

Institute of Physics Publishing

8th European Conference on
Applied Superconductivity
2007

Journal of Physics: Conference Series Vol. 97

September 16-20, 2007
Brussels, Belgium

Volume 1 of 3

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

ISBN: 978-1-60560-246-2

Some format issues inherent in the e-media version may also appear in this print version.

Copyright (2007) by the Institute of Physics Publishing.

All rights reserved.

For permission requests, please contact the Institute of Physics Publishing at the address below.

Institute of Physics Publishing
Dirac House, Temple Back
Bristol BS1 6BE UK

Tel +44 (0)117 929 7481
Fax +44 (0)117 929 4318

Institute of Physics Publishing

8th European Conference on Applied Superconductivity
2007

TABLE OF CONTENTS

VOLUME 1

Homogenizing Field-trapping Capabilities of Bulk Y-Ba-Cu-O Superconductors Using Ba-Cu-O Oxide Substrate for Practical Applications	1
<i>M Matsui, N Tsuji, S Nariki, N Sakai, K Iwafuchi, M Murakami</i>	
Towards the Design of Power Switches Utilizing HTS Material.....	7
<i>S A March, A Ballarino, C Beduz, K H Meß, Y Yang</i>	
Improved Critical Current Densities and Compressive Strength in Porous Superconducting Structures Containing Calcium	13
<i>D Walsh, S C Wimbush, S R Hall</i>	
2-GHz Band Man-made Noise Evaluation for Cryogenic Receiver Front-end	19
<i>S Narahashi, K Satoh, Y Suzuki, T Mimura, T Nojima</i>	
Wideband-RL-cancel Circuit for the E-J Property Measurement Using the Third-harmonic Voltage Method	25
<i>H Yamada, T Minakuchi, T Furuta, K Takegami, S Nakagawa, K Kanayama, K Hirachi, E S Otabe, Y Mawatari, H Yamasaki</i>	
Suppression of Magnetic Levitation Force in Melt-textured $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ Superconductors by a Transverse AC Magnetic Field	31
<i>I A Rudnev, Yu S Ermolaev</i>	
Novel Functions of Silver on Superconducting Properties for RE123 Melt-solidified Bulks.....	35
<i>T Nakashima, Y Ishii, T Katayama, H Ogino, S Horii, J Shimoyama, K Kishio</i>	
High-strength CuNb/Nb₃Sn Strand Cables with Residual Strain Controlled by the Repeated Bending Treatment	39
<i>K Watanabe, H Oguro, P Badica, S Awaji, G Nishijima, H Tsubouchi, S Meguro</i>	
Detectivity of YBCO Transition Edge Bolometer: Modulation Frequency, Bias Current and Absorber Effects.....	44
<i>A Moftakharzadeh, A Kokabi, A Bozbey, T Ghods-Elahi, M Vesaghi, S Khorasani, M Banzet, J Schubert, M Fardmanesh</i>	
How to Build Up the High Linearity SQIF Structure	55
<i>V Kornev, I Soloviev, N Klenov, O Mukhanov</i>	
Differential Parallel-serial SQIF Structures Providing High Linearity Response	59
<i>V Kornev, I Soloviev, N Klenov, O Mukhanov</i>	
Critical Current Anisotropy in Nanostructured HLPE Coated Conductors	64
<i>F Hengstberger, M Eisterer, H W Weber, A Kursumovic, J L MacManus-Driscoll</i>	
Vortex Dynamics in Hg-based Multi- and Super-multi-layered Cuprates	69
<i>A Crisan, Y Tanaka, A Iyo, H Matsuhata, D D Shivagan, P M Shirage, T W Button, J S Abell, K Tokiwa, T Watanabe</i>	

Physical Properties and Structure of Large Grain/single Crystal Niobium for Superconducting RF Cavities	75
<i>A Ermakov, I Jelezov, X Singer, W Singer, G B Viswanathan, V Levit, H L Fraser, H Wen, M Spiwek</i>	
Peculiarities on Voltage - Current Characteristics of HTS Tapes at Overloading Conditions Cooled by Liquid Nitrogen	83
<i>V S Vysotsky, S S Fetisov, V E Sytnikov</i>	
Thermal Effects in the Flux-creep Regime of $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ Thin Film Microbridges Under High Current Densities in Self Field	89
<i>G Ferro, M Ruibal, J A Veira, J Maza, F Vidal</i>	
Stable and Unstable Thermo -current States of High Temperature Superconductors	94
<i>V Romanovskii, N Lavrov, V Ozhogina</i>	
Photoinduced Superconductivity in Copper Oxides with Two-component Scenario	100
<i>P Konsin, B Sorkin</i>	
Bi-2223 Magnet for the Model of SMES	105
<i>G Wojtasiewicz, T Janowski, S Kozak, B Kondratowicz-Kucewicz, M Majka</i>	
CASPER- a Magnetic Measurement Facility for Superconducting Undulators.....	111
<i>E Mashkina, A Grau, Th Schneider, A Bernhard, S Casalbuoni, M Hagelstein, B Kostka, R Rossmanith, E Steffens, D Wollmann, T Baumbach</i>	
Progress Towards Nanostructured SmBCO Film for Controlling Pinning Properties	117
<i>Y Yoshida, T Ozaki, Y Takai, K Matsumoto, A Ichinose, S Horii, M Mukaida, Y Ichino</i>	
Peculiarities of High-pressure and Hot-pressing Manufacture of MgB_2-based Blocks with High Critical Currents for Electrical Machines	123
<i>T A Prikhna, W Gawalek, Ya M Savchuk, N V Sergienko, V E Moshchil, M Wendt, T Habisreuther, S N Dub, V S Melnikov, A V Kozyrev, Ch Schmidt, J Dellith, D Litzkendorf, P A Nagorny, U Dittrich, V B Sverdun, L K Kovalev, V T Penkin, W Goldacker, O A Rozenberg, J Noudem</i>	
Oxygenation of Bulk and Thin-walled MT-YBCO Under Controllable Oxygen Pressure	129
<i>T A Prikhna, X Chaud, W Gawalek, A Joulain, Ya M Savchuk, N V Sergienko, V E Moshchil, T Habisreuther, J Rabier, S N Dub, V S Melnikov, D Litzkendorf, P A Nagorny, J Bierlich, V B Sverdun, I Vajda, J Kósa</i>	
Superconductivity in Cu-Nb with Extremely Fine Structure.....	135
<i>P N Degtyarenko, A S Ivanov, V S Kruglov, I F Voloshin</i>	
Effects of a Ferromagnetic Substrate on Hysteresis Losses of a $\text{YBa}_2\text{Cu}_3\text{O}_7$ Coated Conductor in Perpendicular AC Applied Magnetic Fields.....	143
<i>M Suenaga, M Iwakuma, T Sueyoshi, T Izumi, M Mimura, Y Takahashi, Y Aoki</i>	
SQUID-detected NMR in Earth's Magnetic Field	149
<i>L Q Qiu, Y Zhang, H-J Krause, A I Braginski</i>	
Influence of Cable Layout on the Performance of ITER-type Nb_3Sn Conductors	155
<i>D Ciazynski, L Zani, P Bruzzone, B Stepanov, R Wesche, R Zanino, L Savoldi Richard, A Nijhuis, Y Iljin, S Turtu, V Corato, G De Marzi, G M Polli</i>	
AC Loss of the YBCO Coated Conductor in High Magnetic Fields	161
<i>E Seiler, L Frolik</i>	
Full Penetration Current Variation of a Superconducting Tube.....	167
<i>B Douine, J Lévéque, D Netter</i>	

