

Oral Sessions Monday, September 19

8:45 – 9:00 **Opening**

Plenary Lectures (World Forum Theater)

Chairperson: Obradors, Pryszbysz

1-P-1 9:00 – 9:45

Coated Conductors: From R&D to manufacturing to commercial applications

V. Selvamanickam

University of Houston, Houston, TX 77204, USA

1-P-2 9:45 – 10:30

Quantum information processing with superconducting circuits: quantum mechanics with self-made objects

J.E. Mooij

Kavli Institute of Nanoscience, Delft University of Technology, Delft, The Netherlands

10:30 – 11:00 Coffee break

Oral Session Electronics A (Mississippi)

“Microwaves”

Chairperson: Cherednichenko

1-EA-O1 11:00 – 11:15 (A238)

Dual-Band Bandpass Filters Employing Double-Sided Conductors on a Substrate

Yuta Takagi, Kei Satoh, and Shoichi Narahashi

Research Laboratories, NTT DOCOMO, INC., 3-6 Hikari-no-oka Yokosuka, Kanagawa 239-8536, JAPAN

1-EA-O2 11:15 – 11:30 (A9)

Current-controlled filter on superconducting films with a tilted washboard pinning potential

O.V. Dobrovolskiy¹, V.A. Shklovskij^{2,3}, and M. Huth¹

¹ *Physikalisches Institut, Goethe-University, 60438 Frankfurt am Main, Germany,* ² *Department of Physics, Kharkiv National University, 61077 Kharkiv, Ukraine,* ³ *Institute for Theoretical Physics, NSC-KIPT, 61108 Kharkiv, Ukraine*

1-EA-O3 11:30 – 11:45 (A533)

HTS Josephson heterodyne local oscillator with on-chip down-converter

J. Du⁽¹⁾, J. C. Macfarlane⁽¹⁾, T. Zhang⁽²⁾, R. Cai⁽²⁾, Y. J. Guo⁽²⁾

(1) CSIRO Materials Science and Engineering, PO Box 218, Lindfield, NSW 2070, Australia, (2) CSIRO ICT Centre, PO Box 76, Epping, NSW 1710, Australia

1-EA-O4 11:45 – 12:00 (A251)

A K-band wideband HTS receiver front-end sub-system with a 12-pole microstrip filter

Shuyu Zhou, Jin Guo, Yongbo Bian, Jia Wang, Hong Li, Xue Bai, Jiangming Huang, Haibing Li, and Yusheng He

Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China

1-EA-O5 12:00 – 12:15 (A35)

Design approaches for active electrically small superconductive antennas

V. K. Kornev¹, I. I. Soloviev¹, N. V. Klenov¹, A. V. Sharafiev¹, and O. A. Mukhanov²

¹ *Moscow State University, Moscow 119991, Russia,* ² *HYPRES, 175 Clearbrook Road, Elmsford, NY 10523, USA*

1-EA-O6 12:15 – 12:30 (A436)

New Method to Increase Power Handling Capability of High-Temperature Superconducting Dual-Band Bandpass Filter

Kei Satoh^{†‡}, Yuta Takagi[†], Shoichi Narahashi[†], and Toshio Nojima[‡]

[†]*Research Laboratories, NTT DOCOMO, INC., 3-6 Hikari-no-oka Yokosuka, Kanagawa 239-8536 Japan,* [‡]*Graduate School of Information Science and Technology, Hokkaido University Kita 14, Nishi 9, Kita-ku, Sapporo, Hokkaido 060-0814 Japan*

1-EA-O7 12:30 – 12:45 (A556)

Near-quantum-limited microwave amplifier based on single Josephson junction; theory and experimentsV. Vesterinen¹, P. Lahteenmaki², J. Hassel¹, P. Hakonen², and H. Seppä¹¹VTT Technical Research Centre of Finland, Espoo, Finland, ²Low Temperature Laboratory, School of Science, Aalto University, Espoo, Finland

1-EA-O8 12:45 – 13:00 (A1144)

Design of a High Temperature Superconductor Auto-limiting Multiplexer for Interference MitigationJames C. Booth¹, Eduard Roca^{1,2}, Alberto Padilla², Carlos Collado², Jordi Mateu², Stuart Berkowitz³¹National Institute of Standards and Technology, USA; ²Universitat Polytechnica de Catalunya, Spain; ³Out of the Fog Research, USA

13:00 – 14:00 Lunch Break

14:00 – 16:00 Poster Session

“Detectors and Readout”

Chairperson: Pepe

1-EA-I1 (invited) 16:00 – 16:30 (A722)

Emerging quantum detectors based on parallel superconducting nanostrips for applications from optics to biology: how the nano can approach the macro-scaleM. Ejrnaes¹, A. Casaburi², F. Mattioli³, E. Esposito¹, S. Pagano^{2,4}, N. Martucciello⁴, A. Gaggero³, R. Leoni³, M. Ohkubo⁵ and R. Cristiano¹¹Istituto di Cibernetica del CNR, 80078 Pozzuoli, Italy, ²Università degli Studi di Salerno, 84084 Fisciano, Italy, ³Istituto di Fotonica e Nanotecnologie del CNR, 00156 Roma, Italy, ⁴SPIN del CNR, 84084 Fisciano, Italy, ⁵AIST, Tsukuba, Ibaraki 305-8568, Japan

1-EA-O9 16:30 – 16:45 (A1058)

Transition-Edge Sensor Development for X- and Gamma-Ray SpectroscopyJ. Ullom¹, D. Bennett¹, R. Doriese¹, J. Fowler¹, G. Hilton¹, R. Horansky¹, K. Irwin¹, D. Schmidt¹, D. Swetz¹, J. Uhlig², V. Sundstrom², K. Kinnunen³, I. Maasilta³, A. Hoover⁴, N. Hoteling⁴, M. Rabin⁴¹NIST, USA, ²Lund University, Sweden, ³Jyvaskyla University, Finland, ⁴Los Alamos National Laboratory, USA

1-EA-O10 16:45 – 17:00 (A1084)

SQUID multiplexers and amplifiers for readout of superconducting detector arrays

G. C. Hilton,¹ J. Beyer,² H. M. Cho,¹ E. V. Denison,¹ W. B. Doriese,¹ Alex Hojem,¹ M. E. Huber,³ K. D. Irwin,¹ J. A. B. Mates,¹ C. D. Reintsema,¹ G. M. Stiehl,¹ J. N. Ullom,¹ L. R. Vale,¹ Y. Xu¹

¹National Institute of Standards and Technology, Boulder, CO USA 80305, ²Phys.-Tech. Bundesanstalt (PTB), Berlin, Germany,

³Departments of Physics and of Electrical Engineering, University of Colorado Denver, PO Box 80217, Denver, CO USA 80217

1-EA-O11 17:00 – 17:15 (A973)

SIS sideband separating mixer for ALMA band 9 upgrade

A.V. Khudchenko^{1*}, R. Hesper², A.M. Baryshev^{1,2}, G. Gerlofsma², F.P. Mena³, T.M. Klapwijk⁴, T. Zijlstra⁴, J.W. Kooi⁵ and M.C. Spaans².

¹SRON The Netherlands Institute for Space Research, ²NOVA/Kapteyn Astronomical Institute, The Netherlands, ³Electrical Engineering Department, Universidad de Chile, ⁴Kavli Institute of Nanoscience, TU Delft, The Netherlands, ⁵Submillimeter Astrophysics Research Group, Cal.Tech., USA

1-EA-O12 17:15 – 17:30 (A379)

Real-time passive terahertz security camera based on superconducting transition edge sensors

Gabriel Zieger, Torsten May, Detlef Born, Erik Heinz, Solveig Anders, Vyatcheslav Zakosarenko, Hans-Georg Meyer

Institute of Photonic Technology (IPHT), P.O. Box 100239, D-07702 Jena, Germany

1-EA-O13 17:30 – 17:45 (A148)

Transport properties of YBa₂Cu₃O₇ Josephson junctions at THz frequencies

A. Guillaume, J. M. Scholtyssek C. Brendel, F. Ludwig, and M. Schilling
Institut für Elektrische Messtechnik und Grundlagen der Elektrotechnik, Hans-Sommer-Str. 66, 38106 Braunschweig, Germany.

1-EA-O14 17:45 – 18:00 (A199)

Kinetic-energy-sensitive superconducting molecule detectors for mass spectrometry

M. Ohkubo¹, S. Shiki¹, M. Ukibe¹, K. Chiba¹, S. Tomita², and S. Hayakawa³

¹ National Institute of Advanced Industrial Science and Technology (AIST), Japan, ² Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki 305-0006, Japan, ³ Department of Chemistry, Graduate School of Science, Osaka Prefecture University, Nakaku, Sakai, Osaka 599-8531, Japan

“SQUID an SQUID Microscopy”

Chairperson: Foley

1-EB-I1 (Invited) 11:00 – 11:30 (A847)

Field-stable SQUID magnetometer with sub-fT/Hz^{1/2} resolution based on sub-micrometer cross-type Josephson tunnel junctions

M Schmelz¹, R Stolz¹, V Zakosarenko¹, T Schönau¹, S Anders¹, L Fritsch¹, M Mück², M Meyer³ and H-G Meyer¹

¹Institute of Photonic Technology, PO Box 100239, D-07702 Jena, Germany, ²Institute of Applied Physics, Justus-Liebig University Gießen, D-35392 Gießen, Germany, ³Supracon AG, Wildenbruchstraße 15, D-07745 Jena, Germany

1-EB-O1 11:30 – 11:45 (A295)

Low-frequency noise in highly sensitive SQUID magnetometers

D. Drung(1), M. Götz(2), E. Pesel(2), M. Fleischer(1), and J.-H. Storm(1)
(1) PTB, Abbestraße 2-12, D-10587 Berlin, Germany, (2) PTB, Bundesallee 100, 38116 Braunschweig, Germany

1-EB-O2 11:45 – 12:00 (A47)

Noise properties of dc SQUID with HTS flux transformer fabricated by chemical-mechanical polishing

M. Chukharkin^{1,2}, A. Kalabukhov¹, J. Schneiderman^{1,3}, F. Oisjoen¹, O.V.Snigirev² and D. Winkler¹

¹Chalmers University of Technology, Department of Microtechnology and Nanoscience – MC2, ²Faculty of Physics M.V. Lomonosov Moscow State University, ³MedTech West, Sahlgrenska Academy and University of Gothenburg, Institute of Neuroscience and Physiology

1-EB-O3 12:00 – 12:15 (A83)

Development of HTS SQUID chip for use with an external pickup coil

A. Tsukamoto¹, S. Adachi¹, Y. Oshikubo¹, K. Tanabe¹, and K. Enpuku²

¹Superconductivity Research Laboratory, ISTEK, 1-10-13 Shinonome, Koto-Ku, Tokyo 135-0062, Japan, ²Research Institute of Superconductor Science and Systems, Kyushu University, 744 Motoooka, Nishi-Ku, Fukuoka 819-0395, Japan

1-EB-O4 12:15 – 12:30 (A97)

Self-aligned nanoSQUID on a tip for scanning probe microscopy

Amit Finkler¹, Denis Vasyukov¹, Yehonathan Segev¹, Lior Neeman¹, Yuri Myasoedov¹, Michael Rappaport¹, Martin E. Huber^{2,3}, Jens Martin⁴, Amir Yacoby⁴, and Eli Zeldov¹

¹*Department of Condensed Matter Physics, Weizmann Institute of Science, Rehovot 76100, Israel,* ²*Department of Physics, University of Colorado, Denver, CO 80217, USA,* ³*Department of Electrical Engineering, University of Colorado, Denver, CO 80217, USA,* ⁴*Department of Physics, Harvard University, MA 02138, USA*

1-EB-O5 12:30 – 12:45 (A89)

A dc-SQUID current sensor with an intermediary magnetic flux transformer for very low noise applications

A Vettoliere^{1*}, C Granata¹ and M Russo¹

¹*Istituto di Cibernetica "E. Caianiello" del CNR, Pozzuoli (Napoli), Italy*
**Università degli studi di Napoli "Federico II", Italy*

1-EB-O6 12:45 – 13:00 (A1000)

An AC SQUID susceptometer with a new type of pickup coils for sensitive relaxation measurements on magnetic nanoparticles in suspensions and internalized in cells.

H.J.G.Krooshoop, K.M. Pondman, E.E.C. de Jong, B. ten Haken.

