAYASHI Shin-Ichi1, HAYASHI Kazuhiko1
1Tokyo University, Japan, 2Sumitomo Electric Industries, Ltd., Japan

Progress towards commercial 2212 by integrated development of powder and wire
OTTO Alexander1, CARTER William1
1Solid Material Solutions, LLC, United States

Rectangular, strengthened 2212 wire for high field magnets made by react and wind
OTTO Alexander1
1Solid Material Solutions, LLC, United States

Production, customisation and integration of 2G HTS wire into HTS devices
SAMOILENKOV Sergey1, LEE Sergey2, PETRYKIN Valery2, KALITKA Vladislav3, MANKEVICH Alexey1, MOYZYKH Mikhail1, MARTYNOVA Irina1, ADAMENKOV Alexander1, CHEPIKOV Vsevolod1, BLEDOV ANDREY1, AMELICH EV Vadim1, KAMENEV Anton1, MARKELOV Anton1, MAKAREVICH Artem1, GORBUNOVA Darya1, MOLODYK Alexander1, KAUL Andrey1
1SuperOx, Russia, 2SuperOx Japan LLC, Japan

Progress in Coated Conductor Development at Deutsche Nanoschicht
FEENSTRA R., KUNERT J., WOJTNIAK B., BENNEWITZ J., FALTER M., BAECKER M.
1Deutsche Nanoschicht GmbH, Germany

12mm wide HTS coated conductors for high-field applications
USOSKIN Alexander1, RUTT Alexander1, DIETRICH Reinhard1, SENATORE Carmine2, ROSSI Lucio3, BOTTURA Luca3, BALLARINO Amalia4, KARIO Anna4, GOLDAACKER Wilfried4
1Bruker HTS, Germany, 2University Genova, Switzerland, 3CERN, Switzerland, 4Karlsruhe Institute of Technology (KIT), Germany
Roadmap advances in pulsed laser deposition of coated conductors
DELMDAHRL Ralph¹, GREER James²
¹Coherent LaserSystems GmbH & Co. KG, Germany, ²PVD Products, Inc., United States

Manufacturing of HTS coated conductors in compact pilot line and their investigations
PANTSYRNY Victor¹, KOLOSKOV Sergey¹, AVDIENKO Alexander¹, KRYLOV Vladislav², SVISTUNOVA Olga², STOYAKIN Vladimir², KRUGLOV Vitaly², SHAVKIN Sergey², DEGTYARENKO Pavel², REVAZOV Vladimir², DIETRICH Reinhard², PRAUSE Burkhard³, SCHLENGA Klaus³, BETZ Ulrich³, USOSKIN Alexander³
¹Russian Superconductors OAO, Russia, ²Kurchatov’s Institute, Russia, ³Bruker HTS, Germany

3A-WT-P-03 Sep 9 - Afternoon (2:00-4:00 PM)
Wires and Tapes - Jointing

Superconducting Joint between (RE)Ba2Cu3O7-x Coated Conductors via Electric Field Sintering
JENSEN Carolyn¹, LI Menghui¹, SCHWARTZ Justin¹
¹North Carolina State University, United States

Parametric Study for Low-Resistance Joint of REBCO Coated Conductor Tapes using Hybrid Welding Method
SHIN Hyung-Seop¹, KIM Jong-Min¹
¹Andong National University, South Korea

Joints between Superconductors for Large-Scale Applications
TSUI Yeekin¹, SURREY Elizabeth², HAMPSHIRE Damian¹
¹Durham University, United Kingdom, ²EURATOM/CCFE Fusion Association, United Kingdom

Investigations on Different Joining Techniques Regarding Electrical Joints with Normal Conducting Material and YBCO Coated Conductors
BÄUML Katrin¹, RAMONAT Alexander², GROSSMANN Steffen²
¹Schneider Electric Sachsenwerk GmbH, Germany, ²Technische Universität Dresden, Germany

Update on the validation route of the Mgb2 joint process targeting its use in MRI magnets: an all-MgB2 persistent mode solenoid with the use of ex-situ processed conductor
NARDELLI Davide¹, VALESI Giovanni¹, MAGRASSI Daniele², TROPEANO Matteo¹, MARABOTTO Roberto¹, GRASSO Giovanni¹
¹Columbus superconductors, Italy, ²ASG Superconductors, Italy

Joining of CC tapes with lead-free solders
MICHALCOVA Eva¹, GÖMÖRÝ Fedor², JANOVEC Jozef¹, DRIENOVSKÝ Marián¹, SKARBA Michal¹, PEKARčÍKOVA Marcela¹, MIŠÍK Jozef¹
¹Slovak University of Technology in Bratislava, Faculty of Materials Science and Technology, Slovakia, ²Slovak Academy of Sciences, Slovakia
Current Decay Properties of MgB2 Wires and Closed-loop Coils with Superconducting Joint of Reacted Wires

ICHIKI Yota1, KODAMA Motomune1, TANAKA Hideki1
1Hitachi, Ltd., Japan

Microstructural and Superconducting Properties of Persistent Mode Joints between NbTi Conductors

BRITTLES Greg1, AKSOY Canan1, MOUSAVI Tayebeh1, LOCKETT Cyril1, BAYLISS Victoria1, VANDORE John2, MILWARD Stephen3, BRADSHAW Tom2, GROVENOR Chris1, SPELLER Susannah1
1University of Oxford, United Kingdom, 2STFC, United Kingdom, 3Diamond Light Source, United Kingdom