Evaluation of Two Commercial Finite Element Packages for Calculating AC Losses in 2-D High Temperature Superconducting Strips	172
<i>F Sirois, M Dione, F Roy, F Grilli, B Dutoit</i>	
Normal Zone Propagation in Superconducting Thin-film Fault Current Limiting Elements with Au-Ag Alloy Shunt Layers	178
<i>K Arai, H Yamasaki, K Kaiho, M Furuse, Y Nakagawa, M Sohma, I Yamaguchi</i>	
Simple Calibration Free Method to Measure AC Magnetic Moment and Losses	184
<i>L M Fisher, A V Kalinov, I F Voloshin</i>	
Manufacture of $(\text{Bi},\text{Pb})_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10}$-based Tapes with a Composite Sheath.....	189
<i>J-C Grivel, A B Abrahamsen, N H Andersen, K Saksl</i>	
Thin-film Washers As Secondaries in Superconducting Inductive Fault Current Limiters: the Role of the Cooling Atmosphere	195
<i>J A Lorenzo Fernández, M R Osorio, G Ferro, M Ruibal, J A Veira, M J Tello, F Vidal</i>	
Temperature Rise in a Model of Resistive HTS Element of a Fault Current Limiter	201
<i>I N Dul'kin, L M Fisher, V P Ivanov, A V Kalinov, V A Sidorov, D V Yevelev</i>	
Mechanical Treatments at Room Temperature of Nb_3Sn Practical Wires: Pre-torsion for Wires with a Different Architecture	209
<i>P Badica, H Oguro, S Awaji, G Nishijima, K Watanabe</i>	
Examination of Logic Operations with Silent Phase Qubit	215
<i>N Klenov, V Kornev, A Vedyayev, N Ryzhanova, N Pugach, T Rumyantseva</i>	
Which Superconducting Material for the Toroidal Field System of the Fusion DEMO Reactor?.....	221
<i>J L Duchateau, P Hertout</i>	
Operation of a High-T_c DC-SQUID-gradiometer on a Non-metallic Pulse Tube Refrigerator.....	228
<i>C Becker, A Steppke, T Koettig, J Gerster, L Dörrer, M Thürk, F Schmidl, P Seidel</i>	
Bulk YBCO Growth Monitored by in Situ High-temperature Magnetic Susceptibility	234
<i>C P Zhang, X Chaud, E Beaugnon, L Zhou</i>	
Low-noise RSFQ Circuits for a Josephson Qubit Control.....	241
<i>M Khabipov, D Balashov, E Tolkacheva, A B Zorin</i>	
Microstructure and the Grain Boundaries Evolution in Sequential Epitaxial Buffer Layers on RABiTS-Substrates	247
<i>M Elmechaouri, B Mönter, D Krämer, H Pusch, W Jasper, I Erdman, R Huehne</i>	
High-pressure Oxygenation of Thin-wall YBCO Single-domain Samples	256
<i>X Chaud, Y Savchuk, N Sergienko, T Prikhna, P Diko</i>	
Ultra High Quality Factor Resonators for Kinetic Inductance Detectors	262
<i>G Hammer, S Wuensch, K Iljin, M Siegel</i>	
Ultra-thin NbN Films on Si: Crystalline and Superconducting Properties.....	268
<i>K Iljin, R Schneider, D Gerthsen, A Engel, H Bartolf, A Schilling, A Semenov, H-W Huebers, B Freitag, M Siegel</i>	
High Quality Ultrathin NbN Layers on Sapphire for Superconducting Single Photon Detectors	274
<i>R Espiau de Lamaestre, Ph Odier, E Bellet-Amalric, P Cavalier, S Pouget, J-C Villégier</i>	
Trapped Field of YBCO Single-domain Samples Using Pulse Magnetization from 77K to 20K.....	280
<i>X Chaud, E Haanappel, J G Noudem, D Horvath</i>	

As-grown Superconducting Mg-B Films by Single-target Sputtering	286
<i>M Suzuki, L Qiao, H Onuma, T Kashiwakura</i>	
Improvement in the Frequency Characteristics of RF Magnetic Shielding: Effects of the Superposition of Two Ferrite Plates Over a BPSCCO Plate	292
<i>T Nishikubo, H Endo, K Itoh, M Itoh</i>	
Transport Critical Current Density of Bi-Sr-Ca-Cu-O/Ag Superconductor Tapes with Addition of Fe_3O_4 As Flux Pinning Center	298
<i>R Abd-Shukor, M M Awang Kechik, Halim S A</i>	
Magnetic Characteristics of Bulk BPSCCO Magnetic Sensors Fabricated by the Shock Compaction Method: Relationship Between the Magnetic Sensitivity and Thickness of the Magnetic Sensor	304
<i>H Fujita, T Miwa, M Itoh, H Kezuka, H Matsumoto, H Kishimura</i>	
Examination of the Resonator Structure for a Superconducting Transmitting Filter.....	310
<i>S Ohshima, S Takeuchi, M Osaka, H Kinouchi, S Ono, Jf Lee, A Saito</i>	
Quench-induced Partial Discharge Characteristics of HTS Cables	316
<i>N Hayakawa, S Ueyama, H Kojima, F Endo, Y Ashibe, T Masuda, M Hirose</i>	
Chemical Solution Deposition of LaMnO_3-based Films for Coated Conductors	322
<i>D Q Shi, X B Zhu, J H Kim, H C Lei, L Wang, Y P Sun, R Zeng, S X Dou</i>	
Bi2212 Superconducting Tubular Conductors Prepared by the Diffusion Process for Current Lead	328
<i>Y Yamada, T Shimohiro, T Ohtani, K Tachikawa, H Tamura, T Mito, M Ogata, M Iwamatsu</i>	
Magnetic Shielding Effect of Grounded Superconducting Niobium Layers.....	334
<i>Y Mizugaki, R Kashiwa</i>	
Fabrication of STO Buffer Films on MgO Substrates by the MOD Method.....	339
<i>T Uchida, S Watanabe, T Uchiyama, T Tachiki</i>	
1G Versus 2G-comparison from the Practical Standpoint for HTS Power Cables Use.....	345
<i>V E Sytnikov, V S Vysotsky, I P Radchenko, N V Polyakova</i>	
Study of RHQT-processed Nb_3Al Wires for High-field Accelerator Magnet Applications.....	349
<i>C Mitsuda, K Tsuchiya, A Terashima, A Yamamoto, T Takeuchi, N Banno, S Nimori, A Kikuchi, Y Iijima, K Okamoto, T Fukuda, K Takenaka, T Takao, K Nakamura, K Tagawa</i>	
Microwave Losses of MgB_2 Thin Films in DC Magnetic Field	357
<i>Ag Zaitsev, R Schneider, R Hott, Th Schwarz, J Geerk</i>	
Crystal Growth Process of Y123 Film Fabricated by Modified TFA-MOD Process.....	363
<i>N Mori, M Mukaida, R Teranishi, K Yamada, T Tanaka, K Tada</i>	
FCL: a Solution to Fault Current Problems in DC Networks	369
<i>Y Cointe, P Tixador, C Villard</i>	
Superconductivity of $\text{REBa}_2\text{Cu}_3\text{O}_{7-\delta}$ ($\text{RE} = \text{Y, Dy, Er}$) Ceramic Synthesized Via Coprecipitation Method	377
<i>I Hamadneh, A M Rosli, R Abd-Shukor, N R M Suib, S Y Yahya</i>	
Low Noise SQUID Based NDE with Non-magnetic Scanning System in Unshielded Environment	382
<i>Y Khatami, M Alavi, F Sarreshtedari, M Vesaghi, M Banzet, J Schubert, M Fardmanesh</i>	

Fabrication and Characterization of Bi2223/Ag Tapes with Interfilamentary Oxide Barriers for Reducing AC Losses	388
<i>R Inada, Y Fukumoto, Y Mitsuno, T Yasunami, Y Nakamura, A Oota, C S Li, P X Zhang</i>	
Effect of Sintering Temperature on Structural Defects and Superconducting Properties in MgB₂ + C₄H₆O₅.....	394
<i>M S A Hossain, J H Kim, X Xu, X L Wang, S X Dou</i>	
AC Susceptibility Studies of Inter-grains in Hg-1223 Superconductors.....	400
<i>N Sakamoto, T Akune, U Ruppert</i>	
Operating Characteristics of Superconducting Fault Current Limiter Using 24kV Vacuum Interrupter Driven by Electromagnetic Repulsion Switch	404
<i>M Endo, T Hori, K Koyama, I Yamaguchi, K Arai, K Kaiho, S Yanabu</i>	
Industrial Fe-Ni Alloys for HTS Coated Conductor Tapes	409
<i>J L Soubeyroux, P Chaudouet, A Girard, Ph Odier, L Ortega, T Waeckerlé</i>	
Domain Coexistence of Magnetism and Superconductivity: Appearance of Confined Vortex Loops.....	415
<i>M M Doria, A Rde C Romaguera, M V Milošević, F M Peeters</i>	
Effect of Element Substitution on the Superconducting Properties of Gd-based Melt-processed Bulk-superconductors	419
<i>M Oda, H Ikuta</i>	
Nb₃Al Thin Film Deposition for Low-noise Terahertz Electronics	424
<i>D Dochev, A B Pavolotsky, V Belitsky, H Olofsson</i>	
Annealing Effect on the Reproducibility of Josephson Junctions Made by Ion Irradiation.....	430
<i>M Sirena, S Matzen, N Bergeal, J Lesueur, G Faini, R Bernard, J Briatico, D Crété</i>	
Simulation of Electromagnetic and Thermal Processes in Rutherford Superconducting Cables During the Initiation of a Quench.....	436
<i>V Zubko, I Bogdanov, S Kozub, P Shcherbakov, L Shirshov, P Slabodchikov, L Tkachenko</i>	
New Technology of High T_c Superconducting Hot Electron Bolometer for Terahertz Mixing.....	442
<i>M Aurino, A J Kreisler, J-C Villégier, A F Dégardin</i>	
30 m YBCO Cable for the Albany HTS Cable Project.....	448
<i>H Yumura, M Watanabe, M Ohya, Y Ashibe, H Ito, T Masuda, K Sato</i>	
Study of NbN Josephson Junctions with a Tantalum Nitride Barrier Tuned to the Metal-insulator Transition	454
<i>R Setzu, E Baggetta, J C Villégier</i>	
Magnetisation AC-loss Measurements on YBa₂Cu₃O₇ Tapes with Weakly-ferromagnetic NiW Substrates	460
<i>S H Rupp, A D Caplin, M P Staines</i>	
Doped MgB₂ Prepared by Field Assisted Sintering Technique.....	467
<i>G Aldica, V Sandu, P Badica, G Nishijima, S Awaji, K Watanabe</i>	
Bulk YBCO with Discontinuous Irradiation Defects: Bose-glass Behaviour and Very High Critical Current Densities	473
<i>G Fuchs, K Nenkov, G Krabbes, L Shlyk, R Weinstein, A Gandini, R Sawh, B Mayes, D Parks</i>	
Effects of Sintering Atmosphere on the Superconducting Properties of SiC Doped Bulk MgB₂ Superconductor	479
<i>S Zhou, A V Pan, Y Zhang, S X Dou</i>	