Neuro-Imaging group, MIRA-institute for biomedical technology and technical medicine, University of Twente, P.O.B. 217, 7500 AE Enschede, The Netherlands

13:00 – 14:00 Lunch Break

14:00 – 16:00 Poster Session

"Circuits and Systems"

Chairperson: Spargo

1-EB-I2 (Invited) 16:00 – 16:30 (A1068)

45 GHz operation of Single-Flux-Quantum Reconfigurable Data-Path Processor with 11000 Josephson Junctions

M. Okada^{1,5}, I. Kataeva^{1,5}, M. Tanaka^{1,5}, H. Akaike^{1,5}, A. Fujimaki^{1,5}, N. Yoshikawa^{2,5}, S. Nagasawa^{3,5}, N. Takagi^{4,5}

¹*Department of Quantum Engineering, Nagoya University,* ²*Department of Electrical and Computer Engineering, Yokohama National University,* ³*Superconductivity Research Laboratory, ISTEK,* ⁴*Faculty of Information Engineering, Kyoto University,* ⁵*CREST-JST*

1-EB-O7 16:30 – 16:45 (A1091)

Multi-Layered Single-Flux-Quantum Circuits Designed Using Timing-Driven Automatic Routing

Masamitsu Tanaka¹, Shota Takeshima¹, Kazuyoshi Takagi¹, Hiroyuki Akaike¹, Akira Fujimaki¹, Nobuyuki Yoshikawa², Shuichi Nagasawa³, and Naofumi Takagi⁴

1 Nagoya University, 2 Yokohama National University, 3 International Superconductivity Technology Center, 4 Kyoto University

1-EB-O8 16:45 – 17:00 (A743)

Design and implementation of SFQ Floating-Point Multiplier and Adder Using 10 kA/cm² Nb Process

Y. Shimamura¹, Y. Yamanashi¹, N. Yoshikawa¹, A. Fujimaki², N. Takagi³, K. Takagi³,

¹Yokohama National University, Japan, ²Nagoya University, Japan, ³Kyoto University, Japan

1-EB-O9 17:00 – 17:15 (A629)

A New Methodology to Evaluate and Improve Circuit Operation Verification through Simulation

H. Retief Gerber, Frank G. Ortmann, Jan Pool

NioCAD (Pty) Ltd, Stellenbosch, South Africa

1-EB-O10 17:15 – 17:30 (A922)

NIST High-resolution 10 Volt Programmable Voltage Standards

Paul D. Dresselhaus, S.P. Benz, C.J. Burroughs, M.M. Elsbury

NIST, Boulder Lab, 325 Broadway, MS 817.03, Boulder, Colorado, USA

1-EB-O11 17:30 – 17:45 (A925)

Advances in large-scale high-frequency 'pulse-tube' coolers for HTS applications

P.S. Spoor and J.A. Corey

QDrive, 302 10th Street, Troy, NY 12180

1-EB-O12 17:45 – 18:00 (A528)

DEVELOPMENT OF 4 K TWO-STAGE PULSE TUBE CRYOCOOLERS WITH SPLIT VALVE UNIT

M. Saito¹, H. Takayama¹, A. Tsuchiya¹, M.Y. Xu², K. Nakano²

¹Precision Equipment Group, Sumitomo Heavy Industries, Ltd. 2-1-1, Yato-cho, Nishitokyo-city, Tokyo 188-8585 Japan, ²Research & Development Center, Sumitomo Heavy Industries, Ltd. 2-1-1, Yato-cho, Nishitokyo-city, Tokyo 188-8585 Japan

Oral Session Materials A (Amazon)

“HTS Thin Films 1”

Chairperson: Pedarnig

1-MA-I1 (Invited) 11:00 – 11:30 (A424)

Ink-jet printed coated conductors

I. Van Driessche¹, P. Lommens¹, M. Baecker², B. Holzapfel³, B. A. Glowacki^{4,5}, X. Granados⁶

¹ Ghent University, SCRiPTS, Belgium, ² Zenergy Power GmbH, Germany, ³ IFW- Dresden, Germany, ⁴ University of Cambridge, Department of Materials Science and Metallurgy, UK, ⁵ Institute of Power Engineering, Poland, ⁶ ICMAB-CSIC Barcelona, Spain

1-MA-O1 11:30 – 11:45 (A506)

Tuning of flux pinning in epitaxial $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ films by artificial pinning centers engineering

K. Matsumoto,¹ P. Mele,^{1,2} Y. Honda,¹ I. Tanaka,¹ Y. Ichino,³ Y. Yoshida,³ A. Ichinose⁴

¹ Kyushu Institute of Technology, ² Hiroshima University, ³ Nagoya University, ⁴ CRIEPI

1-MA-O2 11:45 – 12:00 (A632)

Vortex lattice dynamics in nanostructured superconducting/ magnetic hybrids

A. Gomez¹, D. Perez de Lara^{1,2}, A. Alija³, J. del Valle¹, E. M Gonzalez¹, J. I. Martin³, M. Velez³, J. L. Vicent^{1,2}.

¹ Departamento Fisica de Materiales, Facultad Ciencias Fisicas, Universidad Complutense, Madrid (Spain), ² IMDEA-Nanociencia, Cantoblanco, 28049 Madrid (Spain), ³ Departamento Fisica, Universidad de Oviedo-CINN, 33007 Oviedo (Spain).

1-MA-O3 12:00 – 12:15 (A484)

Elastic model of aligned impurity nanorod arrays in YBCO films

Jack Shi and Judy Z. Wu

Department of Physics and Astronomy, University of Kansas, Lawrence, Kansas 66045, USA

1-MA-O4 12:15 – 12:30 (A381)

Integration of predefined gas-phase condensed nanoparticles into $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ thin film multilayers

Maria Sparing, Jens Hänisch, Ingolf Mönch, Ruben Hühne, Sebastian Fähler, Bernd Rellinghaus, Ludwig Schultz and Bernhard Holzapfel

IFW Dresden, P.O. Box: 270116, 01171 Dresden, Germany

1-MA-O5 12:30 – 12:45 (A1113)

Nanoscale modulation of high-temperature superconductivity via ion irradiation: a route to high-field periodic flux pinningI. Swiecicki¹, C. Ulysse³, T. Wolf², X. Hallet⁴, R. Bernard¹, N. Bergeal², J. Briatico¹, L. Piraux⁴, G. Faini³, J. Lesueur² and J. E. Villegas¹*¹Unité Mixte de Physique CNRS/Thales, 91767 Palaiseau, and Université Paris Sud 11, 91405 Orsay, France, ²LPEM, CNRS-ESPCI, 75231 Paris, France, ³CNRS, Phynano Team, Laboratoire de Photonique et de Nanostructures, 91460 Marcoussis, France, ⁴Institut de la Matière Condensée et des Nanosciences, Université catholique de Louvain, Louvain-la-Neuve 1348, Belgique*

1-MA-O6 12:45 – 13:00 (A594)

Flux pinning enhancement in SmBCO film by controlling APCs nanorod length for coated conductor applicationY. Yoshida¹, Y. Ichino¹, A. Turuta¹, K. Matsumoto², A. Ichinose³*Nagoya university¹, Kyushu Institute of Technology², Central Research Institute of Electric Power Industry³***13:00 – 14:00 Lunch Break****14:00 – 16:00 Poster Session****“Critical Currents, Flux Dynamics, Flux Pinning I”**

Chairperson: Durell

1-MA-I2 (Invited) 16:00 – 16:30 (A1166)

Electromagnetic Fields in Superconductors*A.M.Campbell**Dept. of Engineering, Trumpington St, Cambridge, UK*

1-MA-O7 16:30 – 16:45 (A1097)

The scaling law for the critical current density of YBa₂Cu₃O_{7-δ} Coated Conductors as a Function of Magnetic Field, Temperature, Strain and Angle

J. S. Higgins and D. P. Hampshire

Centre for Materials Physics, Superconductivity Group, Durham University, South Road, Durham, DH1 3LE, UK

1-MA-O8 16:45 – 17:00 (A940)

Magneto-optically assisted visualization of the ac magnetic susceptibility of superconducting films at low excitation fields

W. A. Ortiz¹, M. Motta¹, R. Zadorosny¹, F. Colauto¹, T. H. Johansen², R. B. Dinner³, M. G. Blamire³, G. W. Ataklti⁴, V. V. Moshchalkov⁴, and A. V. Silhanek⁴

¹*Departamento de Física, Universidade Federal de Sao Carlos, 13565-905 Sao Carlos, SP, Brazil,* ²*Department of Physics, University of Oslo, POB 1048, Blindern, 0316 Oslo, Norway,* ³*Department of Materials Science, University of Cambridge, Pembroke Street, Cambridge CB2 3QZ, UK,* ⁴*INPAC - Institute for Nanoscale Physics and Chemistry, Nanoscale Superconductivity, and Magnetism Group, K.U.Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium*

1-MA-O9 17:00 – 17:15 (A140)

Quantitative comparison of experimental results on the critical current density with the collective pinning theory in superconductors

M. Zehetmayer and H.W. Weber

Vienna University of Technology, Atominstitut, 1020 Vienna, Austria

1-MA-O10 17:15 – 17:30 (A872)

Dynamic flux avalanches in YBa₂Cu₃O_{7-x} on vicinal substrates

A.J.Qviller, V.V Yurchenko, J.I. Vestgårdén, Y. Galperine and T.H.Johansen

University of Oslo and Center for Materials Science and Nanotechnology, P.O. Box 1048 Blindern, 0316 Oslo, Norway

1-MA-O11 17:30 – 17:45 (A661)

Vortex dynamics in YBCO films with engineered antidots and ferromagnetic Nanostructures

A. Palau¹, V. Rouco¹, C. Monton¹, T. Puig¹, X. Obradors¹

R. Córdoba², J.M. de Teresa²

¹*Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Bellaterra, Barcelona, Spain,* ²*Instituto de Nanociencia de Aragón, Universidad de Zaragoza, E-50009 Zaragoza, Spain*

1-MA-O12 17:45 – 18:00 (A1048)

The critical current density and index of transition of a single-filamentary niobium-titanium superconducting wire as a function of magnetic field, temperature and strain.

Yeekin Tsui and Damian P. Hampshire

Department of Physics, Superconductivity Group, University of Durham, South Road, Durham, DH1 3LE, UK

“Vortex Dynamics”

Chairperson: Cardwell

1-MB-I1 11:00 – 11:30 (A60)

The design of high-Tc superconductors: possibilities and limitations

Jeffery L. Tallon

MacDiarmid Institute for Advanced Materials and Nanotechnology, Industrial Research Ltd., P.O. Box 31310, Lower Hutt, New Zealand

1-MB-O1 11:30 – 11:45 (A886)

Transverse and crossed field behaviour of (RE)BCO bulk superconductors : experiment and modelling

P Vanderbemden¹, M. Philippe¹, J-F Fagnard², M Dirickx², N Hari Babu³, D A Cardwell⁴, Z Hong⁴, T A Coombs⁴ and B Vanderheyden¹

¹ SUPRATECS, Dept. of Electrical Engineering (B28), University of Liège, Belgium, ² SUPRATECS, CISS Dept., Royal Military Academy, Belgium, ³ Brunel University, West London, UK, ⁴ University of Cambridge, Department of Engineering, UK

1-MB-O2 11:45 – 12:00 (A803)

Driving dynamics due to the undercarriage design of transport systems using HTS bearings

L. Kuehn; O. de Haas; B. Holzapfel; L. Schultz

Leibniz Institute for Solid State and Materials Research Dresden

1-MB-O3 12:00 – 12:15 (A649)

Extruded YBCO HTS single domain bulk materials for permanent magnets

D. KENFAUI^{1,2*}, X. CHAUD², E. LOURADOUR³ and J.G. NOUDEM¹

¹ CRISMAT, ENSICAEN/CNRS UMR 6508, Université de Caen Basse-Normandie, 6 Bd Maréchal Juin, 14050 CAEN Cedex, France, ² CNRS / LNCMI-CRETA, B.P. 166, 38042 Grenoble Cedex 09, France, ³ CTI SA, 382 du Moulinas-La Resclause, 30340 Salindres, France

1-MB-O4 12:15 – 12:30 (A495)

Batch production of large size LRE-123 bulk superconductors produced in air and oxygen controlled melt growth process

M. Muralidhar, K. Suzuki, Y. Fukumoto, A. Ishihara and M. Tomita

Railway Technical Research Institute (RTRI), Applied Superconductivity, Materials Technology Division, 2-8-38, Hikari-cho, Kokubuni-shi, Tokyo 185-8540, JAPAN

1-MB-O5 12:30 – 12:45 (A316)

Increased efficiency of batch-processed cold seeded MT-YBCO for motor and fly-wheel applications

W Gawalek¹, T Prikhna², D Litzkendorf¹, T Habisreuther¹, J Bierlich¹, L K Kovalev³

¹Institut fuer Photonische Technologien, Jena, 07702, Germany,

²Institute for Superhard Materials of the National Academy of Sciences of Ukraine Kiev, 04074, Ukraine, ³Moscow State Aviation Institute, 4 Volokolamskoe shosse, 125871 Moscow, Russia

1-MB-O6 12:45 – 13:00 (A180)

The properties of the grain boundaries with different orientations within melt processed Y-Ba-Cu-O bulk materials

Yunhua Shi¹, John Durrell¹, Tony Dennis¹, Hari Babu Nadendla², Christienne Mancini¹ and David Cardwell¹

¹Bulk Superconductivity Group, Department of Engineering, University of Cambridge, Trumpington Street, Cambridge, CB2 1PZ, UK, ²BCAST, Brunel University, UK.

13:00 – 14:00 Lunch Break

14:00 – 16:00 Poster Session

“Pnictide Thin Films”

Chairperson: Putti

1-MB-I2 (Invited) 16:00 – 16:30 (A664)

Growth of Superconducting NdFeAs(O,F) and BaFe₂(As,P)₂ Thin Films by Molecular Beam Epitaxy

T. Kawaguchi^{1,4}, H. Uemura^{1,4}, T. Ohno^{1,4}, A. Sakagami¹, M. Tabuchi^{2,4}, T. Ujihara^{3,4}, Y. Takeda^{1,4}, H. Ikuta^{1,4}

¹Department of Crystalline Materials Science, Nagoya University,

²Venture Business Laboratory (VBL), Nagoya University, ³Department of Materials Science and Engineering, Nagoya University, ⁴JST, Transformative Research-Project on Iron Pnictides (TRIP)

1-MB-O7 16:30 – 16:45 (A374)

Critical current scaling and anisotropy in oxypnictide superconductors

S. Haindl, M. Kitzun, T. Thersleff, A. Kauffmann, J. Hänisch, K. Iida, J. Freudenberger, L. Schultz, B. Holzapfel

IFW Dresden, Institute for Metallic Materials, Helmholtzstrasse 20, 10169 Dresden, Germany

1-MB-O8 16:45 – 17:00 (A435)

Superconducting properties of FeSe_{0.5}Te_{0.5} thin films with critical temperature enhanced by biaxial compressive strain.C.Ferdeghini¹, E.Bellingeri¹, S. Kawale¹, I.Pallecchi¹, R.Buzio¹, A.Gerbi¹, D.Marrè^{1,2}, M.R.Cimberle³, M.Tropeano^{1,2}, M.Putti^{1,2}, A. Palenzona^{1,2}, M. Eisterer⁴, R. Raunicher⁴, H. W. Weber⁴, C.Tarantini⁵¹ CNR-SPIN c. Perrone 24, Genova, Italy, ²Università di Genova, Via Dodecaneso 33, Genova, Italy, ³ CNR-IMEM, Via Dodecaneso 33, Genova, Italy, ⁴ Atominstitut, Vienna University of Technology, Stadionallee 2, Vienna, Austria, ⁵Applied Superconductivity Center, NHMFL, Florida State University, Tallahassee, USA

1-MB-O9 17:00 – 17:15 (A335)

Microstructural development in Fe_ySe_{1-x}Te_x superconducting thin films grown by RF sputteringS.C. Speller¹, C. Aksoy^{1,2}, M. Saydam^{1,2}, H. Taylor¹, G. Burnell³, A.T. Boothroyd⁴, C.R.M. Grovenor¹¹ Department of Materials, University of Oxford, UK, ² Karadeniz Technical University, Trabzon, Turkey, ³ School of Physics and Astronomy, University of Leeds, UK, ⁴ Department of Physics, University of Oxford, UK