Superconducting Joints between Bi-2212/Ag-alloy Multifilamentary Round Wires for High Field Magnet Applications

CHEN Peng1
1National High Magnetic Field Laboratory, United States

Experiment concerning quench initiation and quench development on coated conductor

LIANG Fei1, YUAN Weijia1, ZHANG Min1
1University of Bath, United Kingdom

Tests of Parallel Connected HTS 2G Tapes for Fault Current Limiters

MAJKA Michal1, KOZAK Janusz1
1Electrotechnical Institute, Poland

AC Magnetization Loss and Transverse Resistance Measurement of Striated Coated Conductors with Electroplated Cu-Stabilization

GODFRIN Aurélien1, GYURAKI Roland1, DEMENCIK Eduard1, JUNG Alexandra1, KARIO Anna1, NAST Rainer1, SCHEITER Juliane3, MOLODYK Alexander3, MANKEVICH Alexey3, GRILLI Francesco1, GOLDACKER Wilfried1
1Karlsruhe Institute of Technology (KIT), Germany, 2Leibniz Institute for Solid State and Materials Research, Germany, 3SuperOx, Russia

Influence of electroplated Cu-stabilization on laser-structured Ag-cap coated conductors

NAST Rainer1, KARIO Anna1, JUNG Alexandra1, GODFRIN Aurélien1, GYURAKI Roland1, RINGSDORF Bernd1, SCHEITER Juliane3, GRILLI Francesco1, GOLDACKER Wilfried1, MOLODYK Alexander3, MANKEVICH Alexey3
1Karlsruhe Institute of Technology (KIT), Germany, 2Leibniz Institute for Solid State and Materials Research, Germany, 3SuperOx, Russia

Determination of I-V curves of HTS tapes from the frequency dependent AC transport loss

DEMENCIK Eduard1, ZERMENO Victor1, NAST Rainer1, GRILLI Francesco1
1Karlsruhe Institute of Technology (KIT), Germany
Microstructure, texture, mechanical properties and stress induced filament degradation of ex situ and in situ MgB2 wires
ALKNES Patrick1, HAGNER Matthias2, BJOERSTAD Roger4, SCHEUERLEIN Christian1, BORDINI Bernardo1, BALLARINO Amalia1, SUGANO Michinaka3, HUDSPETH Jessica4
1CERN, Switzerland, 2University of Konstanz, Germany, 3KEK, Japan, 4ESRF, France

Characterisation of commercial MgB2 conductors for magnet application in LIQHYSMES
LEYs Pauline1, KLAESER Marion1, RUF Claudia3, SCHNEIDER Theo1
1Karlsruhe Institute of Technology (KIT), Germany

Fracture behavior in Ti-doped MgB2 wire prepared by high energy milling
YANG Fang1, YAN Guo2, WANG Qingyang1, XIONG Xiaomei1, LI Shaoqiang1, FENG Jianqin1, LI Chengshan1
1Northwest Institute for Nonferrous Metal Research, China, 2Western Superconducting Technologies Co., Ltd., China

Magnetization AC losses in MgB2 wires made by IMD process
JAN Kovac1, JAN Souc1, PAVOL Kovac1, IMRICH Husek1
1Institute of Electrical Engineering, SAS, Slovakia

Mechanical behavior, local properties and strain localization of powder-in-tube MgB2 wire
LENOIR Gilles1, AUBIN Véronique1
1Ecole Centrale Paris, France

Influence of indentation on the properties of MgB2 strands
CHAO Dai1, QIN Jinggang1
1Institute of Plasma Physics, CAS, China

Magnetic studies of MgB2 prepared by internal magnesium diffusion with various doping
BRUNNER Boris1, REISSNER Michael2, KULICH Miloslav1, KOVAC Pavol3
1Slovak Academy of Sciences, Slovakia, 2TU Wien, Austria

Three dimensional microstructural analysis of MgB2 wires by use of X-ray micro-tomography
INOUE Masayoshi1, TATARA Hiroshi1, HARADA Kazutaka1, HIGASHIKAWA Kohei1, YE Shujun2, MATSUMOTO Akiyoshi2, KUMAKURA Hiroaki1, KISS Takanobu1
1Kyushu University, Japan, 2National Institute for Materials Science, Japan
The high pressure treatment of MgB2 and the Iron-based superconductors; the way for their high Jc in practice application
MORAWSKI Andrzej, CETNER Tomasz, DIDUSZKO Ryszard, GAJDA Daniel, GAJDA Grzegorz, RINDFLEISCH Matt, ZAESKI Andrzej, HOSSAIN Shahriar, YAMAMOTO Akiyasu, CZUJKO Tomasz, ZUCHOWSKA Emilia, HAESSLER Wolfgang, PRZYSLUPSKI Piotr

1Institute of High Pressure Physics PAS, Poland, 2Tele and Radio Research Institute, Poland, 3International Laboratory of HMF and LT PAS, Poland, 4Hyper Tech Research, Inc, United States, 5Institute of Low Temperature and Structure Research PAS, Poland, 6University of Wollongong, Australia, 7University of Tokyo, Japan, 8Military University of Technology, Poland, 9Leibniz Institute for Solid State and Materials Research, Germany, 10Institute of Physics PAS, Poland

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LECLERC Julien, NYANTEH Yaw, MASSON Philippe

1University of Houston, United States
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