AC Magnetization Loss Characteristics of HTS Striated Coated Conductors with Magnetic Substrates	485
<i>O Tsukamoto, A K M Alamgir, S Sekizawa, D Miyagi</i>	
MOCVD-SrTiO₃ Thin Film Microwave Coplanar Tunable Devices: Modelling of Varactors.....	491
<i>A Gensbittel, A F Dégardin, A J Kreisler</i>	
Superconducting Fault Current Limiter with Fast Vacuum Commutation Modulus.....	497
<i>D Alferov, D Yevsin, L Fisher, V Ivanov, V Sidorov</i>	
Impulse Measurement of Dynamic Current-voltage Curves of Superconducting Tape at Various Lengths and Shapes of Current Waves	504
<i>L Frolek, J Oravec, J &Sbreve,ouc</i>	
Simulations of the Quench-behaviour of Coated Conductors with Hot-spots.....	510
<i>A Henning, M Kurrat</i>	
High-speed Superconducting Single Photon Detectors for Innovative Astronomical Applications	514
<i>P Feautrier, E le Coarer, R Espiau de Lamaestre, P Cavalier, L Maingault, J-C Villégier, L Frey, J Claudon, N Bergeard, M Tarkhov, J-P Poizat</i>	
Modeling and Simulation of Precursor Diamagnetism in High Critical Temperature Cuprates.....	523
<i>R B Kasal, E V L de Mello</i>	
Magnesium Diboride Films on Metallic and Ceramic Substrates	529
<i>M Auinger, G Gritzner</i>	
Yttrium-barium Cuprate Superconductors on Titanium and Rutile Substrates	534
<i>C Mitterbauer, G Gritzner, N Hörhager, H W Weber</i>	
Test of a 2 MVA Medium Voltage HTS Fault Current Limiter Module Made of YBCO Coated Conductors	539
<i>H-P Kraemer, W Schmidt, M Wohlfart, H-W Neumueller, A Otto, D Verebelyi, U Schoop, A P Malozemoff</i>	
Cooling Fins to Limit the Hot-electron Effect in DC SQUIDs.....	545
<i>P Falferi, R Mezzena, M Mück, A Vinante</i>	
YBCO Thin Films on CeO₂ Buffered Silver Substrates	551
<i>B Gallistl, G Gritzner</i>	
Switching Characteristics for Thin Films of High-T_c Superconductors Driven by Optical and Current Pulses with Varied Lengths	555
<i>J Waskiewicz</i>	
Josephson Coupling in Untwinned YBa₂Cu₃O_{7-x}/Nb d-wave Junctions	560
<i>B Chesca, H J H Smilde, H Hilgenkamp</i>	
Modification of Critical Current in HTSC Tape Conductors by a Ferromagnetic Layer.....	566
<i>F Gömöry, J Šouc, E Seiler, M Vojenčiak, X Granados</i>	
Toward the Optimization of Electronic Refrigerators	572
<i>B Jug, Z Trontelj</i>	
Effort to Produce Textured CeO₂ and MgO Films by the Spray Pyrolysis Technique As Buffer Layers for Coated Conductors	578
<i>D Pavlopoulos, S Al Khatib, T W Button, J S Abell</i>	

Calculations of AC Current Losses from the Experimental Field Profiles in Various Types of Coated Conductors with Applied Currents	584
<i>J Yoo, S Lee, Y Jung, J Lee, D Youm, H Ha, H Kim, R-K Ko, S Oh</i>	
Calculations of AC Magnetic Losses from the Experimental Field Profiles in Various Types of Coated Conductors Under Applied Fields	590
<i>J Yoo, S Lee, Y Jung, J Lee, D Youm, H Ha, H Kim, R-K Ko, S Oh</i>	
Development of Superconducting Magnetic Bearing Using Superconducting Coil and Bulk Superconductor	599
<i>H Seino, K Nagashima, Y Arai</i>	
Compactly Composed Strong Magnetic Field Generators with Cryo-cooled High Temperature Bulk Superconductors As Quasi-permanent Magnets	607
<i>T Oka, Y Hirose, H Kanayama, H Kikuchi, J Ogawa, S Fukui, T Sato, M Yamaguchi</i>	
SQUID-NDE of Wire Breakage in Aluminium Transmission Line	613
<i>Y Hatsukade, A Miyazaki, H Matsuura, T Maeda, Y Fuke, S Tanaka</i>	
Improvement of Levitation Force Characteristics in Magnetic Levitation Type Seismic Isolation Device Composed of HTS Bulk and Permanent Magnet	619
<i>M Tsuda, T Kawasaki, T Yagai, T Hamajima</i>	
Single Domain YBCO/Ag Bulk Superconductors Fabricated by Seeded Infiltration and Growth	625
<i>K Iida, N H Babu, Y Shi, T Miyazaki, N Sakai, M Murakami, D A Cardwell</i>	
Filament and Interface Structure of In-Situ MgB₂ Wires	630
<i>I Hušek, P Kováč</i>	
Computation of Critical Current in Artificially Structurated Bulk Samples from Hall Measurements	636
<i>M Carrera, X Granados, J Amorós, R Maynou, T Puig, X Obradors</i>	
Grain Growth and Biaxial Texture of Chemically Deposited La₂Zr₂O₇ Buffer Layers for YBCO-coated Conductors	642
<i>L Molina, S Engel, K Knoth, R Hühne, B Holzapfel, O Eibl</i>	
Review and Comparison of RSFQ Asynchronous Methodologies	648
<i>L C Müller, H R Gerber, C J Fourie</i>	
Trimming of Critical Current in Niobium Josephson Devices by Laser Annealing	656
<i>C Granata, A Vettoliere, L Petti, M Rippa, B Ruggiero, P Mormile, M Russo</i>	
Flux Flow Velocity Instability in Wide Superconducting Films	662
<i>G Grimaldi, A Leo, A Nigro, S Pace, A A Angrisani, C Attanasio</i>	

VOLUME 2

DI-BSCCO Wire with I_c Over 200 A at 77 K.....	668
<i>N Ayai, T Kato, J Fujikami, S Kobayashi, M Kikuchi, K Yamazaki, S Yamade, T Ishida, K Tatamidani, K Hayashi, K Sato, R Hata, H Kitaguchi, H Kumakura, K Osamura, J Shimoyama</i>	
Current-voltage Dependencies in Ultra-narrow Superconducting Nanowires in the Regime of Quantum Fluctuations	674
<i>M Zgirski, K -P Riionen, K Yu Arutyunov</i>	
Persistent Currents in Superconducting Nanorings	679
<i>T Hongisto, K Yu Arutyunov</i>	
Vapour Cooled 2G HTS Current Leads	687
<i>E Demikhov, E Kostrov, A Tstkhovrebov</i>	