1-MB-O10 17:15 – 17:30 (A331)

Fabrication and characterisation of high-quality Fe-Te-Ch (Ch = Se, S) and FeSe_x (x = 0.9, 1) epitaxial filmsP. Mele^{1,2}, K. Matsumoto^{2,3}, S. Fujita², K. Nagayoshi², S. Yamane², Y. Yoshida^{3,4}, Y. Ichino^{3,4}, T. Kiss^{3,5}, A. Ichinose^{3,6}, B. Maiorov⁷, F.F. Fedorov⁷, S.A. Baily⁷, L. Civale⁷*Hiroshima University*¹, *Kyushu Institute of Technology*², *TRIP-JST*³, *Nagoya University*⁴, *Kyushu University*⁵, *CRIEPI*⁶, *Los Alamos National Laboratory*⁷

1-MB-O11 17:30 – 17:45 (A42)

Pinning properties and upper critical field in pnictidesC. Tarantini¹, S. Lee², J. Jiang¹, J.D. Weiss¹, F. Kametani¹, E.E. Hellstrom¹, J. Jaroszynski¹, F. Balakirev¹, C.W. Bark², C.M. Folkman², S.H. Baek², H.H. Wen³, E. Bellingeri⁴, I. Pallecchi⁴, C. Ferdeghini⁴, C.B. Eom², D.C. Larbalestier¹¹ National High Magnetic Field Laboratory, Florida State University, ² Department of Materials Science and Engineering, University of Wisconsin, ³ Institute of Physics and National Laboratory of Condensed Matter Physics, Beijing, China, ⁴ CNR-SPIN and Department of Physics, University of Genova, Italy

1-MB-O12 17:45 – 18:00 (A923)

C-axis correlated pinning in Co-doped Ba-122 thin films

J. Hänisch, K. Iida, E. Reich, T. Thersleff, S. Haindl, B. Holzapfel

IFW Dresden, P.O. Box: 270116, 01171 Dresden, Germany

Oral Session Large Scale A (Yangtze 1)

“Motors, Generators and SMES”

Chairperson: Luongo

1-LA-I1 11:00 – 11:30 (A392)

Test results from Siemens low-speed, high-torque HTS machine and description of further steps towards commercialization of HTS machines

Wolfgang Nick, Joern Grundmann, Joachim Frauenhofer

Siemens AG, Corporate Technology and Siemens AG, Industry Sector, Drive Technology, Large Drives

1-LA-O1 11:30 – 11:45 (A351)

AC losses of coated conductor HTS coils in background fields

W. Yuan, Y. Chen, K. Matsuda and T. A. Coombs

Engineering Department, University of Cambridge, UK

1-LA-O2 11:45 – 12:00 (A1008)

Multi-Functional Current Multiplier by High Temperature Superconducting Magnet Energy Storage

S. Yamada¹, Y. Hishinuma¹, and Y. Aso²

¹*National Institute for Fusion Science, Gifu 509-5292, JAPAN*

²*The Japan Steel Works, Ltd., Hiroshima 736-8602, JAPAN*

1-LA-O3 12:00 – 12:15 (A185)

Development of a novel prototype synchronous generator with HTS armature windings and permanent magnet rotor

Timing Qu^{a,b}, Peng SONG^b, Xiaoyu YU^b, Chen GU^b, Pan ZEN^{a,b}, and Zhenghe HAN^b

^a *Department of Mechanical Engineering, Tsinghua University, Key Laboratory for Advanced Materials Processing Technology, Ministry of Education, Beijing 100084, China,* ^b *Applied Superconductivity Research Center, Department of Physics, Tsinghua University, Beijing 100084, China*

1-LA-O4 12:15 – 12:30 (A410)

Electrical machines on the base of bulk YBCO elements and permanent magnets

L.K.Kovalev, K.L.Kovalev, V.N.Poltavets, R.I.Ilyasov, D.S.Dezhin, A.E.Larionoff

Moscow Aviation Institute (State Technical University), Moscow, Russia

1-LA-O5 12:30 – 12:45 (A1140)

Continues Current motor that use superconductor HTS High Strength Plus Wire

¹Benjamín Millán, John Boekhoudt², Mohamed Abatal², J. Samuel Millán²

¹*Facultad de Ciencias, Universidad Nacional Autónoma de México, Huachinango L 1-C M10 San Jerónimo Aculco, C.P. 10400, México D.F., México,* ²*Facultad de Ingeniería, Universidad Autónoma del Carmen, Cd. del Carmen, C.P. 24180, Campeche, México.*

1-LA-O6 12:45 – 13:00 (A913)

Design study of coated conductor direct drive wind turbine generator for small scale demonstration

Asger B. Abrahamsen¹ and Bogi B. Jensen²

¹*Materials Research Division, Risø DTU, Technical University of Denmark, 4000 Roskilde, Denmark,* ²*Department of electrical engineering, Technical University of Denmark, 2800 Lyngby, Denmark*

13:00 – 14:00 Lunch Break

14:00 – 16:00 Poster Session

“Motors and Generators”

Chairperson: Vysotski

1-LA-I2 (Invited) 16:00 – 16:30 (A1018)

Advantages of High Temperature Superconductor Technology for Offshore Wind Turbines

Bruce Gamble¹, Greg Snitchler¹, Peter Winn¹, Michael Swartz², Rudolf Krall²

¹*AMSC Superconductors, Devens, USA;* ²*AMSC Windtec, Klagenfurt am Wörthersee, Austria*

1-LA-O7 16:30 – 16:45 (A1014)

A Transverse Flux High-Temperature Superconducting Generator Topology for Large Direct Drive Wind Turbines

Ozan Keysan* Markus Mueller

Institute for Energy Systems, University of Edinburgh, United Kingdom

1-LA-O8 16:45 – 17:00 (A693)

Project SUTOR: Superconducting Speed-Controlled Torque Motor for 25.000 Nm

B. Oswald, A.T.A.M. de Waele, M. Soell, T. Reis, J. Oswald

1-LA-O9 17:00 – 17:15 (A403)

HTS machine laboratory prototype

Nenad Mijatovic¹, Bogi B. Jensen¹, Chresten Træholt¹, Asger B. Abrahamsen², Victor M.R. Zermeno³, Niels F. Pedersen³

¹ Department of Electrical Engineering, Technical University of Denmark, 2800 Lyngby, DK, ² Department of Material Science, National Laboratory for Sustainable Energy DTU-RISØ, 800 Roskilde, DK,

³ Departments of Mathematics, Technical University of Denmark, 2800 Lyngby, DK

1-LA-O10 17:15 – 17:30 (A1056)

Extended magnetization of superconducting pellets in highly inhomogeneous magnetic field

R Maynou¹, J Lopez¹, X Granados², R Torres¹

¹EUETIB-UPC, Barcelona, Spain; ²ICMAB-CSIC, Bellaterra, Spain

1-LA-O11 17:30 – 17:15 (A825)

Investigation of Iron-cored Structure in HTS Synchronous Machine for Industrial Applications

M. Yazdanian, P. Elhaminia, M.R. Zolghadri, M. Fardmanesh

Electrical Engineering Department, Sharif University of Technology

1-LA-O12 17:45 – 18:00 (A786)

Simulation of a HTS Synchronous Superconducting Generator

Victor M.R. Zermeno¹, Asger B. Abrahamsen², Nenad Mijatovic³, Mads Peter Sorensen¹, Bogi B. Jensen³, Niels F. Pedersen¹

¹ Department of Mathematics, Technical University of Denmark, 2800 Lyngby, DK, ² Materials Research Division, National Laboratory for Sustainable Energy, Risø DTU, 4000 Roskilde, DK, ³ Department of

Electrical Engineering, Technical University of Denmark, 2800 Lyngby, DK

Oral Session Large Scale B (Yangtze 2)

“LTS Magnets”

Chairperson: Green

1-LB-I1 (Invited) 11:00 – 11:30 (A789)

Highly reliable operation and improvement history of the LHD superconducting system

T. Mito, S. Imagawa, K. Takahata, N. Yanagi, S. Yamada, S. Hamaguchi, A. Iwamoto, H. Chikaraishi, T. Obana, H. Tamura, S. Moriuchi, K. Oba, S. Takami, S. Iima, H. Yamada, Y. Takeiri and LHD group

National Institute for Fusion Science (NIFS)

1-LB-O1 11:30 – 11:45 (A1051)

High Vacuum Magnet for the “BOREAS” Beamline 29, and Its Scattering Endstation of the ALBA Synchrotron,

M. Vallvidares¹, X. Granados², S. Ferrer¹, X. Obradors²

¹ALBA-CELLS Synchrotron Light Facility, Cerdanyola del Vallès, Barcelona, Spain, ²Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Bellaterra, 08193 Barcelona, Spain

1-LB-O2 11:45 – 12:00 (A1073)

A novel system for providing a 4.5 Tesla rotating vector combined with ultra low temperature capability to study quantum effects in semiconductor nanostructures

R. Mitchell*, G. Frossatti**, A.R. Hamilton***

*Cryogenic Ltd, 29,30,31 and 32 Acton Park Estate London W3 7QE, UK, **Leiden Cryogenics b.v., Kenauweg 11, 2331 BA Leiden, The Netherlands, ***School of Physics, University of New South Wales, Sydney, NSW 2052 Australia

1-LB-O3 12:00 – 12:15 (A170)

SST-1 Magnet System Refurbishment: an Update

Subrata Pradhan & SST-1 Mission Team

Institute for Plasma Research, Bhat, Gandhinagar 382 428, Gujarat

1-LB-O4 12:15 – 12:30 (A172)

Complex thermal and flow-dynamic analysis of ITER Central Solenoid with Venecia software package

D. Arslanova, A. Belov, D. Bessette, I. Gornikel, V. Kalinin,
M. Kaparkova, V. Kukhtin, N. Mitchell, N. Shatil, S. Sychevsky,
V. Vasiliev

D. Bessette, and N. Mitchell are with ITER Organization, Cadarache, France. I. Gornikel, V. Kalinin and D. Arslanova are with the Alphysica GmbH, Karlsruhe, Germany, A. Belov, M. Kaparkova, V. Kukhtin, N. Shatil, S. Sychevsky and V. Vasiliev are with the Efremov's Institute, St. Petersburg, Russia

1-LB-O5 12:30 – 12:45 (A169)

Designs of Superconducting Higher Multipole Magnets for FRIB

M A. Green, S. S. Chouhan, and A. F. Zeller

FRIB, NSCL, Michigan State University, East Lansing MI 48824, USA

1-LB-O6 12:45 – 13:00 (A1022)

Intra-strand resistance and current transfer length in various NbTi and Nb₃Sn strands

C. Zhou¹, W.A.J. Wessel¹, E.P.A. van Lanen¹, Y. Miyoshi¹, H.H.J. ten Kate^{1,2}, M.J. Dhallé¹, A. Nijhuis¹

1. Energy, Materials and Systems (EMS) group, Faculty of Science and Technology; and with the IMPACT Research Institute, University of Twente, The Netherlands (e-mail: C.Zhou@tnw.utwente.nl).

2. CERN, Geneva, Switzerland.

13:00 – 14:00 Lunch Break

14:00 – 16:00 Poster Session

“HTS Magnets”

Chairperson: Vedrine

1-LB-I2 (Invited) 16:00 – 16:30 (A773)

Research and development of fundamental technologies for accelerator magnets using high T_c superconductors

Naoyuki Amemiya¹, Keita Takahashi¹, Taketsune Nakamura¹, Yoshiharu Mori¹, Toru Ogitsu², Kei Koyanagi³, Takeshi Yoshiyuki³, Koji Noda⁴, and Masahiro Yoshimoto⁵

¹Kyoto University, ²High Energy Accelerator Research Organization,

³Toshiba Corporation, ⁴National Institute of Radiological Sciences,

⁵Japan Atomic Energy Agency

1-LB-O7 16:30 – 16:45 (A708)

Recent Developments in 2G HTS Coil Technology

D.W. Hazelton, F. Roy, P. Brownsey
SuperPower Inc., Schenectady, NY

1-LB-O8 16:45 – 17:00 (A1055)

Development of Bi-2212 Insert Coils for Ultra High Field Magnet Applications

Ziad Melhem , Steve Chappell, Steven Ball,
Oxford Instrument NanoScience, Tubney Woods, Abingdon, OX13 5QX, UK

1-LB-O9 17:00 – 17:15 (A468)

Heat Treatment Optimizations for Wind-and-React Bi-2212 Race-track Coils

A. Godeke, D.W. Cheng, D.R. Dietderich, H.C. Higley, N.L. Liggins, S.O. Prestemon
Lawrence Berkeley National Laboratory, One Cyclotron Rd., Berkeley, CA 94720, USA

1-LB-O10 17:15 – 17:30 (A75)

Design optimization and prototype fabrication of HTS magnets

C. Boffo^a, P. Revilak^a, J. Stainmann^a, W. Walter^a
a. Babcock Noell GmbH, Alfred-Nobel-str. 20, 97070 Würzburg, GERMANY. Cristian.boffo@bng.bilfinger.com

1-LB-O11 17:30 – 17:45

Cancelled

1-LB-O12 17:45 – 18:00 (A706)

Dipole Magnet from YBCO High Tc Superconductor

Gunver Nielsen¹, Nikolaj Zangenberg², Drew Hazelton³, Nils Hauge¹, Bjarne Roger Nielsen¹, Søren Pape Møller⁴, and Arnd Baurichter¹
¹*Danfysik A/S, Moellehaven 16, DK-4040 Jyllinge, Denmark,* ²*Danish Technological Institute, Aarhus, Denmark,* ³*SuperPower, Inc., Schenectady, NY, USA,* ⁴*ISA, Aarhus University, Aarhus, Denmark*

“AC Losses”

Chairperson: Kiss

1-WT-I1 (Invited) 11:00 – 11:30 (A912)

Current Sharing and AC losses in Coated Conductor Roebel Cables

M. D. Sumption¹, M. Majoros¹, W. Goldacker², A. Nijhuis³, and E. W. Collings¹

¹CSMM, Department of Materials Science and Engineering, The Ohio State University, Columbus 43210, USA