Yield Strength, Shear Stress and Toughness of YBCO Samples Textured by Bridgman Technique	692
<i>J J Roa, E Jiménez-Piqué, X G Capdevila, M Martínez, M Segarra</i>	
A Two-dimensional Finite Element Method to Calculate the AC Loss in Superconducting Cables, Wires and Coated Conductors.....	698
<i>Z Hong, L Ye, Y Jiang, R Pei, A M Campbell, T A Coombs</i>	
Comparative Study of Different Chemical Doping Effect on the J_c-B Properties of MgB₂ Tapes.....	704
<i>X Zhang, Y Ma, Z Gao, D Wang, L Wang</i>	
Current Redistribution Around the Superconducting-to-normal Transition in Superconducting Nb-Ti Rutherford Cables.....	710
<i>G P Willering, A P Verweij, H H J Ten Kate</i>	
Advantage of Superconducting Bearing in a Commercial Flywheel System.....	717
<i>R Viznichenko, A V Velichko, Z Hong, T A Coombs</i>	
Synthesis and Bulk Properties of Oxychloride Superconductor Ca_{2-x}Na_xCuO₂Cl₂.....	723
<i>N D Zhigadlo, J Karpinski, S Weyeneth, R Khasanov, S Katrych, P Wägli, H Keller</i>	
Chemical Solution Deposition of Textured BaTiO₃ Buffer Layers on Cube Textured Ni-tapes Fabricated from Commercially Available Nickel	729
<i>O Staller, G Gritzner</i>	
Design of an HTS Motor	733
<i>Y Jiang, R Pei, Z Hong, Q Jiang, T A Coombs</i>	
Breakpoint Region in the IV-characteristics of Intrinsic Josephson Junctions	739
<i>Yu M Shukrinov, F Mahfouzi</i>	
Design of a Multidisk Axially Excited Low Power Class Superconducting Motor for Industrial Application	743
<i>J Lloberas, X Granados, J López, X Obradors</i>	
Adjustable Electronic Phantom for Volume Magnetic Susceptibility Measurements	748
<i>V Zrubec, J Mařka, M Škrátek</i>	
Effects of Sheath Materials and Thermo-mechanical Treatments on the Superconductivity of MgB₂ Wires and Tapes	753
<i>G Serrano, A Serquis, D Rodrigues Jr, M T Malachevsky, J M Espasandin, C Ayala</i>	
Fabrication of 'TAMU3', a 'Wind/React' Stress-managed 14T Nb₃Sn Block Coil Design	759
<i>R Blackburn, N Diacenko, T Elliott, A Jaisle, A McInturff, P McIntyre, A Sattarov</i>	
High Anisotropic Critical Current Densities in MgB₂ Tapes	765
<i>G Serrano, A Serquis, L Civale, B Majorov, M T Malachevsky, C Ayala</i>	
Superconducting Properties of Chromium Cr-YBCO Grown by Pulsed Laser Deposition.....	771
<i>S Isber, C Madi</i>	
The New Route Process of V₃Ga Mono-cored and Multifilamentary Wires Using High Ga Content Cu-Ga Compound and V Matrix Precursor	775
<i>Y Hishinuma, A Kikuchi, Y Iijima, T Takeuchi, A Nishimura</i>	
Compact HTS Bandpass Filter Employing CPW Quarter-wavelength Resonators with Strongly-coupled Open Stubs	781
<i>K Satoh, D Koizumi, S Narahashi</i>	

A New Magnet Configuration for a Solution NMR Spectrometer	787
<i>T Suzuki, M Okada, T Wakuda, S Kido, H Tsukamoto, K Takeuchi, H Kitaguchi</i>	
Robot-arm-based Mobile HTS SQUID System for NDE of Structures	793
<i>K Yotsugi, Y Hatsukade, S Tanaka</i>	
Analytical Electromagnetic Calculations for Practical Superconductors	799
<i>T Tominaka</i>	
Effects of Ag Particle and Pore Distributions on Fracture Toughness of Dy123 Bulks	805
<i>R Hashimoto, A Murakami, H Miyata, K Katagiri</i>	
Fabrication and Characterization of High-Q NMR Antenna Coil Using Superconducting MgB₂ Thin Films	811
<i>H Yamamoto, K Saitoh, M Okada, H Kitaguchi</i>	
Fracture Toughness of Low Porosity Dy123 Bulks Melt-processed in Pure Oxygen	815
<i>A Murakami, H Miyata, R Hashimoto, K Katagiri</i>	
Mechanical Behaviour Analysis of Superconducting Magnet in LHD-type Reactor FFHR	821
<i>H Tamura, K Takahata, T Mito, S Imagawa, A Sagara</i>	
Fundamental Investigation of a Superconducting Level Sensor for Liquid Hydrogen with MgB₂ Wire	827
<i>K Kajikawa, K Tomachi, N Maema, M Matsuo, S Sato, K Funaki, H Kumakura, K Tanaka, M Okada, K Nakamichi, Y Kihara, T Kamiya, I Aoki</i>	
Development of Cryogenic Probe System for High-sensitive NMR Spectroscopy	833
<i>K Saitoh, H Yamamoto, K Kawasaki, Y Fukuda, H Tanaka, M Okada, H Kitaguchi</i>	
Origin of the Thickness Dependence of Critical Current Densities in YBCO Films Prepared by Pulsed Laser Deposition	838
<i>K Ohki, K Develos-Bagarinao, H Yamasaki, Y Nakagawa</i>	
Superconducting Properties and Microstructure of PLD-ErBa₂Cu₃O_{7-δ} Films with BaNb₂O₆	843
<i>H Kai, M Mukaida, R Teranishi, N Mori, K Yamada, S Horii, A Ichinose, K Matsumoto, Y Yoshida, R Kita, S Kato, S Awaji, K Watanabe, M Namba, T Fujiyoshi</i>	
Evaluation of J_c Anisotropy in Nd123 Single Crystals	848
<i>T Katayama, J-i Shimoyama, H Ogino, S Horii, K Kishio</i>	
Thick REBaCuO Films for Power Applications Planted on Silver Tapes	852
<i>M Muralidhar, N Sakai, T Machi, I Hirabayashi, S Tanaka</i>	
Enhanced T_c of Bi(Pb)2223 Sintered Bulks Up to 115 K	858
<i>A Tanimoto, J-i Shimoyama, S Horii, K Kishio</i>	
Roebel Assembled Coated Conductor Cables (RACC): AC-losses and Current Carrying Potential	862
<i>A Frank, R Heller, W Goldacker, A Kling, C Schmidt</i>	
Comparison of CSD-YBCO Growth on Different Single Crystal Substrates	868
<i>J Kunert, M Bäcker, M Falter, D Schroeder-Obst</i>	
Novel Dual Mode Disk-shaped Resonator Filter with HTS Thin Film	873
<i>M Ishii, A Akasegawa, T Nakanishi, K Yamanaka</i>	
Degradation of YBCO Coated Conductors Caused by Over-current Pulses	879
<i>X Wang, H Ueda, A Ishiyama, Y Iijima, T Saitoh, N Kashima, M Mori, T Watanabe, S Nagaya, T Katoh, T Machi, Y Shiohara</i>	

Systematic Studies on T_c of La123 at Carrier Optimally-doped State	885
<i>T Asanuma, J Shimoyama, T Nakashima, H Ogin, S Horii, K Kishio</i>	
Temperature- and Field-dependence of Critical Currents in NbN Microbridges.....	889
<i>A Engel, H Bartolf, A Schilling, K Il'in, M Siegel, A Semenov, H-W Hübers</i>	
A Novel 2-dimensional Artificial Pinning Center	895
<i>M Takamura, M Mukaida, S Horii, A Ichinose, R Kita, S Kato, K Matsumoto, Y Yoshida, M Namba, S Awaji, K Watanabe, R Teranishi, K Yamada, N Mori, Y Hisatsune</i>	
Self-recovery Characteristics of High-T_c Superconducting Fault Current Limiting Transformer (HT_c-SFCLT) with 2G Coated Conductors.....	901
<i>H Kojima, S Ito, N Hayakawa, F Endo, M Noe, H Okubo</i>	
Design Study of High-temperature Superconducting Generators for Wind Power Systems	907
<i>N Maki</i>	
Enhanced J_c of B-rich and SiC Doped MgB₂ Tapes Fabricated by a Modified In-situ PIT Method with Two Stage Heat Treatment.....	913
<i>O Miura, H Tomioka, D Ito, N Harada</i>	
Microwave Response of Long Intrinsic Josephson Junctions Fabricated on Bi-2212 Single Crystals	919
<i>T Tachiki, T Uchida</i>	
MOCVD of Coated Conductors on RABiTS	925
<i>O Stadel, R Muydinov, H Keune, J Schmidt, A Blednov, G Dosovitsky, S Samoylenko, O Gorbenko, A Kaul, G Kotzyba, R Nast, W Goldacker</i>	
MgB₂ Coils for a DC Superconducting Induction Heater	931
<i>M Runde, A Stenvall, N Magnusson, G Grasso, R Mikkonen</i>	
Oxygenation Mechanism of TSMG YBCO Bulk Superconductor	937
<i>P Dík, M Kaňuchová, X Chaud, P Odier, X Granados, X Obradors</i>	
10-bit Rapid Single Flux Quantum Digital-to-analog Converter for AC Voltage Standard.....	943
<i>M Maezawa, F Hirayama</i>	
Position Control of Active Magnetic Levitation Using Sphere-shaped HTS Bulk for Inertial Nuclear Fusion	948
<i>K Suga, K Riku, K Agatsuma, H Ueda, A Ishiyama</i>	
Superconductivity at 108 K in the Simplest Non-toxic Double-layer Cuprate of Ba₂CaCu₂O₄(O,F)₂.....	954
<i>P M Shirage, D D Shivagan, A Crisan, Y Tanaka, Y Kodama, H Kito, A Iyo</i>	
Epitaxial Thick Film High-T_c SQUIDs	960
<i>M I Faley, S B Mi, C L Jia, U Poppe, K Urban, R L Fagaly</i>	
AFM Investigations of the Surface Morphology of Buffer Layers for All-chemical Solution Coated Conductors	966
<i>M Steffens, M Falter, M Bäcker, C Oligschleger</i>	
Flux–creep Activation Energy for Pure and SiC Doped MgB₂ by AC-susceptibility Measurements	972
<i>V Mihalache, V Sandu, G Aldica, J R Groza</i>	
Study on 1 GW Class Hybrid Energy Transfer Line of Hydrogen and Electricity	978
<i>S Yamada, Y Hishinuma, T Uede, K Schippl, O Motojima</i>	