²Karlsruhe Institute of Technology

³Low Temperature Division, Faculty of Applied Physics, University of Twente, Enschede, NL

1-WT-O1 11:30 – 11:45 (A568)

Self-field effects, $J_c(B)$ dependence and ac losses in ROEBEL-assembled YBCO coated conductor cables

F. Grilli¹, E. Pardo² and M. Vojenčiak³

¹Karlsruhe Institute of Technology, Karlsruhe, Germany, ²Slovak Academy of Sciences, Bratislava, Slovakia, ³Karlsruhe Institute of Technology, Karlsruhe, Germany

1-WT-O2 11:45 – 12:00 (A589)

Reduction of AC-loss by fabricating multi-filamentary structure on coated conductors

Takato Machi, Koichi Nakao and Keiichi Tanabe

Superconductivity Research Laboratory, ISTEC, 1-10-13 Shinonome, Koto-ku, Tokyo 135-0062, Japan

1-WT-O3 12:00 – 12:15 (A1149)

Study of electric characteristics of high pressure synthesized MgB_2 bulk samples

Meerovich Victor^{1, a}, Sokolovsky Vladimir^{1, b}, Prikhna Tatiana^{2, c} and Gawalek Wolfgang^{3, d}

¹Physics Department, Ben-Gurion University of the Negev, Beer-Sheva, 84105, Israel, ²Institute for Superhard Materials of the National Academy Sciences of Ukraine, 2, Avtozavodskaya St., Kiev, 04074, Ukraine,

³Institut für Photonische Technologien, Albert-Einstein Strasse 9, Jenna, D-07745, Germany

1-WT-O4 12:15 – 12:30 (A355)

Deposition Of Silver on YBCO 2G Coated Conductors Using A Direct Write Technique

M. Osofsky¹, Michael Browning¹, A. Piqué¹, Naval Research Laboratory, Washington, DC, USA; K. Metkus², J. H. Claassen², NOVA Research, Inc., Alexandria, VA, USA; M. Rupich³ and S. Sathyamurthy³

¹Naval Research Laboratory, Washington, DC, U.S.A., ²NOVA Research, Inc., Alexandria, VA, U.S.A., ³American Superconductor, Inc., Devens, MA, U.S.A.

1-WT-O5 12:30 – 12:45 (A375)

Quench Behaviour of Wide Coated Conductor Tapes and their Assemblies within a Shunt Structure

T. D. Withnell^a, F. Mumford^b, A. Rutt^a, A. Usoskin^a

^aBruker HTS GmbH, Alzenau, Germany, ^bAlstom Grid Research & Technology Centre (ART), Stafford, UK

1-WT-O6 12:45 – 13:00 (A902)

Low loss high current 2G-Cables for Power applications

W. Goldacker and S.I. Schlachter

Karlsruhe Institute of Technology, ITEP, Karlsruhe, Germany

13:00 – 14:00 Lunch Break

14:00 – 16:00 Poster Session

“LTS, MgB₂ and BSCCO”

Chairperson: Flükiger

1-WT-O7 16:00 – 16:15 (A237)

Progress in Superconducting Performances of DI-BSCCO Wires

S. Kobayashi, T. Nakajima, S. Yamade, M. Kikuchi, K. Yamazaki, T. Kagiya, K. Hayashi, and K. Sato

Sumitomo Electric Industries, Ltd., 1-1-3, Shimaya, Konohana-ku, Osaka, 554-0024, Japan

1-WT-O8 16:15 – 16:30 (A779)

Comparison of flux pinning mechanisms in MgB₂ wires of various composition annealed under high pressure.T. Cetner¹, A. Morawski¹, K. Adamczyk¹, M. Rindfleisch², M. Tomsic², A. Zaleski³, D. Gajda⁴, A. Presz¹, R. Diduszko⁵

¹ Institute of High Pressure Physics, Polish Academy of Sciences, Warszawa, Poland, ² Hyper Tech Research, Inc., 1275 Kinnear Road, Columbus, OH 43212 United States, ³ Instytut of Low Temperature and Structure Research Polish Academy of Sciences, Wrocław, Poland
⁴ International Laboratory of High Magnetic Fields and Low Temperatures, Wrocław, Poland, ⁵ Institute of Tele- and Radiotechnic, Warszawa, Poland

1-WT-O9 16:30 – 16:45 (A673)

New high pressure densification process for enhancing J_c and B_{irr} in *in situ* MgB₂ wires of industrial lengthsR. Flükiger^{1,2}, M. Kulich², M.S.A. Hossain², C. Senatore^{1,2}

¹ Department of Condensed Matter Physics, ² Department of Applied Physics, University of Geneva, 1211 Geneva, Switzerland

1-WT-O10 16:45 – 17:00 (A27)

Jelly Roll processed Nb₃Sn wires with improved superconducting performancesK. Tachikawa¹⁾, T. Ando¹⁾, N. Kaneda¹⁾ and T. Takeuchi²⁾

¹⁾ Tokai University ²⁾ National Institute for Materials Science

1-WT-O11 17:00 – 17:15 (A159)

Cu Diffusion in Nb₃Sn Internal Tin SuperconductorIan Pong¹, Luc-Rene Oberli², Luca Bottura²

¹ ITER Organization, Route de Vinon sur Verdon, 13115 Saint Paul Lez Durance, France, ² European Organisation for Nuclear Research (CERN), CH-1211, Geneva-23, Switzerland

1-WT-O12 17:15 – 17:30 (A348)

Fabrication of superconducting wire for FeSe family using diffusion processToshinori Ozaki^{1,3}, Keita Deguchi^{1,2,3}, Yoshikazu Mizuguchi^{1,2,3}, Yasuna Kawasaki^{1,2,3}, Takahide Yamaguchi^{1,3}, Shunsuke Tsuda^{1,3}, Hiroaki Kumakura^{1,2,3}, Yoshihiko Takano^{1,2,3}

¹National Institute for Materials Science, Japan, ²University of Tsukuba, 1-1-1Tennodai, Tsukuba, Ibaraki 305-0047, Japan, ³JST, Transformative Research-project on Iron Pnictides

1-WT-O13 17:30 – 17:45 (A857)

Development of ex-situ MgB₂ wire architectures for DC and AC applications

G. Grasso, S. Berta, S. Brisigotti, V. Cubeda, M. Palombo and A. Tumino

Columbus Superconductors SpA, Via delle Terre Rosse, 30, 16133 Genoa, ITALY

1-WT-O14 17:45 – 18:00 (A380)

Evolution of the Pinning Force of NbTi Filaments as a Function of Isothermal Annealing Time

C. Fiamozzi Zignani¹, G. De Marzi¹, L. Muzzi¹, J. Somerkoski²

¹ *ENEA C.R. Frascati*, ² *Luvata Pori Oy, Kuparitie 5, FI-28330 Pori, Finland*

14:00 – 16:00

Electronics: Devices and Fabrication I

Chairperson: Villigier

1-EA-P1 (A48)

Universal character of tunnel conductivity of metal-insulator-metal heterostructures with nanosized oxide barriers.

V.E.Shaternik¹, M.A.Belogolovskii², T.A.Prikhna³, A.P.Shapovalov³, O.V.Prokopenko⁴, D.V. Jabko⁴, O.V.Kudrja⁴, O.V.Suvorov¹, V.L.Noskov¹

¹ G.V.Kurdyumov Institute for Metal Physics of National Academy of Sciences of Ukraine, , Kyiv -142, Ukraine, ² Donetsk Institute for Physics and Engineering, National Academy of Sciences of Ukraine, Donetsk, Ukraine, ³ Institute for Superhard Materials of National Academy of Sciences of Ukraine, Kyiv, Ukraine, ⁴ T. Shevchenko National University of Kyiv, Faculty of radiophysics, Kyiv, Ukraine

1-EA-P2 (A156)

Advanced four-layered Josephson junctions for digital applications

V. Lacquaniti¹, N. De Leo¹, M. Fretto¹, A. Sosso¹, M. Belogolovskii²

¹ INRIM, Istituto Nazionale di Ricerca Metrologica, Strada delle Cacce, 91 10135 Torino (Italy), ² Institute for Physics and Engineering, National Academy of Sciences of Ukraine, Str. R. Luxemburg 72, 83114 Donetsk (Ukraine)

1-EA-P3 (A157)

Sub-micron SNIS Josephson junctions for metrological application

N. De Leo, M. Fretto, E. Enrico, L. Boarino, V. Lacquaniti

INRIM, Istituto Nazionale di Ricerca Metrologica, Strada delle Cacce, 91 10135 Torino (Italy)

1-EA-P4 (A333)

Characterization of moderately damped low Tc Josephson junctions through measurements of switching current distributions

Davide Massarotti^{1,2,*}, Luigi Longobardi^{3,2}, Giacomo Rotoli³, Daniela Stornaiuolo², Gianpaolo Papari⁴, Akira Kawakami⁵, Giovanni Piero Pepe^{1,2}, Antonio Barone^{1,2} and Francesco Tafuri^{3,2}.

¹Università degli Studi di Napoli "Federico II", Dipartimento di Scienze Fisiche, Napoli, Italy. ²CNR-SPIN UOS Napoli, Complesso Universitario di Monte Sant'Angelo, Napoli, Italy. ³Seconda Università degli Studi di Napoli, Dipartimento di Ingegneria dell'Informazione, Aversa, Italy.

⁴NEST, CNR-NANO and Scuola Normale Superiore, Pisa, Italy, ⁵Kobe Advanced ICT Research Center, National Institute of Information and Communications Technology, Kobe, Japan.

1-EA-P5 (A520)

Fabrication Process of Small Trilayer Josephson Junctions using CMP Planarization

T. Satoh¹, T. Maruyama², Y. Noguchi³, M. Tsukahara³, S. Nagasawa¹, K. Hinode¹, M. Hidaka¹, M. Maezawa³, T. Horikawa³

ISTEC-SRL¹, NTT-AT², AIST³, Japan

1-EA-P6 (A637)

Resistively shunted NbN/AlN/NbN tunnel junctions for single flux quantum circuits

Kazumasa Makise, Hirotaaka Terai and Zhen Wang

Kobe Advanced ICT Research Center (KARC), National Institute of Information and Communications Technology (NICT), 588-2 Iwaoka Kobe Hyogo 651-2492, Japan

1-EA-P7 (A5)

Twenty years ion modified high-T_c Josephson junctions and SQUIDs

S. S. Tinchev

Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria

1-EA-P8 (A213)

Effect of thickness on performance of YBCO-based step-edge Josephson junctions

O. V. Shcherbakova¹, A. V. Pan¹, S. Fedoseev¹, S. Rubanov¹, S. X. Dou¹, J. Du², S. K. H. Lam², and C. P. Foley²

¹*Institute for Superconducting and Electronic Materials, University of Wollongong, Northfields Avenue, Wollongong, NSW 2522, Australia,*

²*CSIRO Materials Science and Engineering, Lindfield, PO Box 218, NSW 2070, Australia*

1-EA-P9 (A334)

HTS junctions for high frequency applications

D. Stornaiuolo^{1,*}, D. Massarotti^{2,1}, G. Papari³, L. Longobardi⁴, A. Barone^{1,2} and F. Tafuri^{1,3}.

¹ *CNR-SPIN UOS Napoli, Complesso Universitario di Monte Sant'Angelo, Napoli, Italy,* ² *Università degli Studi di Napoli Federico II, Dipartimento di Scienze Fisiche, Napoli, Italy,* ³ *NEST, CNR-NANO and Scuola Normale Superiore, Pisa, Italy,* ⁴ *Seconda Università degli Studi di Napoli, Dipartimento di Ingegneria dell'Informazione, Aversa, Italy.*

1-EA-P10 (A581)

Electrical properties of niobium and niobium nitride based NIS tunnel junctions

S. Chaudhuri, M. R. Nevala, J. Halkosaari and I. J. Maasilta

Nanoscience Center, Department of Physics, FI-40014 University of Jyväskylä, Finland

1-EA-P11 (A1110)

Effect of preparation conditions on the gap voltage in NbN/AlN_x-Al/NbN tunnel junctions

H. Akaike, N. Naito, T. Funai, A. Fujimaki

*Department of Quantum Engineering, Nagoya University, Nagoya, Japan***Electronics: Circuits and Systems I**

Chairperson: Kataeva

1-EA-P12 (A1141)

Single Flux Quantum Comparator: A study of Gray Zone Width and Operation Frequency in dependence on circuit parametersTomoya Imaizumi¹ Yuki Yamanashi² Nobuyuki Yoshikawa¹ Thomas Ortlepp³*¹ Department of Electrical and Computer Engineering, Yokohama National University, ² Interdisciplinary Research Center, Yokohama National University, ³ Department of Electrical Engineering and Computer Sciences, University of California, Berkeley*

1-EA-P13 (A927)

High-speed superconducting digital circuits with Nb-Si-barrier Josephson junctionsD. Olaya¹, P. D. Dresselhaus¹, S. P. Benz¹, H. Rogalla¹, A. Herr², and Q. P. Herr²*¹ National Institute of Standards and Technology, 325 Broadway, Boulder, CO 80305 USA, ² Northrop Grumman Electronic Systems, 1580 West Nursery Road, Linthicum, MD 21090 USA*

1-EA-P14 (A946)

Design of Digital DROS with SFQ Feedback Circuit for SQUID Array with Wide Dynamic Operation Range

Hiroaki Myoren, Kosuke Terui, Naoya Shimada and Tohru Taino

Graduate School of Science and Engineering, Saitama University, 255 Shimo-okubo, Sakura-ku, Saitama 338-8570, JAPAN

1-EA-P15 (A85)

Analysis of computational energy efficiency in single flux quantum electronics by implementing an integer-based hardware-algorithm

Y. Shimamura¹, N. Yoshikawa¹, T. Ortlepp²

¹ *Yokohama National University*, ² *University of California Berkeley*

1-EA-P16 (A86)

Improvement of a flash-type SFQ A/D converter using a current density of 10kA/cm² Nb/AIO_x/Nb process

H. Suzuki¹, M. Oikawa¹, K. Nishii¹, K. Ishihara², and M. Hidaka¹

¹ *Superconductivity Research Lab., ISTEK, 1-10-13, Shinonome, Koto-ku, Tokyo, 135-0062, Japan*, ² *Tokyo Denki University*