Overcurrent Characteristics of 1 m Long Superconducting Model Cable Using YBCO Coated Conductors	985
<i>H Ueda, X Wang, A Ishiyama, S Mukoyama, M Yagi, N Kashima, S Nagaya, Y Shiohara</i>	
Visualization of Normal-zone Initiation and Propagation Using Fluorescent Paints.....	991
<i>A Ishiyama, H Murakami, M Tsuchiya, H Ueda, H Kato, K Nara, Y Shiohara</i>	
Fatigue Tests of YBCO Coated Conductors	997
<i>S Bamba, Y Tanaka, T Ando, H Ueda, A Ishiyama, Y Yamada, Y Shiohara</i>	
Crystal Grains Alignment of SmBCO Film by Advanced TFA-MOD Method	1003
<i>R Teranishi, A Mitani, K Yamada, N Mori, Y Hisatsune, M Mukaida, M Inoue, T Kiss, K Nakaoka, J Matsuda, T Izumi, Y Shiohara</i>	
Formation of Vortex Clusters and Giant Vortices in Mesoscopic Superconducting Disks with Strong Disorder.....	1009
<i>W Escoffier, I V Grigorieva, V R Misko, B J Baelus, F M Peeters, L Y Vinnikov, S Dubonos</i>	
Strong Reduction of the Field-dependent Microwave Surface Resistance in YBCO with BaZrO₃ Inclusions.....	1015
<i>N Pompeo, V Galluzzi, A Augieri, F Fabbri, G Celentano, T Petrisor, R Rogai, E Silva</i>	
Nb-based Overdamped Junctions with Improved Performance for Measurement Applications.....	1021
<i>V Lacquaniti, D Andreone, C Cassiago, N De Leo, M Fretto, S Maggi, A Sosso, M Belogolovskii</i>	
Pinning Mechanism in (Bi,Pb)-2223 Polycrystalline Samples Prepared with Al₂O₃ Nano-particles	1027
<i>A Ghattas, F Ben Azzouz, M Annabi, M Zouaoui, M Ben Salem</i>	
Influence of the Current Through One Turn of a Multilayer Coil on the Nearest Turn in a Consecutive Layer	1033
<i>P Suárez, A Alvarez, B Pérez, J M Ceballos</i>	
Magneto-transport Characteristics of Superconducting RBa₂Cu₃O_{7-delta} Multilayers and Quasi-multilayers.....	1040
<i>C B Cai, Z Y Liu, J L Liu, L Peng, B Gao, L L Ying, Y M Lu, C Y Pan</i>	
Importance of Local Stresses and Strains During the Fabrication of Nb₃Sn Composite Superconductors	1046
<i>R Taillard, S Guyot, A Rabhi, C Verwaerde</i>	
Enhancement of Superconductivity Properties in Nano ZrO₂ Particles Added Bi_{1.8}Pb_{0.4}Sr₂Ca₂Cu₃O_x Ceramics	1052
<i>A Ghattas, M Zouaoui, M Annabi, A Madani, F Ben Azzouz, M Ben Salem</i>	
Bipolar Electrical Coil Based on YBCO Bulks: Initial Tests	1057
<i>A Alvarez, P Suárez, J M Ceballos, B Pérez, F Werfel, U Floegel-Delor</i>	
A Technique for Separating the Trapped Vortex and Current in Superconducting Rings	1062
<i>I Quelle, H González-Jorge, L Romaní, G Domarco</i>	
Magnetoresistance Studies of PbO Addition in YBa₂Cu₃O_{7-δ} Superconductor.....	1067
<i>D K Mani, M Zouaoui, M Annabi, F Ben Azzouz, M Ben Salem</i>	
HTS Cables Open the Window for Large-scale Renewables	1073
<i>A Geschiere, D Willén, E Piga, P Barendregt</i>	
Study of Light Nonstoichiometry in Eu-Ba-Cu-O Systems.....	1079
<i>A Cigáň, J Maňka, J Polovková, M Majerová, M Kopčok, I Van Driessche, V Zrubec</i>	

Trapped Magnetic Field of 48 mm Diameter Single-domain Dy-123 System Superconductor	1085
<i>H Shimada, H Fujimoto, S Yamazaki, S Yoshizawa</i>	
Improvement the Superconducting Parameters of Ti-1212 by Ruthenium Substitution	1091
<i>R Awad</i>	
High-speed Single Flux-quantum Up/down Counter for Neural Computation Using Stochastic Logic	1097
<i>T Onomi, T Kondo, K Nakajima</i>	
Nickel-copper Alloy Tapes As Textured Substrates for YBCO Coated Conductors	1103
<i>A Vannozi, G Celentano, A Angrisani, A Augieri, L Ciontea, I Colantoni, V Galluzzi, U Gambardella, A Mancini, T Petrisor, A Rufoloni, G Thalmaier</i>	
Basic Concepts, Status, Opportunities, and Challenges of Electrical Machines Utilizing High-temperature Superconducting (HTS) Windings	1109
<i>J Frauenhofer, J Grundmann, G Klaus, W Nick</i>	
High Power Density Superconducting Motor for Control Applications	1119
<i>J López, X Granados, J Lloberas, R Torres, J Grau, R Maynou, R Bosch</i>	
Pinning Performance of $(\text{Nd}_{0.33}\text{Eu}_{0.2}\text{Gd}_{0.47})\text{Ba}_2\text{Cu}_3\text{O}_y$ Single Crystal.....	1126
<i>M Jirsa, M Rames, P Das, M R Kobischka, T Wolf, U Hartmann</i>	
Critical Current in Nonhomogeneous YBCO Coated Conductors	1131
<i>L Rostila, R Mikkonen, J Lehtonen</i>	
Dissipated Energy As a Design Parameter of Coated Conductors for Their Use in Resistive Fault Current Limiters.....	1137
<i>C Schacherer, A Kudymow, M Noe</i>	
Pulsed-field Magnetization Study for Gd123 Bulk HTS Cooled with Condensed Neon for Axial-gap Type Synchronous Motor	1142
<i>T Sano, Y Kimura, D Sugyo, K Yamaguchi, M Izumi, T Ida, H Sugimoto, M Miki</i>	
Design and Characterization of a $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ DC-superconducting Quantum Interference Device for Magnetic Microscopy	1149
<i>A Prigobbo, E Sarnelli</i>	
Phase Engineering Techniques in Superconducting Quantum Electronics	1155
<i>O Mielke, Th Ortlepp, B Dimov, F H Uhlmann</i>	
Pulsed Electron Deposition (PED) of Single Buffer Layer for 'low-cost' YBCO Coated Conductors	1164
<i>E Gilioli, M Baldini, M Bindi, F Bissoli, D Calestani, F Pattini, S Rampino, M Rocca, S Zannella, R Woerdenweber</i>	
AC Loss of the Short Coaxial Superconducting Cable Model Made from ReBCO Coated Tapes.....	1170
<i>J Šouc, F Gömöry, M Vojenčíak, L Frolek, D Isfort, J Ehrenberg, J Bock, A Usoskin, A Rutt</i>	
Magnetic Compensation of the Gravity by Using Superconducting Axisymmetric Coils: Spherical Harmonics Method	1175
<i>C Lorin, A Maillert</i>	
Development of an HTS Motor with Ho-123 Superconducting Field Coils at Liquid Nitrogen Temperature.....	1181
<i>H Sugimoto, Z N Wang, T Morishita, Y Hondou, T Takeda, H Togawa</i>	
Predictive Study of the Poloidal Field Coil Insert Behaviour Under Pulsed Current Tests	1187
<i>B Lacroix, D Ciazynski, J L Duchateau, S Nicollet, N Pauty</i>	