1-EA-P17 (A689)

Experimentally verified inductance extraction for superconductive integrated circuit wires crossing ground plane holes

C.J. Fourie¹, O. Wetzstein², J. Kunert², H.-G. Meyer² and H. Toepfer³

¹*Department of Electrical and Electronic Engineering, Stellenbosch University, South Africa*, ²*Institute of Photonic Technology, Jena, Germany*, ³*Ilmenau University of Technology, Germany*

1-EA-P18 (A487)

Noise behavior of SQUID bootstrap circuit studied by numerical simulation

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1-EA-P19 (A565)

Cancelled

Electronics: SQUIDs I

Chairperson: Meyer, Matlashov

1-EA-P20 (A223)

Improved Characteristics of Integrated HTS rf SQUID on Bicrystal SrTiO₃ Substrate Resonator Covered with HTS Thin Films in Flip-Chip Geometry

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1-EA-P21 (A250)

Magnetic shielding simulation of superconducting film shield covering directly coupled HTS dc-SQUID magnetometer

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1-EA-P22 (A570)

Integrated directly-coupled SQUID magnetometer and gradiometer

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1-EA-P23 (A525)

Performance of compensated High-T_c flip-chip SQUID Gradiometers for Marine Surveying

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1-EA-P24 (A246)

LTS SQUID system with wide pickup coil for detecting small metallic particles

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1-EA-P25 (A269)

Prediction of Initiation Site of Destruction of Flat Braided Carbon Fiber Composites Using HTS-SQUID Gradiometer

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1-EA-P26 (A523)

Multi-channel High T_c SQUID Detection System for Metallic Contaminants

Y. Kitamura¹, R. Kurosawa¹, Y. Hatsukade¹, T. Ohtani², S. Suzuki² and S. Tanaka¹

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1-EA-P27 (A364)

Direct neuronal current detection by SQUID based low field NMR: a feasibility study in a phantom

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1-EA-P28 (A535)

Detecting biomolecules using high-T_c SQUID-detected nuclear magnetic resonance

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1-EA-P29 (A510)

Modified spin echo method for ultra low-field functional magnetic resonance imaging

Masanori Higuchi, Daisuke Oyama and Gen Uehara

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1-EA-P30 (A573)

Development of a SQUID-based low field NMR/MRI system

Masakazu Miyamoto, Junichi Hatta, Daisuke Oyama, Jun Kawai, Yoshiaki Adachi, Gen Uehara

Applied Electronics Laboratory, Kanazawa Institute of Technology

1-EA-P31 (A1176)

Mixed sensor coupled to a Nb detection coil for LF-NMR

R. Sinibaldi⁺, S. Della Penna⁺, J.O. Nieminen⁺, G. Tamburro⁺, P. Chiacchiarretta⁺, C. De Luca⁺, A. Manna⁺, A. Galante[#], M. Pannetier-Lecoœur[^], C. Fermon[^], V. Pizzella⁺ and G.L. Romani⁺

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1-EA-P32 (A676)

Comparison of operation characteristics and noise performance in whole-head magnetoencephalography systems depending on the cooling and shielding method

Yong-Ho Lee, Kwon-Kyu Yu, Hyukchan Kwon, Kiwoong Kim, Jin-Mok Kim and Yong-Ki Park

Korea Research Institute of Standards and Science

1-EA-P33 (A966)

Three-Dimensional Nanoscale Superconducting Devices

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1-EA-P34 (A851)

Subarctic geo-exploration with an HTS-TEM System

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1-EA-P35 (A849)

Near surface magnetic exploration with SQUID based full tensor instrument

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1-EA-P36 (A672)

Characteristics of low-noise multichannel magnetocardiography system for accurate diagnosis of heart diseases using imaging of myocardium current activity

Yong-Ho Lee, Kwon-Kyu Yu, Kiwoong Kim, Hyukchan Kwon, Jin-Mok Kim and Yong-Ki Park

Korea Research Institute of Standards and Science

1-EA-P37 (A882)

Modelling and inversion of geomagnetic SQUID gradiometer data

M.Schneider⁽¹⁾, S.Linzen⁽¹⁾, H.-P. Baumgartl⁽¹⁾, K.Hartung⁽²⁾, S. Dunkel⁽³⁾, R.Stolz⁽¹⁾, and H.-G. Meyer⁽¹⁾

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1-EA-P38 (A1075)

Partial vortices in FeSe_{0.3}Te_{0.7} thin film observed by Scanning SQUID Microscope

Sing- Lin, Wu^{a,c}, Jiu-Yong, Luo^a, Chen-En, Wu^a, Der-Chung, Yan^c, Hsian-Hong, Chang^c, Ming-Jye, Wang^b, Maw-Kuen, Wu^a, Cheng-Chung, Chi^c

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1-EA-P39 (A628)

Photo-induced resistive transition of YBCO Josephson junctions and nanobridges excited by femtosecond laser pulses

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1-EA-P70 (A1182)

Low field MRI with magnetoresistive-based sensor

M. Pannetier-Lecoq, C. Fermon, H. Dyvorne, Q. Herreros, G. Le Goff and G. Cannies.

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Electronics: Detectors and Readout Circuits I

Chairperson: Irwin, Meyer, Wang

1-EA-P40 (A694)

Detectivity optimization of membrane type HTS bolometers

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1-EA-P41 (A869)

Radiation hardness properties of local magnetic field and THz detectors based on nanostructured YBCO films

R. Gerbaldo¹, G. Ghigo¹, L. Gozzelino¹, F. Laviano¹, B. Minetti¹, R. Cherubini²

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1-EA-P42 (A930)

Cancelled

1-EA-P43 (A787)

Characterizing Low-Noise Transition Edge Sensor Arrays for SAFARI

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1-EA-P44 (A829)

Hybrid Microwave Multiplexers for Superconducting Detector Arrays

K.D. Irwin¹, H.M. Cho¹, W.B. Doriese¹, J.W. Fowler¹, J. Gao¹, G. C. Hilton¹, K.W. Lehnert², J.A.B. Mates¹, C. D. Reintsema¹, G.M. Stiehl¹, J.N. Ullom¹, and L.R. Vale¹

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1-EA-P45 (A959)

Optical characterisation of SAFARI bolometers

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1-EA-P46 (A1131)

Large-format superconducting transition edge sensors arrays for CMB polarimetry

Hsiao-Mei Cho for TRUCE collaboration,
NIST-Boulder, CO, USA

1-EA-P47 (A1002)

Hot-Electron TES for Far-IR Spectroscopy and Mid-IR Single-Photon Calorimetry

Boris Karasik^a, Robin Cantor^b, Sergey Pereverzev^a, Daniel Santavicca^c, Faustin Carter^c, and Daniel Prober^c, David Olaya^d, and Michael Ger-shenson^d

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1-EA-P48 (A40)

Hilbert Spectral Analysis of THz Radiation Sources by High- T_c Josephson Detectors

Y. Divin, M. Lyatti, U. Poppe

PGI, Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany

1-EA-P49 (A232)

Pulse height distribution analysis for superconducting nano-stripline ion detector with fast pulse-integration analog-to-digital converter

K. Suzuki¹, M. Ukibe¹, S. Shiki¹, S. Miki², Z. Wang², Y. Takahashi³, N. Yoshikawa³, and M. Ohkubo¹

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1-EA-P50 (A580)

Design and Implementation of SFQ Multi-Stop Time-to-Digital Converters for Time-of-Flight Mass SpectrometryY. Takahashi¹, Y. Yamanashi¹, N. Yoshikawa¹, S. Miki², Z. Wang², K. Suzuki³, M. Ukibe³, M. Ohkubo³¹*Yokohama National University, Japan*, ²*National Institute of Information and Communications Technology (NICT), Japan*, ³*National Institute of Advanced Industrial Science and Technology (AIST), Japan*

1-EA-P51 (A954)

Detection of Single Electrons or Photons using the same Superconducting NanowireM. Rosticher¹, F. R. Ladan¹, J. P. Maneval¹, S. N. Dorenbos², T. Zijlstra², T. M. Klapwijk², V. Zwiller², A. Lupaşcu^{3,4}, and G. Nogues^{3,5}¹*Laboratoire Pierre Aigrain, ENS, 75231 Paris*, ²*Kavli Institute of Nanoscience, Delft University of Technology, 2628CJ Delft*,³*Laboratoire Kastler Brossel, ENS, 75231 Paris*, ⁴*Institute for Quantum Computing, University of Waterloo, Ontario*, ⁵*Institut Néel, Université Joseph Fourier, 38042 Grenoble*

1-EA-P52 (A1126)

Development of non-hysteretic rf-SQUIDs for multiplexed MMC readoutSebastian Kempf¹, Andreas Fleischmann¹, Loredana Gastaldo¹, and Christian Enss¹¹*Kirchhoff-Institute for Physics, Heidelberg University, Im Neuenheimer Feld 227, 69120 Heidelberg, Germany.*

1-EA-P53 (A1133)

Physics and Applications of Metallic Magnetic Calorimeters

L. Gastaldo, N. Förster, D. Hengstler, S. Heuser, A. Kampkötter, S. Kempf, C. Pies, J.-P. Porst, P. Ranitzsch, S. Schäfer, S. Vick, T. Wolf, A. Fleischmann and C. Enss

Kirchhoff Institute for Physics, INF 227, 69120 Heidelberg, Germany

Electronics: Microwave Devices and Applications I

Chairperson: Uzawa

1-EA-P54 (A534)

Fabrication and Microwave Properties of Asymmetric Dual-band High- T_c Superconducting Filter

Li-Min Wang¹, Shyue-Han Lin¹, Ying-Shyuan Chang¹, and Jer-Wei Liu²

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1-EA-P55 (A1146)

Resonances in Superconducting Circuits at THz Frequencies

M. Kroug¹, A. Gonzales¹, K. Kuroiwa¹, A. Miyachi¹, Y. Uzawa¹, K. Makise², Z. Wang²

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1-EA-P56 (A17)

Temperature-dependent negative real part of the nonlinear impedance in superconducting films with a tilted washboard pinning potential

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1-EA-P57 (A181)

Closed Form Formulas for Distributed Circuit Model of Discontinuities in HTS Microstrip Transmission Lines

S. Mohammad Hassan Javadzadeh, Zahra Mardy Mamaghany, Forouhar Farzaneh, Mehdi Fardmanesh

Department of Electrical Engineering, Sharif University of Technology, Tehran, Iran

1-EA-P58 (A731)

Models and simulation for the self-pumped HTS RSQUID mixer

C. M. Pegrum¹, M. Hope¹, G-L. Oppo¹, J. Du² and J. C. Macfarlane^{1,2}

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1-EA-P59 (A496)

Superconducting Resonators with Parasitic Electromagnetic Environments

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Electronics: Novel Devices and Applications I

Chairperson: Underwood

1-EA-P60 (A1104)

SHAPING MAGNETIC FIELDS WITH SUPERCONDUCTOR-METAMATERIALS HYBRID SYSTEMS

C. Navau¹, J. Prat¹, A. Sanchez¹, and D.-X. Chen²

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1-EA-P61 (A144)

Josephson Spectrometer with Waveguide Coupling for Liquid Identification

M. Lyatti, U. Poppe, Y. Divin

PfZ, Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany

1-EA-P62 (A323)

High-Harmonic Phase Detector based on SIS junction

Konstantin V. Kalashnikov^{*}, Andrey V. Khudchenko[†], Andrey M. Baryshev[†] and Valery P. Koshelets^{*}

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1-EA-P63 (A390)

Optimization of bi-SQUID arrays

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1-EA-P64 (A583)

Generation and detection of THz radiation using intrinsic Josephson junctions

Akinobu Irie, Dai Oikawa, Kiyotaka Yamada, Gin-ichiro Oya

Department of Electrical and Electronic Systems Engineering, Utsunomiya University

1-EA-P65 (A606)

Proximity Effect in BSCCO Intrinsic Josephson Junctions Contacted with a Normal Metal Layer

Minoru Suzuki^{1,2}, Masayuki Koizumi¹, Itsuhiro Kakeya¹, and Yuri M. Shukrinov^{2,3}

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1-EA-P66 (A833)

Electronic teleportation with superconducting Andreev entanglers: project status

C.G. Molenaar, J.N. Beukers, M. Veldhorst, and A. Brinkman

MESA+ Institute for Nanotechnology, University of Twente, The Netherlands.

1-EA-P67 (A961)

Dynamic range studies of SQUID arrays sensors examined by RF radiation from $DC \leq f \leq 1$ GHz.

Anna M. Leese de Escobar, Marcio C. de Andrade, Benjamin J. Taylor, Sarah B. Rice, Edmond Wong.