Growth by MOCVD of (001) Bi-2223 Superconducting Thin Films on (001) and (110) MgO Substrates	1193
<i>K Endo, P Badica</i>	
Development and Test of an Axial Flux Type PM Synchronous Motor with Liquid Nitrogen Cooled HTS Armature Windings.....	1198
<i>H Sugimoto, T Morishita, T Tsuda, T Takeda, H Togawa, T Oota, K Ohmatsu, S Yoshida</i>	
Intermodulation and Power Handling in MgB₂ Thin Films.....	1204
<i>D E Oates, D Agassi, B H Moeckly</i>	
Development of a Coreless HTS Synchronous Generator Operating at Sub-cooled Liquid Nitrogen Temperatures.....	1210
<i>M K Al-Mosawi, W Bailey, C Beduz, K Goddard, Y Yang</i>	
250 kW Flywheel with HTS Magnetic Bearing for Industrial Use	1216
<i>F N Werfel, U Floegel - Delor, T Riedel, R Rothfeld, D Wippich, B Goebel, G Reiner, N Wehlau</i>	
Anomalous Magnetic Hysteresis in the Microwave Surface Resistance of MgB₂ Superconductor	1224
<i>A Agliolo Gallitto, M Bonura, M Li Vigni</i>	
Field and Temperature Dependence of Critical Currents in Industrially Manufactured High-T_c Wires and Tapes	1230
<i>R Herzog, R Wesche, P Bruzzone</i>	
Critical Current Density of YBa₂Cu₃O_{7-x} Films with BaZrO₃ Inclusions on SrTiO₃ and Al₂O₃ Substrates	1236
<i>A Augieri, V Galluzzi, G Celentano, F Fabbri, A Mancini, A Rufoloni, A Vannozzi, U Gambardella, G Padeletti, A Cusmà, T Petrisor, L Ciontea</i>	
Study of Nb/Al Interface Combining Spectroscopy of Reflected Electrons with Ion Sputtering	1242
<i>A V Lubchenko, V P Afanas'ev, M V Lukashevsky, M Norell, A B Pavolotsky, S D Fedorovich</i>	
Nb₃Sn Conductor Development and Characterization for NED⁺	1248
<i>T Boutboul, A den Ouden, A Devred, P Fabbricatore, M Greco, D Leroy, L Oberli, D Pedrini, G Volpini</i>	
Vortex Molecule and I-soliton Studies in Multilayer Cuprate Superconductors	1257
<i>D D Shivanan, A Crisan, P M Shirage, A Sundaresan, Y Tanaka, A Iyo, K Tokiwa, T Watanabe, N Terada</i>	
Extracting the Diffusivity Ratio from Point Contact Andreev Reflection Spectroscopy and Upper Critical Field Measurements in MgB₂.....	1263
<i>K A Yates, Y Miyoshi, J Grunwell, K Riggall, Y Bugoslavsky, S K Chen, J L MacManus-Driscoll, A V Pogrebnyakov, X X Xi, L F Cohen</i>	
X-ray Determination of Mosaic Structure in Variable Thickness EuBa₂Cu₃O_{7-δ} Thin Films	1269
<i>S C Wimbush, M C Li, M E Vickers, Q X Jia, J L MacManus-Driscoll</i>	
Improvement of J_c and H_{c2} in MgB₂ Superconductor with Citric Acid Addition.....	1275
<i>R Zeng, L Lu, J L Wang, W X Li, Dq Shi, J Horvat, Sx Dou</i>	
The Flux Creep Effect in Superconducting Magnetic Bearings Levitation Force	1281
<i>D H N Dias, G G Sotelo, R B Kasal, R de Andrade Jr, A C Ferreira</i>	
Microstructure – Critical Current Density Model for MgB₂ Wires and Tapes	1287
<i>B Birajdar, O Eibl</i>	

Numerical and Experimental Comparison of Electromechanical Properties and Efficiency of HTS and Ferromagnetic Hysteresis Motors.....	1293
<i>D Inácio, S Inácio, J Pina, A Gonçalves, M Ventim Neves, A Leão Rodrigues</i>	
Power Electronics Performance in Cryogenic Environment: Evaluation for Use in HTS Power Devices.....	1300
<i>P Pereira, S Valtchev, J Pina, A Gonçalves, M Ventim Neves, A L Rodrigues</i>	
A Test Rig for Thrust Force Measurements of an All HTS Linear Synchronous Motor	1305
<i>J Pina, P Pereira, S Valtchev, A Gonçalves, M Ventim Neves, A Alvarez, L Rodrigues</i>	
An Electrical Gearbox by Means of Pole Variation for Induction and Superconducting Disc Motor	1312
<i>S Inácio, D Inácio, J M Pina, S Valtchev, M V Neves, A L Rodrigues</i>	
Scan Measurements on ROEBEL Assembled Coated Conductors (RACC).....	1320
<i>R Fuger, M Zehetmayer, M Eisterer, S I Schlachter, W Goldacker, C Schmidt, H W Weber</i>	
Josephson Spectroscopy of Terahertz Losses in [100]-tilt $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ Bicrystal Junctions	1326
<i>Y Divin, M Lyatti</i>	
Investigations of Bronze Processed Nb_3Sn Wires with Enhanced Characteristics.....	1332
<i>A Shikov, A Vorobieva, E Dergunova, K Mareev, V Lomaev, L Vozhdaev, M Nasibulin, O Malafeeva, V Drobishev, I Abdyukhanov, S Balaev</i>	

VOLUME 3

Angular Dependence of Critical Currents in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ Vicinal Films	1338
<i>K R Schoppl, H W Weber, J H Durrell</i>	
Numerical Modelling of Ac Limiting Properties of a Bare MgB_2 Wire in Liquid Neon Bath	1343
<i>M Majoros, M D Sumption</i>	
Fabrication Process Development for Superconducting VLSI Circuits: Minimizing Plasma Charging Damage.....	1348
<i>S K Tolpygo, D Amparo</i>	
Design for Transmit Bandpass Filter and Trimming Method Using Superconducting Bulk Ring Resonator and Dielectric Rods	1357
<i>A Saito, T Tomioka, S Ono, J H Lee, M Osaka, H Teshima, S Ohshima</i>	
Experimental Study on an SFCL Using Series-connected YBCO Thin Films.....	1363
<i>M D Ainslie, J Baba, T Nitta</i>	
Fabrication of Extruded Wire of MgB_2/Al Composite Material and Its Superconducting Property and Microstructure.....	1369
<i>K Matsuda, K Nishimura, S Ikeno, K Mori, S Aoyama, Y Yabumoto, Y Hishinuma, I Mullerova, L Frank, V V Yurchenko, T H Johansen</i>	
Design Criteria for Warm Temperature Dielectric Superconducting DC Cables: Impact of Co-pole Magnetic Fields.....	1375
<i>P M Grant, W V Hassenzahl, B Gregory, S W Eckroad</i>	
Development of Cryogenic Cooling System Using a Double G-M Cryo-cooler for NMR Spectrometer.....	1384
<i>H Tanaka, Y Fukuda, M Okada, N Saho, K Saitoh, H Kitaguchi</i>	