Space and Naval Warfare Systems Center Pacific, 53560 Hull Street, San Diego, CA 92152-5001 USA

1-EA-P68 (A1099)

Non-local effects in superconducting lateral spin valve structures

J.L. Webb, B.J. Hickey and G. Burnell

School of Physics and Astronomy, University of Leeds, UK

1-EA-P69 (A1128)

Flux modulation properties of SQUID using Bi-2212 intrinsic Josephson junctions

Kensuke Nakajima, Mihoko Takeda, Hironobu Yamada

Graduate School of Science and Engineering, Yamagata University, Yonezawa 992-8510, Japan

1-EA-P70

(A1182)

Low field MRI with magnetoresistive-based sensor

M. Pannetier-Lecoeur, C. Fermon, H. Dyvorne, Q. Herreros,
G. Le Goff and G. Cannies.

DSM/IRAMIS/SPEC- CEA Saclay, Gif-sur-Yvette, France

Materials: HTS Thin Films and Multilayers

Chairperson: Diko, Kitagushi, Wimbush, Granados

1-MA-P1

(A631)

Low-field magnetization relaxation in YBCO films with BZO nano-rods

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1-MA-P2

(A663)

YBCO/Sapphire films with high critical current isotropy for application

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1-MA-P3

(A840)

Deposition of YBa₂Cu₃O_{7-x} layers on zirconia/nickel substrates by using dip-coating and electrophoretic deposition techniques

Raphaël Closset^{1,2}, Bénédicte Vertruyen¹, Rudi Cloots¹, Michel Dirickx² and Frédéric Boschini^{1,3}

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³APTIS, Department of Physics, University of Liège, Belgium

1-MA-P4 (A10)

Development of a chemical solution deposition route of NdGaO₃ buffer layer for coated conductors

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1-MA-P6 (A994)

Ink-jet printing YBa₂Cu₃O_x coatings starting from water-based inks

J. Feys¹, P. Vermeir^{1,2}, X. Granados³, S.C. Hopkins⁴, S. Ricart³, B.A. Glowacki⁴, M. Baecker⁵, P. Lommens¹, K. De Buysser¹, I. Van Driessche¹

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1-MA-P7 (A146)

Photoinduced superconductivity and its oxygen-deficient dependency in undoped and BZO-doped YBCO thin films

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1-MA-P9 (A744)

Strong Increase of Critical Current in Magnetic Nanorod-Superconductor Hybrids

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1-MA-P10 (A406)

BSCCO film growth on crystalline substrate using domestic microwave

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1-MA-P11 (A679)

Systematic modification of electrical and superconducting properties of YBCO and nano-patterning of high-T_c superconducting thin films by light-ion irradiation

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1-MA-P12 (A1095)

Fabrication of BSCCO Thick Film with Modified Ultrasonic Spray Pyrolysis method and their Structural and Superconducting Properties

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1-MA-P13 (A1096)

Fabrication of BSCCO Thick Film with Modified Ultrasonic Spray Pyrolysis method and their Structural and Superconducting Properties

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1-MA-P14 (A620)

Preparation of single-crystal-like Bi-2212 thick films by coating-melting method

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1-MA-P15 (A894)

Nanoengineered YBCO thin films based on Chemical Solution Deposition (CSD) with pre-stabilized nanoparticles

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1-MA-P16 (A804)

Fabrication of RE-123 coatings on ceramic substrates using colloidal processing and laser induced surface modifications

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1-MA-P17 (A356)

Microwave Impedance Properties of YBa₂Cu₃O_{7- δ} Films Deposited on MgO Substrates Depending on Film Thickness

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1-MA-P18 (A166)

NdBa₂Cu₃O_x nanowires grown in anodized alumina templates by microwave heating

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1-MA-P19 (A109)

Combinatorial synthesis of $(Y_xGd_{1-x})Ba_2Cu_3O_x$ superconducting thin filmsA. Kirchner¹, M. Erbe¹, T. Freudenberg¹, J. Feys², I. van Driessche², L. Schultz¹, B. Holzapfel¹¹*IFW Dresden, Institute for Metallic Materials, Helmholtzstr. 20, 01069 Dresden, Germany,* ²*Dep. Inorganic and Physical Chemistry, Ghent University, Krijgslaan 281 - S3, 9000 Gent, Belgium*

1-MA-P20 (A411)

HTS $YBa_2Cu_3O_{7.5}$ films with $BaZrO_3$ additions: nanostructure, transport and microwave properties

V O Moskaliuk, V L Svetchnikov, V S Flis, A A Kalenyuk, A L Kasatkin, A I Rebikov, C G Tretiatchenko and V M Pan

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1-MA-P21 (A762)

MOCVD growth of infinite-layer insulating (001) $CaCuO_2$ thin films with low roughness and highly uniform morphologyK Endo¹, P. Badica²¹*Kanazawa Institute of Technology, 924-0838, Hakusan, Japan (kendo@neptune.kanazawa-it.ac.jp),* ²*National Institute of Materials Physics, 077125 Bucharest-Magurele, Romania*

1-MA-P22 (A862)

High quality NdBCO films on MgO substrates with thin YBCO buffer layers grown by reactive co-evaporation

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1-MA-P23 (A887)

Epitaxially grown $LaNiO_3$ thin films on $SrTiO_3(100)$ substrates by chemical solution deposition method^aR.B. Mos, ^aM. Nasui, ^aT. Petrisor. Jr. ^aM. Gabor, ^bA. Rufoloni, ^aL. Ciontea, ^aT. Petrisor^a*University of Cluj-Napoca, 28, Memorandumului Street, Cluj-Napoca, Romania,* ^b*ENEA Frascati, Via Enrico Fermi 45, 00044, Frascati, Roma, Italy*

1-MA-P24 (A985)

Basic idea to TFA-MOD (metal organic deposition using trifluoroacetates) films with thickness greater than 1 micron by a single deposition.

Takeshi Araki, Mariko Hayashi, and Hiroyuki Fuke

Functional Materials Laboratory, Corporate Research & Development Center, Toshiba Corporation

1-MA-P25 (A1016)

Epitaxial growth of $\text{YBa}_2\text{Cu}_3\text{O}_7$ films onto LaAlO_3 (100) by using oxalates

Angel Bustamante D.¹, Ana M. Osorio², Lizbet León F.¹, Jorge García D.¹, Jesús Flores S.¹, Mirtha Pillaca¹, Luis De Los Santos V.^{3,4}, D. W. Lee⁵ and J. C. González⁶

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1-MA-P26 (A1129)

Properties of $(\text{Y,Dy})\text{Ba}_2\text{Cu}_3\text{O}_{7.5}$ Films Prepared by TFA-MOD Method

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1-MA-P27 (A618)

Growth of superconducting YBCO multilayers combining chemical solution and vacuum deposition techniques

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1-MA-P28 (A125)

Study of multi-layer $\text{Ce}_{0.8}\text{Gd}_{0.2}\text{O}_{1.9}$ (CGO) thick films deposited on textured NiW substrates by a simple metal-organic deposition techniqueMin Liu^a, Hongli Suo^a, Zhao Lv^a, Shuai Ye^a, Yue Zhao^a, Meiling Zhou^a, Dongqi Shi^b and Shixue Dou^b^aThe College of Materials Science and Engineering, Beijing University of Technology, Beijing 100022, China, ^bInstitute for Superconducting and Electronic Materials, University of Wollongong, NSW 2522, Australia

1-MA-P29 (A1178)

Preparation of thick YBCO-TFA films by inkjet printingMohamed AKLALOUCH¹, Albert CALLEJA¹, Marta VILARDELL¹, Susagna RICART¹, Xavier GRANADOS¹, Teresa PUIG¹, Xavier OBRA-DORS¹¹ Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193 Bellaterra, Catalonia, Spain**Materials: Mechanical Properties**

Chairperson: Diko, Kitagushi, Wimbush, Granados

1-MB-P30 (A342)

Hoop stress measurements on DI-BSCCO tapes reinforced with carbon fibers

Davide Uglietti, Tsukasa Kiyoshi

*National Institute for Materials Science, Sengen 1-2-1, Tsukuba, Ibaraki 305-0047, Japan***Materials: Prictide Thin Films**

Chairperson: Diko, Kitagushi, Wimbush, Granados

1-MC-P31 (A383)

New routes for epitaxial thin films of Fe-based superconductors

T. Thersleff, E. Reich, S. Haindl, K. Iida, F. Kurth, J. Engelmann, M. Kieszun, S. Trommler, J. Hänisch, A. Kauffmann, R. Hühne, D. Pohl, A. Hartmann, B. Rellinghaus, L. Schultz and B. Holzapfel

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1-MC-P32 (A777)

Reversible shift of the superconducting transition of Co-doped Ba-122 thin films using piezoelectric substrates

S. Trommler, T. Thersleff, E. Reich, S. Haindl, K. Iida, F. Kurth, J. Engelmann, P. Pahlke, J. Hänisch, R. Hühne, L. Schultz and B. Holzapfel

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1-MC-P33 (A794)

Transient reflectivity change measurements on FeSe_{0.5}Te_{0.5} thin films

Giovanni Piero Pepe¹, Carmela Bonavolontà¹, Loredana Parlato¹, Corrado De Lisio¹, Giuseppe Peluso¹, Antonio Barone¹, Emilio Bellingeri², Ilaria Pallecchi², Marina Putti², and Carlo Ferdeghini²

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1-MC-P34 (A841)

Voltage-noise properties of high-quality FeTe_{0.5}Se_{0.5} thin films

C. Barone¹, S. Pagano¹, I. Pallecchi², E. Bellingeri², M. Putti³, and C. Ferdeghini²

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1-MC-P35 (A1083)

Electronic phase diagram of Co-doped Ba-122 thin films

F. Kurth, S. Haindl, K. Iida, T. Thersleff, J. Hänisch, R. Hühne, J. Werner, K. Nenkov, S. Trommler, M. Kitzun, J. Engelmann, L. Schultz, B. Holzapfel

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1-MC-P36 (A321)

Epitaxial Fe/BaFe_{2-x}Co_xAs₂ multilayers

J. Engelmann, S. Haindl, K. Iida, F. Kurth, T. Thersleff, E. Reich, S. Trommler, L. Schultz and B. Holzapfel

IFW Dresden, P. O. Box 27 01 16, 01171 Dresden, Germany

Materials: HTS Bulk

Chairperson: Diko, Kitagushi, Wimbush, Granados

1-MD-P37 (A247)

Effect of Rhenium and Tellurium Doping on Critical Temperature of TI-based Superconductors

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Dept. of Electronics, Sibsagar College, Joysagar (Assam) India-785665

1-MD-P38 (A807)

Chemical monitoring of the synthesis of superconductor by Sol-Gel Method

Ana M. Osorio A.¹, Ángel Bustamante², J.C.González³, Manuel Bejar¹, M. Hilda Carhuancho¹, Juan Feijóo²

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1-MD-P39 (A811)

Size effect of nanoscale artificial pinning centers on the superconducting properties of YBCO single grains

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1-MD-P40 (A643)

Microstructure and superconducting properties in air-processed GdBa₂Cu₃O_{7-δ} superconductor bulk with the additives of nano particles

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1-MD-P41 (A413)

Correlation between enhanced T_c , orthorhombicity and AC magnetic shielding in argon preheated high T_c superconductor $(Y_{1-x}Sm_x)(SrBa)Cu_3O_{6+z}$

A. Nafidi¹, R. Morghi¹, M. Braigue¹, H. Chaib¹, Y. Benlaabidya¹, A. Dadabi¹, H. Sahah¹, M. Massa¹, M. Srinivasa Vinod²

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²Mechanical Engineering Depart, RV College of Engineering, Bangalore, 560 059, India.

1-MD-P42 (A592)

Characteristics of Small Pinning Centers in Bi-Based Superconductors

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1-MD-P43 (A552)

Explanation of temperature and field-driven magnetic behavior in high temperature Ru-based magnetic superconductors

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1-MD-P44 (A737)

Electrodynamics of $(Nd, Eu, Gd)Ba_2Cu_3O_y$ single crystals

M. Rameš¹, V. Železný¹, V. Ta Phuoc², F. Gervais², T. Wolf³, M. Jirsa¹

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1-MD-P45 (A149)

Influence of Hole and Inserts on the Levitation Performance of a Magnetized Bulk High- T_c Superconductor

Wei Liu^{1,2}, Jiasu Wang^{1,2}, Changqing Ye¹, Shijun Zheng¹, Guangtong Ma^{1,2}, Jun Zheng^{1,2}, Suyu Wang^{1,2}

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1-MD-P46 (A399)

Batch production of YBCO disks for levitation applicationsV. Plechacek¹ and M. Jirsa²

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1-MD-P47 (A16)

Biopolymer Mediated Syntheses of Nanoparticulate SuperconductorsSimon R. Hall^{a*}, Kevin Hansberry^a, Stuart C. Wimbush^b, Wataru Ogasawara^c, Yosuke Shida^c and Corey F. Hall^a

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1-MD-P48 (A698)

The irreversibility line and Curie-Weiss temperature of the superconductor LaCaBaCu_{3-x}(BO₃)_xO_{7-δ} with x= 0.2 and 0.3L. De Los Santos Valladares^{1,2}, A. Bustamante Dominguez³, R. Bellido Quispe³, W. Flores Santibañez³, C.H.W. Barnes¹ and Y. Majima²

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1-MD-P49 (A795)

Structural and Electrical Properties of (Pb,M)Sr₂(Y,Ca)Cu₂O_z (M: Fe, Co, Ni)

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1-MD-P50 (A362)

Effects of microstructure and magnetic field condition on tri-axial magnetic orientation in RE-based cuprate superconductorsS. Horii^{1,2}, M. Yamaki^{1,2}, S. Okuhira¹, M. Haruta^{1,2}, and J. Shimoyama^{2,3}

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1-MD-P51 (A981)

Pressure driven lattice instability and soft mode behavior in triple layer Bi-Sr-Ca-Cu-O superconductor.

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1-MD-P52 (A82)

Effects of Pt content on mechanical properties of Dy123 bulks

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1-MD-P53 (A84)

The comparison of magnetic flux density in YBCO bulks impregnated with various materials

M. S. Lee^{*a}, G. E. Jang^a, B. H. Jun^b, Y. H. Han^c, B. J. Park^c, D. W. Ha^d, M. H. Son^d

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1-MD-P54 (A175)

High Temperature Superconducting Y-Ba-Cu-O Microwave Cavities Fabricated by Top Seeded Melt Growth

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1-MD-P55 (A263)

Investigation of Gd₂BaCuO₅ spatial distribution and superconducting properties in the Gd-Ba-Cu-O single grains with nano-Ag and Fe-containing additivesKun Xu^{1,*}, Difan Zhou¹, Shogo Hara¹, Keita Tsuzuki¹, Daisuke Nishio-Hamane², Mitsuru Izumi¹¹Laboratory of Applied Physics, Tokyo University of Marine Science and Technology, 2-1-6 Etchu-jima, Koto-ku, Tokyo 135-8533, Japan,²Institute for Solid State Physics, The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa-shi, Chiba 277-8581, Japan

1-MD-P56 (A341)

The influence of ball milling of the Y2411 phase on the growth of Y-Ba-Cu-O large, single grainsZheiwei Zhang¹, Yun-Hua Shi¹, Anthony Dennis¹, David A. Cardwell¹, Nadendla Hari Babu², ¹Bulk Superconductivity Group, Department of Engineering, University of Cambridge, Cambridge, ²BCAST, Brunel University, UK.

1-MD-P57 (A517)

Synthesis of the superconductor La(La_{0.15}Ba_{0.85})₂Cu₃O₇Marlon Valerio C.¹, Angel Bustamante D.¹, Lizbet León F.^{1,2}, Jesús Flores S.¹ and J. C. González³¹Laboratorio de cerámicos y nanomateriales, Facultad de Ciencias Físicas, Universidad Nacional Mayor de San Marcos, Apartado Postal 14-0149, Lima 14, Perú. ²Cavendish Laboratory, University of Cambridge, J.J. Thomson Av., CB3 0HD, United Kingdom. ³Grupo de Investigación de Superficies, Intercaras y Láminas Delgadas, Instituto de Ciencia de Materiales de Sevilla – CSIC – Univ. Sevilla. Calle Américo Vespucio 49, Isla de la Cartuja.41092 Seville - Spain.

1-MD-P58 (A545)

Synthesis of RE123 Melt-Solidified Bulks Under Low Pressure Pure Oxygen

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1-MD-P59 (A602)

Recent Progress in HTS Bulk Technology and Performance at NSC

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1-MD-P60 (A710)

MICROSTRUCTURE AND SUPERCONDUCTING PROPERTIES OF Al-DOPED GdBCO BULK SUPERCONDUCTORS

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1-MD-P61 (A890)

Synthesis and Rietveld refinement of (Y_{1-x}Pr_x)Ba₂Cu₃O_{7-δ} superconductor compound

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1-MD-P62 (A958)

Study on the effects of Ta doping for texturing of (Y/RE)BCO bulks (RE=Sm, Nd)

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1-MD-P63 (A1088)

Synthesis and Characterization of Y₃Ba₅Cu₈O₁₈ Superconducting Material

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1-MD-P64 (A1089)

Growth of Bi-based High Temperature Superconducting Whisker with High Critical Current Density

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1-MD-P65 (A2)

Effects of Mn doping on upper critical field in $GdBa_2(Cu_{1-x}Mn_x)_3O_y$ HTSC system

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1-MD-P66 (A893)

Magnetic shielding properties of a superconducting hollow cylinder: Influence of a vertical or a horizontal slitJean-François Fagnard ¹, Michel Dirickx ¹, Steffen Elschner ², Achim Hohl ³, Mark Rikel ³, Benoit Vanderheyden ⁴ and Philippe Vanderbemden ⁴¹ SUPRATECS, CISS Dept., Royal Military Academy, Belgium,² University of Applied Science Mannheim, D-68163 Mannheim, Germany, ³ Nexans Superconductors GmbH, D-50351 Hürth, Germany, ⁴ SUPRATECS, Dept. of Electrical Engineering (B28), University of Liège, Belgium

1-MD-P67 (A933)

Magnetic behaviour of a superconducting hollow cylinder subjected to crossed fields: Experimental and modelling results.Jean-François Fagnard ¹, Michel Dirickx ¹, Philippe Vanderbemden ² and Benoit Vanderheyden ^{2*}¹ SUPRATECS, CISS Dept., Royal Military Academy, Belgium,² SUPRATECS, Dept. of Electrical Engineering (B28), University of Liège, Belgium

1-MD-P68 (A7)

Metamagnetic behavior of $YBa_2Cu_3O_{7.8}$ bulk sample at 4.2 KS. Khene*, M. Gasmi* and G. Fillion**** Physics Department, Badji Mokhtar University, PO box 12, 23000, Annaba, Algeria, ** LCMI, CNRS, 38042, Grenoble cedex 9, France.*

1-MD-P69 (A780)

A New Method for Non Destructive Estimation of J_c in $YBaCuO$ Ceramic SamplesMarcelo Azevedo Neves ¹, Giancarlo Cordeiro da Costa ², Agnaldo Souza Pereira ³¹ Universidade Federal Rural do Rio de Janeiro, Rio de Janeiro, Brazil, ² Universidade Estadual da Zona Oeste, Rio de Janeiro, Brazil, ³ Colégio Militar de Manaus, Amazonas, Brazil

1-MD-P70 (A781)

Finite Element Determination of Stiffness in Stable Magnetic Levitation of a Permanent Magnet Over the Top of a Field Cooled YBaCuO Sample

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1-MD-P71 (A454)

Preliminary study of 3D modeling of superconductors using analytical formulae

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1-MD-P72 (A1093)

The use of fluoride buffer interlayers for easy epitaxy of CeO₂ on MgO for coated conductors

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Large Scale: Motors and Generators

Chairperson: Leveque, Berger, Sirois, Wefel, Stenvall

1-LA-P1 (A1152)

Discussion about mesh and solver conditions to model High Temperature Superconductor Materials with FEM software

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1-LA-P2 (A1023)

Operation and AC Losses Estimation of a High Temperature Superconducting (HTS) Motor

W. Xian, F. Kong, Y. Yan, T. A. Coombs

1-LA-P3 (A293)

Numerical Analysis of YBCO Trapped Field Magnets in Electrical MachinesMin Zhang^a, Koichi Matsuda^b, Tim Coombs^a*a. Dep. of Engineering, Cambridge University, UK, CB3 0FA, b. Dep. of Intelligent Machinery & Systems, Kyushu University, Japan, 819-0395*

1-LA-P4 (A867)

Remagnetization of YBCO bulk using various methods

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1-LA-P5 (A253)

Influence of the inner coil size of CMDC on the flux-trapping properties of bulk superconductors in pulsed-field magnetization

Z. Deng, N. Shinohara, M. Miki, B. Felder, K. Tsuzuki, M. Watasaki, M. Izumi

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1-LA-P6 (A980)

Extended magnetization of superconducting pellets in highly inhomogeneous magnetic fieldR Maynou¹, J Lopez¹, X Granados², R Torres¹*¹EUNETIB-UPC, Barcelona, Spain; ²ICMAB-CSIC, Bellaterra, Spain*

1-LA-P7 (A948)

Measurements of the magnetic field profile in a YBCO coil system for axial flux electrical machineG. Messina¹, G. Celentano¹, R. Viola¹, G. Giorgi¹, F. Maierna¹, S. Rueca¹, A. della Corte¹, U. Gambardella², A. Saggese²*¹ ENEA C.R. Frascati Via E. Fermi 45, 00044 Frascati (Rome) Italy, ² CNR-Spin UOS Salerno - Via Ponte Don Melillo, 84084 Fisciano (Sa) Italy*

1-LA-P8 (A1102)

Performance Calculation of High Temperature Superconducting Hysteresis Motor Using Finite Element MethodN. Chakraborty¹, G. Konar¹, J. Das²*1 Power Engineering Department, Jadavpur University, 2nd Campus, Kolkata-700098, India, 2 Electrical Engineering Department, NIT, Agartala, Tripura-799055, India*

1-LA-P9 (A609)

A double armature superconducting motor

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1-LA-P10 (A479)

**Development of a superconducting motor with an orthogonal
magnetic system in a simple vacuum thermal insulation struc-
ture**

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1-LA-P11 (A190)

**The Thrust and Normal Force Characteristics of a Single-Sided
HTSLSM**

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sity of Electronic Science and Technology of China, Chengdu 611731,
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1-LA-P12 (A901)

**Concentrated Parameters' Equivalent Circuit of an Electrical
Superconducting Motor**

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Tecnologia, Quinta da Torre, 2829-516 Caparica, Portuga I, ^oElectrical
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1-LA-P13 (A830)

A new topology of superconducting magnetic coupling

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Nancy Université, France*

1-LA-P14 (A329)

Measurement of AC losses in a racetrack superconducting coil made from YBCO coated conductor.Eugen Seiler¹, Asger B. Abrahamsen², Ján Kováč¹, Mike Wichmann², Chresten Træholt³¹*Institute of Electrical Engineering SAS, Dubravska cesta 9, 841 04 Bratislava, Slovakia,* ²*Materials Research Division, RISØ DTU, Frederiksborgvej 399, DK-4000 Roskilde, Denmark,* ³*Department of Electrical Engineering, Technical University of Denmark, DK-2800 Lyngby, Denmark*

1-LA-P15 (A657)

Study on the heat transfer properties of a prototype HTS generator with HTS armature windingsPeng SONG^a, Timing QU^b, Xiaoyu YU^b, Chen GU^a, Zhenghe HAN^a^a*Applied Superconductivity Research Centre, Department of Physics, Tsinghua University, Beijing 100084, China,* ^b*Department of Mechanical Engineering, Tsinghua University, Key Laboratory for Advanced Materials Processing Technology, Ministry of Education, Beijing 100084, China.*

1-LA-P16 (A1165)

Operational merites of maritime superconductivityR. Ross¹, D.W. Meuldijk¹, J.J. Bosklopper², K.H. van der Meij²¹*Netherlands Defence Academy, Royal Naval College, Het Nieuwe Diep 8, Den Helder, NL,* ²*Royal Netherlands Navy*

1-LA-P17 (A497)

Electromagnetic forces of high-Tc superconducting coated conductor coils subjected to sinusoidal traveling magnetic fieldsJ. Li^{1,2}, F. Yen^{1,2}, S.J. Zheng^{1,2}, S.Y. Wang¹, J.S. Wang¹¹*Applied Superconductivity Laboratory, Southwest Jiaotong University, Chengdu, Sichuan 610031, China,* ²*Traction Power State Key Laboratory, Southwest Jiaotong University, Chengdu, Sichuan 610031, China***Large Scale: SMES**

Chairperson: Leveque, Berger, Sirois, Wefel, Stenvall

1-LB-P18 (A56)

Experimental Investigation Into Characteristics Of Micro-SMES' Magnet

WEI Bin, CHEN Pan-pan, QIU Ming, ZHANG Hong-jie, ZHU Jia-hui, YANG Yan-fang

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1-LB-P19 (A564)

Quench Behavior and Protection of YBCO Toroidal Coil System for SMES application

Takahiro Suzuki^a, Kazuki Muromachi^a, Atsushi Ishiyama^a, Hiroshi Ueda^b, Koji Shikimachi^c, Naoki Hirano^c, Shigeo Nagaya^c

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1-LB-P20 (A121)

Homogeneous Current Distribution in Multi-laminated HTS Tape Conductor for Pancake Coil of SMES

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1-LB-P21 (A188)

Thermal characteristics of 2.5 MJ SMES system during discharging operation

Junseok Ko, Hankil Yeom, Yong-Ju Hong, Deuk-Yong Koh, Hyobong Kim, Seong-Je Park

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1-LB-P22 (A258)

Cancelled

1-LB-P23 (A603)

Cancelled

1-LB-P24 (A634)

Cancelled

1-LB-P25 (A827)

Theoretical Analysis and Modelling of Dynamic Magnetic Energy Storage and Release in a SMES System

Jianxun Jin, Xiaoyuan Chen

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1-LB-P26 (A1081)

Design and Test of a Model Coil for the MJ Class SMES

H. M. Kim, H. J. Kim, J. H. Bae, M. H. Shon, and K. C. Seong

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1-LB-P27 (A77)

“Compact Torus” - the Best SMES Closed Flux ConfigurationE.Yu.Klimenko¹, E.P.Polulyakh²¹ *National Research Nuclear University “MEPhI” Russia, 115409, Moscow,* ² *SSC RF TRINITI, Russia, 142190, Moscow reg., Troitsk.*

1-LB-P28 (A989)

Design and Test of a Cryogenic Power Converter on Board a 100 kW HTS Synchronous Generator at Liquid Nitrogen Temperatures between 77K and 72K

W. Bailey, H. Wen, C. Jia*, A. Forsyth*, Y. Yang

*Institute of Cryogenics, University of Southampton, Southampton, SO171BJ, UK, *Department of Electrical Engineering, University of Manchester, Sackville Street Building, Manchester, M139PL, UK***Large Scale: Bearings and Levitation**

Chairperson: Leveque, Berger, Sirois, Wefel, Stenvall

1-LC-P29 (A1108)

Dynamic properties of superconductor bearing for a 10 kWh class superconductor flywheel energy storage system

B. J. Park, S. Y. Jung, S. C. Han, J. P. Lee, S. G. Doo, B. C. Park, C. H. Kim, Y. H. Han

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1-LC-P30 (A866)

Coated Conductors for the Magnetic Bearing Application

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1-LC-P31 (A796)

Optimization of single grain YBCO bulk for a 5 kWh class superconductor flywheel energy storage system

B. J. Park, S. Y. Jung, S. C. Han, J. P. Lee, B. C. Park, C. H. Kim, Y. H. Han

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1-LC-P32 (A46)

Prototype of disc type HTS bearing

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1-LC-P33 (A241)

A measurement testing setup of the characteristic properties for high temperature superconducting bearing systems

Q. Lin^{1,2}, D. Jiang^{1,2}, J. Wang^{*1}, G. Ma^{1,2}, F. Yen^{1,2}, Z. Deng¹, J. Zheng^{1,2}, S. Wang¹

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1-LC-P34 (A998)

Optimization of the Force Modeling between High Temperature Superconductor and Permanent Magnet

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1-LC-P35 (A621)

Levitation force of Maglev systems with permanent and soft ferromagnetsNuria Del-Valle¹, Sebastia Agramunt¹, Alvaro Sanchez¹, Carles Navau¹, and Du-Xing Chen²

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1-LC-P36 (A191)

Design of an HTS Levitated Double-Sided HTSLSM for MaglevLuhai Zheng¹, Jianxun Jin¹, Youguang Guo², Jianguo Zhu²

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1-LC-P37 (A1120)

Components and features of SupraTrans II – the research facility HTS MaglevO. de Haas¹; L. Kuehn^{1,2}; W. Pfeiffer²; D. Berger²; B. Holzapfel^{1,2}; L. Schultz²

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1-LC-P38 (A240)

Pre-loading effect on the superconducting maglev performance of a $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ bulk above a magnetic railGuang-Tong Ma^{1,2}, Yuan-Yuan Xu¹, Wei Liu¹, Qun-Xu Lin¹, Dong-Hui Jiang¹, Jia-Su Wang¹ and Su-Yu Wang¹

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1-LC-P39 (A899)

Dynamic studies of a superconductively levitated model system

St. Rosenzweig, D. Berger, E. Reich, L. Kühn, O. De Haas, B. Holzapfel, L. Schultz

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1-LC-P40 (A168)

Anisotropy effect on levitation performance of bulk high- T_c superconductor above permanent magnet guideway

Jun Zheng^{1,2}, Xinglin Liao¹, Hailian Jing¹, Wei Liu¹, Guangtong Ma^{1,2}, Fei Yen^{1,2}, Suyu Wang^{1,2}, Jiasu Wang^{1,2}

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1-LC-P41 (A228)