Magnetization Controlled Effects in Overlap Josephson Junctions Coupled with Submicron Magnetic Dots.....	1390
A A Fraerman, B A Gribkov, S A Gusev, A Y Klimov, Y N Nozdrin, V V Rogov, A V Samokhvalov, S N Vdovichev, L Fritzsch, E Ili'chev, R Stolz	
Enhanced Flux Pinning Properties of RE123 Melt-solidified Bulks by Dilute Impurity Doping.....	1396
Y Ishii, T Nakashima, Y Yamazaki, J Shimoyama, H Ogino, S Horii, K Kishio	
Thermal Expansion of Granular Superconductors Based on Elastic Response of Josephson Junction Arrays.....	1400
G Rotoli, S Sergeenkova, G Filatrella, F M Araujo-Moreira	
Over-current Carrying Characteristics of Rectangular-shaped YBCO Thin Films Prepared by MOD Method	1406
N Hotta, Y Yokomizu, D Iioka, T Matsumura, T Kumagai, H Yamasaki, M Shibuya, T Nitta	
Bulk Nanocrystalline Superconducting $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$.....	1412
J Y Xiang, C Fleck, D P Hampshire	
Fabrication of Large Eu-Ba-Cu-O Bulk Superconductors for Compact NMR Magnet.....	1419
S Nariki, N Sakai, I Hirabayashi, M Yoshikawa, Y Itoh, T Nakamura, H Utsumi	
Continuous Observation on Heart-disease-model Mice Using Biomagnetic Measurement System	1425
Y Kasai, T Oikawa, Y Saitoh, Y Ono, A Ishiyama, N Kasai, A Odawara, K Chinone	
Sparking Plasma Sintering Method for Developing Cube Textured Ni7W/Ni12W/Ni7W Multi-layer Substrates Used for Coated Conductors	1431
Y Zhao, H Suo, Y Zhu, M Liu, D He, S Ye, L Ma, R Fan, M Zhou, Y Ji	
Nanocrystalline Nb-Al-Ge Mixtures Fabricated Using Wet Mechanical Milling.....	1437
E Pusceddu, S Charlton, D P Hampshire	
Preparation of SiC Doped In-Situ MgB_2 Mono- and 7-filamentary Wires by Continuous Tube Forming and Filling Technique	1443
L Ma, H L Suo, Z L Zhang, T Y Gao, M Liu, Y Zhao, M L Zhou, R Flükiger	
MoRe-based Tunnel Junctions and Their Characteristics	1448
V Shaternik, S Larkin, V Noskov, V Chubatyj, V Sizontov, A Miroshnikov, A Karmazin	
Thermally Assisted Vortex Motion in Intrinsic Josephson Junctions	1454
A Irie, G Oya	
Single and Binary Rare Earth $\text{REBa}_2\text{Cu}_3\text{O}_{7-\delta}$ Films Prepared by Chemical Solution Deposition	1460
B Gao, C B Cai, Z Y Liu, J L Liu, L L Ying, S X Cao, J C Zhang, T Thersleff, R Hühne, B Holzapfel	
Advanced Electron Microscopy Methods for the Analysis of MgB_2 Superconductor	1465
B Birajdar, N Peranio, O Eibl	
Two-dimensional Magnetic Field Dependence of Current-voltage Characteristics of Rectangular, Hexagonal and Triangle Shape Superconducting Junctions and DC-SQUIDs	1471
A Nakayama, N Watanabe, S Abe, Y Nishi, Y Okabe	
Development of New HTS-SQUID and HTS Current Sensor for HTS-SQUID Beam Current Monitor	1477
T Watanabe, Y Sasaki, M Kase, S Watanabe, T Ikeda, T Kawaguchi, Y Yano	

Study on the Formation of YBCO Phase and Texture Transformation of Ag Substrate During the Heat Treatment of TFA-MOD Process	1483
<i>M Liu, H L Suo, Y Zhao, S Ye, L Ma, D He, M L Zhou</i>	
Superconducting Properties of Gd-Ba-Cu-O Single Grains Processed from a New, Ba-rich Precursor Compound.....	1487
<i>Y Shi, N Hari Babu, K Iida, D A Cardwell</i>	
Fabrication of Aluminum Nitride Barrier SIS Mixer Devices Using Nitrogen Plasma Diluted by Noble Gases	1493
<i>A Endo, H Inoue, S Asayama, T Noguchi, M Kroug, T Tamura</i>	
On the Theory of Strong Pinning in High-temperature Superconducting Films.....	1499
<i>A V Semenov</i>	
AC Losses of a Tri-axial Superconducting Cable with Balanced Three-phase Current Distributions	1505
<i>T Hamajima, M Tsuda, T Yagai, A Nuri Ozcivan, K Shimoyama, K Aoyagi, S Soeda</i>	
Numerical Studies on DC-SQUID Sensors with Tightly Coupled Input Coil.....	1511
<i>J Plekies, O Usenko, J Flokstra</i>	
Dramatic Effects of Ag Addition on Low Temperature Synthesis of MgB₂.....	1517
<i>J Shimoyama, K Hanafusa, A Yamamoto, Y Katsura, S Horii, K Kishio, H Kumakura</i>	
Pinning and Magnetic Flux Diffusion in APC Composites with Superconducting Filaments	1523
<i>G L Dorofeev, V M Drobin, N M Vladimirova, N I Kozlenkova, E V Nikulenkov, N I Salunin</i>	
Using Non-fluorine Precursor to Prepare YBCO Thin Films by Chemical Solution Deposition.....	1529
<i>W Cui, J L Tanner, T W Button, J S Abell</i>	
Development of an MCG/MEG System for Small Animals and Its Noise Reduction Method.....	1533
<i>M Miyamoto, J Kawai, Y Adachi, Y Haruta, K Komamura, G Uehara</i>	
On the Mechanism of Thickness Dependence of the Critical Current Density in HTS Cuprate Epitaxial Films	1539
<i>Yu V Cherpak, V L Svetchnikov, A V Semenov, V O Moskaliuk, C G Tretiatchenko, V S Flis, V M Pan</i>	
SIN Feature Observed in Intrinsic Josephson Junction Characteristics for Overdoped Bi₂Sr₂CaCu₂O_{8+δ}	1547
<i>M Suzuki, R Takemura, M Ohmaki, K Anagawa</i>	
Analysis of Coupled Electromagnetic-thermal Effects in Superconducting Accelerator Magnets	1553
<i>E Fischer, R Kurnyshov, P Shcherbakov</i>	
Effect of Doping by Low Concentration of Iron on Magnetic and Structural Properties of Bi2212	1559
<i>N Boussouf, M F Mosbah, F Bouaicha, F Benmaamar, A Amira</i>	
Non Destructive Testing (NDT) with High T_c RF SQUIDS.....	1565
<i>L Bettaieb, H Kokabi, M Poloujadoff, A Sentz, H J Krause</i>	
NbN Nanowire Optical Detectors for High Speed Applications	1571
<i>O Quaranta, S Pagano, M Ejrnaes, C Nappi, E Pessina, F Fontana</i>	
Experimental Characterization of NbN Nanowire Optical Detectors with Parallel Stripline Configuration	1577
<i>A Casaburi, M Ejrnaes, O Quaranta, A Gaggero, F Mattioli, R Leoni, B Voronov, G Goltsman, M Lisitskiy, E Esposito, C Nappi, R Cristiano, S Pagano</i>	

Features of Growth of Non-cubic Bicrystals from the Melt (example of Leucosapphire and Neodymium Gallate)	1583
<i>I M Kotelianskii, V B Kravchenko, V A Luzanov, E N Mirgorodskaya, A T Sobolev</i>	
Growth of $Tl_2Ba_2CaCu_2O_7$ Thin Films on Curved Substrates for Metamaterial Applications.....	1589
<i>S C Speller, T Hao, C J Stevens, D J Edwards, C R M Grovenor</i>	
Optimization of the Coupling of mm Wave Power to Arrays of High-T_c Josephson Junctions	1595
<i>A M Klushin, M He, M Yu Levitchev, V V Kurin, N Klein</i>	
Pulse Driven Josephson Voltage Standard Using Modulated Optical Comb.....	1601
<i>C Urano, N Kaneko, M Maezawa, T Itatani, S Kiryu</i>	
Size Effect on Superconductivity and Magnetism of $MoSr_2YC_{u_2}O_{8-\delta}$.....	1606
<i>J J Cheng, H H Li, S C Liu, J L Huang, Y L Chen, P F Hsu, Z Y Wu, C R Wang, M D Lan</i>	
Design of Power Control System Using SMES and SVC for Fusion Power Plant.....	1612
<i>K Niijima, T Yagai, M Tsuda, T Hamajima</i>	
A New Approach to MgB_2 Superconducting Magnet Fabrication.....	1618
<i>A Miyazoe, H Abe, T Ando, N Hirota, M Sekino, H Wada</i>	
Long-length GdBCO Coated Conductors with IBAD/PLD Method.....	1624
<i>S Hanyu, T Miura, Y Iijima, M Igarashi, Y Hanada, H Fuji, K Kakimoto, T Kato, T Hirayama, T Saitoh</i>	
Liquid Phase Epitaxy of $YBa_2Cu_3O_{7-\delta}$ Film on Single Crystalline MgO and NdGaO₃ Substrate.....	1630
<i>H Nasu, Y Yamada, M Mukaida, S Kubo</i>	
Superconducting Pickup Coils Fabricated on a Glass Epoxy Polyimide Resin Substrate for SQUID Magnetometers.....	1634
<i>J Kawai, T Shimozu, M Kawabata, G Uehara, H Kado</i>	
Numerical Simulations for Signals from MgB_2 Superconducting Detector	1640
<i>M Nishikawa, M Kato, M Machida, T Ishida</i>	
Transmission Electron Microscopy Analysis of C_4H_4S-doped MgB_2 Tapes	1648
<i>N Yuzuriha, H Sosiati, S Hata, N Kuwano, H Yamada, N Uchiyama, A Matsumoto, H Kitaguchi, H Kumakura</i>	
Pulsed Field Magnetization Properties for a Large Single-grain Gd-Ba-Cu-O High-temperature Superconductor Bulk with a Diameter of 140 mm by Using a New Type of Pulsed Copper Split Coil	1654
<i>K Yamaguchi, Y Kimura, M Izumi, S Nariki, N Sakai, I Hirabayashi</i>	
Quench-induced Trapping of Magnetic Flux in Annular Josephson Junctions.....	1660
<i>M Aaroe, R Monaco, R Rivers, V Koshelets, J Mygind</i>	
Narrow Strand YBCO Roebel Cable for Lowered AC Loss.....	1666
<i>N J Long, R Badcock, P Beck, M Mulholl, N Ross, M Staines, H Sun, J Hamilton, R G Buckley</i>	
Multichannel SQUID System for Measurement of Spinal Cord Evoked Magnetic Field for Supine Subjects	1673
<i>Y Adachi, J Kawai, M Miyamoto, G Uehara, H Ogata, S Kawabata</i>	
Position Resolution of a Double Junction Superconductive Detector Based on a Single Material.....	1679
<i>V V Samedov</i>	