Studies of effect of pitching angle on the high temperature superconducting Maglev vehicle

Donghui Jiang¹, Jiasu Wang¹, Qunxu Lin¹, Guangtong Ma^{1,2}, Jun Zheng^{1,2}, Suyu Wang¹

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1-LC-P42 (A214)

Dynamical tests in a linear superconducting magnetic bearing

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1-LC-P43 (A344)

Study of torque performance of multi-seeds YBaCuO Bulk above a permanent magnet guideway undergoing “Z-type” movements at different angles

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Large Scale: HTS Bulk, Magnetic Studies

Chairperson: Leveque, Berger, Sirois, Wefel, Stenvall

1-LD-P44 (A66)

Very high field HTS magnet studies

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1-LD-P45 (A337)

Optimisation of magnetic flux pump effect in a room-temperature superconductor system with soft ferrites

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1-LD-P46 (A932)

Pulse magnetization of HTS bulk using magnetic field feedback control technique

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1-LD-P47 (A750)

Trapped Field Properties of 3 Tesla MgB₂ Bulk Superconducting Magnet

Masaru Tomita¹, Atsushi Ishihara¹, Akiyasu Yamamoto², Jun-ichi Shimoyama² and Kohji Kishio²

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1-LD-P48 (A221)

Influence of high harmonics of magnetic fields on trapped magnetic fluxes in HTS bulk

Kazuhiro YAMAGISHI¹, Jun OGAWA², Daisuke MIYAGI³ and Osami TSUKAMOTO¹

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1-LD-P49 (A715)

Magnetic shielding performances of YBCO superconductors: applications to multiple bulks and thin films

G. Malé, T. Lubin, K. Berger, S. Mezani, J. Lévêque

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1-LD-P50 (A462)

Magnetization Characteristics of Multiple Bulk Superconductors for Higher Field Applications

Y. Terao¹, N. Okajima¹, M. Sekino¹, H. Ohsaki¹, H. Teshima² and M. Morita²

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1-LD-P51 (A73)

Magnetic Separation Technique Using Multi-Pole HTS Bulk Magnets for Water Purification

Tetsuo Oka¹, Takafumi Kimura¹, Daiki Mimura¹, Harunobu Fukazawa¹, Hiroataka Seki¹, Daichi Ishiduka¹, Satoshi Fukui¹, Jun Ogawa¹, Takao Sato¹, Manabu Ooizumi¹, Hiroyuki Fujishiro², Hidemi Hayashi³, Kazuya Yokoyama⁴ and Christian Stiehler⁵

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Large Scale: LTS Systems

Chairperson: Leveque, Berger, Sirois, Wefel, Stenvall

1-LE-P52 (A325)

Test-model for study of the ITER PF1 impregnation procedure

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1-LE-P53 (A635)

R&D of insulating and vacuum pressure impregnation equipment for PF1 coil double pancakes.

A.S. Bursikov, S.A. Egorov, Y.A. Klimchenko, A.A. Mednikov, A.V. Pugachev, I.Y. Rodin

A.S. Bursikov, S.A. Egorov, Y.A. Klimchenko, A.A. Mednikov, I.Y. Rodin, are with the D.V. Efremov Scientific Research Institute of Electrophysical Apparatus (NIEFA); A.V. Pugachev is with "Forss Consulting" Ltd.

1-LE-P54 (A590)

Methodology study of structural analysis for the LHD-type fusion magnet

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1-LE-P55 (A139)

Transverse resistance measurements in NbTi and Nb₃Sn superconducting wires

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1-LE-P56 (A271)

Cryogenic test of full-size superconducting magnet for the Booster synchrotron of the NICA project

H. G. Khodzhbagiyani, A. M. Bazanov, A. M. Donyagin, A. R. Galimov, V. N. Karpinsky, G. L. Kuznetsov, P. I. Nikitaev, A. V. Smirnov, G. V. Trubnikov

Laboratory of High Energy Physics, Joint Institute for Nuclear Research, Dubna

1-LE-P57 (A962)

AC loss in the superconducting cables of the CERN Fast Cycled Magnet Prototype

F. Borgnolutti (1), L. Bottura (1), A. Nijhuis (2), D. Richter (1)

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1-LE-P58 (A563)

A superconducting switch for insertion devices with variable period length

T. Holubek¹, T. Baumbach¹, S. Casalbuoni¹, S. Gerstl¹, A. Grau¹, M. Hagelstein¹, D. Saez de Jauregui¹, C. Boffo², W. Walter²

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1-LE-P59 (A562)

Possible application of NbTi wire with artificial pinning centres for insertion devices

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1-LE-P60 (A658)

Open bore cryogen free magnet for HTS tests

E.I. Demikhov, T.E. Demikhov, E.A. Kostrov, V.V. Lisenko and N.A. Piskunov

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Wires & Tapes: Coated Conductors I

Chairperson: Malozemoff, Usoskin

1-WT-P1 (A633)

Transport critical current measurements of HTS conductors under high magnetic field at LNCMI

CHAUD Xavier^{1,2}, SURAN Renaud¹, DEBRAY François¹, TIXADOR Pascal², REY Jean-Michel³, LECREVISSE Thibault³, BRUZEK Christian-Eric⁴

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1-WT-P2 (A686)

Influence of the shape of the current on AC losses in superconducting tube and coil

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1-WT-P3 (A749)

E-J Characteristics of 2G YBCO Coated Conductor Tapes at Different Temperatures

I. Falorio, E.A. Young, Y. Yang

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1-WT-P4 (A1138)

Improvement of in-field characteristics of TFA-MOD derived coated conductors

M. Yoshizumi, Y. Takahashi, T. Izumi, Y. Shiohara

Superconductivity Research Laboratory, ISTEK

1-WT-P5 (A1034)

Process developments for HTS Coated Conductor Cylinders (3-Cs)

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1-WT-P6 (A211)

Industrial production of the Nb₃Sn and NbTi superconducting strands in Russia for the ITER Magnet system

V.I. Pantsyrny¹, A.K. Shikov², A.E. Vorobyeva¹, I.M. Abdyukhanov¹, S.V.Sudiev¹, N.A. Beliaikov¹, V.A. Drobyshhev¹, L.V.Potantina¹, E.A. Dergunova¹, K.A. Mareev¹, M.N. Nasibulin¹, S.M. Zernov³, K.M. Abramushin⁴, D.S. Anishuk⁴

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1-WT-P7 (A1079)

Influence of local critical current distribution on the in-field current transport performance of $Gd_1Ba_2Cu_3O_{7-x}$ coated conductors

Takanobu Kiss¹, Kohei Higashikawa¹, Kei Shiohara¹, Masayoshi Inoue¹, Yasuhiro Iijima², Takashi Saitoh², Teruo Izumi³

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1-WT-P8 (A969)

Mechanical performances of Stainless Steel laminated Coated Conductor

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1-WT-P9 (A39)

Elaboration by MOCVD of YBCO thin films for wire-based superconducting cables

N. Dechoux¹, C. Jiménez¹, P. Chaudouët¹, E. Sarigiannidou¹, S. Petit², S. Garaudée², L. Porcar², J.L. Soubeyroux², F. Weiss¹, P. Odier², Ch-E. Bruzek³

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1-WT-P10 (A114)

Efforts towards cheap coated conductors using chemical methods on textured NiW tapes

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1-WT-P11 (A367)

Advances in sustainable Fluorine-free CSD $\text{YBa}_2\text{Cu}_3\text{O}_7$ thin films

Vermeir P.^{1,2}, Feys J.², Verslyppe B.¹, Pollefeyt G.², Verbeke K.³,
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ence and Engineering, Belgium. ⁴ Zenergy Power GmbH, Germany.

1-WT-P12 (A407)

High throughput of reel-to-reel MOCVD-YBCO on different CSD- and MOCVD-buffered cube textured Ni-substrates.

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1-WT-P14 (A855)

Processing of chemically-derived coated conductors in a reel-to-reel equipment

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1-WT-P15 (A460)

Quench detection in HTS wire under slow-changed current pulse – FEM modeling and laboratory tests

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1-WT-P16 (A103)

Coated Conductor Processing: Copper Stabilizer

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1-WT-P17 (A310)

Fusion Splicing Technique for the Superconducting Joints of GdBCO-Coated Conductors

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Wires & Tapes: LTS/MgB₂-Wires I

Chairperson: Ferdeghini, Sumption

1-WT-P18 (A405)

Mechanical alloying followed by high pressure treatment as techniques used to improve transport properties in MgB₂ *in situ* wires with *ex situ* barriers and copper alloy sheaths

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1-WT-P19 (A96)

J_c-B-T dependence of MgB₂ tapes fabricated by PIT method

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1-WT-P20 (A110)

The critical current density in MgB₂ HIP-ed wires doped with SiC.

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1-WT-P21 (A145)

INFLUENCE OF CARBON DOPING ON MgB_2 SUPERCONDUCTING PROPERTIES

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1-WT-P22 (A313)

Additional analysis of influence of Al_2O_3 dopant on $J_c(B)$ behavior of MgB_2 polycrystalline wiresJ. Viljamaa, P. Kováč, T. Melišek, A. Rosová, I. Hušek and E. Dobročka
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1-WT-P23 (A384)

Properties of MgB_2 wires obtained from $Mg(BH_4)_2$ by thermal decomposition

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1-WT-P24 (A515)

Influences of heat treatment temperature on microstructure in MgB_2 superconducting wires fabricated by an internal Mg diffusion processY. Shimada¹, Y. Kubota¹, S. Hata², K. Ikeda², H. Nakashima², A. Matsumoto³, K. Togano³, H. Kumakura³¹*Department of Material and Molecular Sciences, Kyushu University,*
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1-WT-P25 (A557)

Microstructure and Superconducting properties of Cu addition MgB_2 multifilamentary wires using boron isotope powder as the boron source materialY. Hishinuma¹, A. Kikuchi², K. Matsuda³, K. Nishimura³, S. Yamada¹ and T. Takeuchi²¹*National Institute for Fusion Science, Toki, Gifu Japan,* ²*National Institute for Materials Science, Tsukuba, Ibaraki Japan,* ³*University of Toyama, Toyama Japan*

1-WT-P26 (A558)

The formation mechanism of the V₃Ga phase on the high Ga content Cu-Ga compound/V diffusion reaction through the high-temperature XRD analysis

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1-WT-P27 (A720)

The influence of CuFe₂O₄ nanoparticles on superconductivity of MgB₂

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1-WT-P28 (A752)

Low cost, high Jc MgB₂ wires without Nb barrier with Cu based sheaths for high field application.

A. Morawski, T. Cetner, A. Zaleski, D. Gajda, M. Rindfleisch, M. Tomsic, K. Adamczyk, R. Diduszko, A. Presz

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1-WT-P29 (A1012)

Modelling of current distribution in multifilamentary strands subjected to bending

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1-WT-P30 (A1029)

A novel probe for homogeneous and spatial periodic transverse stress loading on strands

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1-WT-P31 (A208)

Grain Structure and Irreversibility Line of a Bronze Route CuNb reinforced Nb₃Sn Multifilamentary WireM. J. R. Sandim¹, D. Stamopoulos², E. Aristomenopoulou², S. Zaefferer³, D. Raabe³, S. Awaji⁴, K. Watanabe⁴

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1-WT-P32 (A272)

Assessment of the changes of superconducting parameters in Nb₃Sn multifilamentary wires due to fast neutron irradiationT. Baumgartner¹, M. Eisterer¹, H.W. Weber¹, C. Scheuerlein², L. Bottura², B. Bordini² and R. Flükiger²

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1-WT-P33 (A612)

The study of Nb₃Sn phase content and structure dependence on the way of Ti doping in superconductors produced by bronze route.E. Dergunova¹, A. Vorobyeva¹, I. Abdyukhanov¹, K. Mareev¹, S. Balaev¹, R. Aliev¹, A. Shikov², A. Vasiliev²

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1-WT-P34 (A422)

J_c and H_{c2} in Nb-Ti-Ta APC multifilament wire obtained by solid state diffusion between a Nb-Ta alloy and pure TiC. Bormio-Nunes¹, S. T. Renosto¹, L. Ghivelder²

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1-WT-P35 (A718)

Metallurgical Processes in NbTi Filaments as a Function of Isothermal Annealing Time

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1-WT-P36 (A728)

Improved NbTi superconducting strand performance for higher magnetic fields

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1-WT-P37 (A1007)

Instability mechanisms of macroscopic currents charged into high-temperature superconductors cooled by liquid coolant

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1-WT-P38 (A393)

Effect of twist pitch on lattice deformation in Nb₃Sn strands by synchrotron X-ray diffraction analysis

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1-WT-P39 (A202)

The microstructure and superconducting properties of bronze processed Nb₃Sn strands

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1-WT-P40 (A655)

Influence of filament arrangement on the J_c , n -value of NbTi superconductorH.B. Ouyang^a, J.F. Li^a, T.C. Wang^a, Y.X. Xue^a, X.B. Wan^a, S.H. Zhu^a, X.H. Liu^{a,b}, Y. Feng^{a,b}, P.X. Zhang^{a,b}*a. Western Superconducting Technologies, Co. Ltd, Xi'an, China, 710018, b. National Engineering Lab. of Superconductor Materials, Xi'an, China, 710018,*

1-WT-P41 (A205)

The Study on Performance Stability of NbTi Strand for ITER ProjectJ.F. Li^{a,b}, P.X. Zhang^{a,b,c,d}, X.H. Liu^{a,b}, Y. Feng^a, W.T. Liu^{a,b}, S. H. Zhu^{a,b}, L. X. Yan^{a,b}, H. X. Gao^{a,b}, S.J. Du^{a,b}, G. Yan^{a,b}, T.C. Wang^{a,b}, G.K. Hoang^e*a. Western Superconducting Technologies.,Ltd, Xi'an 710018, China, b National Engineering Laboratory for Superconducting Materials Preparation, Xi'an 710018, China, c. Northwest Institute for Nonferrous Metal Research, P.O. Box 51, Xi'an 710016, China, d. State Key Lab. of Solidification Processing, Northwestern Polytechnical University, Xi'an 710072, China, e.ALSTOM, 3 bis, avenue des 3 Chenes, 90018 Belfort, France*

1-WT-P42 (A70)

Fine-filamentary MgB_2 wires for AC applications

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