A Double-superconducting Axial Bearing System for an Energy Storage Flywheel Model	1684
<i>Z Deng, Q Lin, G Ma, J Zheng, Y Zhang, S Wang, J Wang</i>	
Improved Flux Pinning Behavior in Bulk YBCO Achieved by Nano-alumina Addition	1690
<i>N Moutalibi, A M'chirgui</i>	
Simulation and Electrical Characterization of MgB₂ and YBCO Tapes for Superconducting Fault Current Limiter Prototypes	1696
<i>R Dalessandro, M Bocchi, V Rossi, W Prusseit, G Grasso, L Martini</i>	
Magneto-thermal Finite Element Modeling of 2nd Generation HTS for FCL Design Purposes	1702
<i>F Roy, B Dutoit, F Grilli, F Sirois</i>	
Study of Field-pole Bi2223 Windings of Air Core Type for a HTS Propulsion Motor	1708
<i>D Sugyo, Y Kimura, T Sano, K Yamaguchi, M Izumi, M Miki, K Ohmatsu, Y Fukumoto, H Fujimoto</i>	
Extending the Application of HTS in Particle Accelerators	1714
<i>A Ballarino, K Hubert Meß, T Taylor</i>	
Chemically Processed BaZrO₃ Nanopowders As Artificial Pinning Centres	1720
<i>L Ciontea, G Celentano, A Augieri, T Ristoiu, R Suciu, M S Gabor, A Rufoloni, A Vannozzi, V Galluzzi, T Petrisor</i>	
Research Activities of DC Superconducting Power Transmission Line in Chubu University	1726
<i>S Yamaguchi, M Hamabe, I Yamamoto, T Famakinwa, A Sasaki, A Iiyoshi, J Schultz, J Minervini, T Hoshino, Y Ishiguro, K Kawamura</i>	
Linewidth and DC Properties of the Flux-flow Oscillator with Mixed Inline-overlap Bias	1733
<i>A S Sobolev, J Mygind, V P Koshelets</i>	
Trapped Field Measurements of Gd-Ba-Cu-O Bulk Superconductor in Controlled Pulse Field Magnetizing	1739
<i>T Ida, Y Kimura, T Sano, K Yamaguchi, M Izumi, M Miki</i>	
Conceptual Design of an SFCL by Use of BSCCO Wire	1744
<i>K Suzuki, J Baba, T Nitta</i>	
High-temperature Superconducting Magnet for Use in Saturated Core FCL	1750
<i>Z Bar-Haim, A Friedman, Y Wolfus, V Rozenshtein, F Kopansky, Z Ron, E Harel, N Pundak, Y Yeshurun</i>	
PrBa₂Cu₃O_{7-x} As an Insulating Layer for YBCO Multilayer Coated Conductors	1756
<i>J L Tanner, P J Hirst, E F Maher, T W Button, J S Abell</i>	
Local Measurements of the Magnetization Process of Bulk Superconductors Induced by a Pulsed Magnetic Field	1766
<i>H Ikuta, M Tokuyama, Y Yanagi</i>	
AC Application of Second Generation HTS Wire	1773
<i>C L H Thieme, K Gagnon, J Voccio, D Aized, J Claassen</i>	

Materials Processing, Pulsed Field Magnetization and Field-pole Application to Propulsion Motors on Gd123 Bulk Superconductors	1779
<i>M Izumi, C Xu, A Hu, M Ichihara, Y Xu, E Morita, Y Kimura, M Murakami, N Sakai, I Hirabayashi, H Sugimoto, M Miki</i>	
Depinning and Vortex-glass-like Transition in Nb with Uncorrelated Disorder	1785
<i>A A M Oliveira, P N Lisboa-Filho, W A Ortiz</i>	
Frustrated Magnetic Response of a Superconducting Nb Film with a Square Lattice of Columnar Defects	1790
<i>R Zadorosny, C M Lepienski, E Patiño, M G Blamire, W A Ortiz</i>	
Metal Propionate Synthesis of Epitaxial $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ Films.....	1795
<i>L Ciontea, A Angrisani, G Celentano, T Petrisor jr, A Rufoloni, A Vannozzi, A Augieri, V Galuzzi, A Mancini, T Petrisor</i>	
Model of a Long Josephson Tunnel Junction Including Surface Losses and Self-pumping Effect.....	1801
<i>A L Pankratov, A S Sobolev, V P Koshelets, J Mygind</i>	
Quench Characteristics of Ag/AuBi2223 HTS-stainless Steel Stack Used for the Hybrid Current Leads of the Large Hadron Collider	1808
<i>M K Al-Mosawi, S Avgeros, C Beduz, Y Yang, A Ballarino</i>	
Verification of Metal Layer Design for Large-capacity Superconducting Fault Current Limiting Elements Using YBCO Thin Film	1814
<i>H Ohsaki, Y Ichiki, M Sekino</i>	
Variable-temperature Characterization of NbTi Strands in the Low Critical-current Density Range	1820
<i>L Affinito, S Chiarelli, V Corato, A della Corte, G De Marzi, A Di Zenobio, C Fiamozzi Zignani, G Messina, L Muzzi, M Napolitano, S Turtù</i>	
New Advanced Generation of Superconducting NbN-nanowire Single-photon Detectors Capable of Photon Number Resolving.....	1826
<i>A Korneev, A Divochiy, M Tarkhov, O Minaeva, V Seleznev, N Kaurova, B Voronov, O Okunev, G Chulkova, I Milostnaya, K Smirnov, G Gol'tsman</i>	
Short Circuit Experiment on an FCL Coil Wound with YBCO Tape with a High-resistance Stabilizing Layer.....	1832
<i>T Yazawa, K Koyanagi, M Ono, M Urata, Y Iijima, T Saito, N Amemiya, Y Shiohara</i>	
Coil in Coil – Components for the High Voltage Superconducting Resistive Current Limiter CULT 110	1837
<i>S Elschner, M Stemmle, F Breuer, H Walter, C Frohne, M Noe, J Bock</i>	
An Array of Cold-electron Bolometers with SIN Tunnel Junctions and JFET Readout for Cosmology Instruments.....	1843
<i>L Kuzmin</i>	
HTS Toroidal Helical Transformer.....	1849
<i>B Grzesik, T Janowski, M Stepien</i>	
New Shape of Superconducting Coil with Improved Critical Current – Design and FEM Analysis Results.....	1855
<i>B Grzesik, M Stepien</i>	
Partial Melt Processing of High-T_c Bulk Bi-2212 Starting from Different Precursor Powders	1860
<i>A Polasek, C V de Sena, E T Serra, F Rizzo</i>	

Identification of Factors Limiting the Critical Current Density in MgB_{2-x}C_x Superconductors at Low Magnetic Fields.....	1866
<i>O V Shcherbakova, A V Pan, J L Wang, A V Shcherbakov, S X Dou, D Wexler</i>	
In-Situ Synchrotron X-ray Study of MgB₂ Formation When Doped by SiC.....	1872
<i>A B Abrahamsen, J-C Grivel, N H Andersen, M Herrmann, W Häßler, B Birajdar, O Eibl, K SaksI</i>	
AC Loss Properties of Cu-sheathed MgB₂ Composites with Nb Barriers.....	1878
<i>K Funaki, T Sueyoshi, K Kajikawa, M Iwakuma, K Tanaka, M Okada, H Kumakura, H Hayashi</i>	
Time-resolved Optical Characterization of Proximized Nano-bilayers for Ultrafast Photodetector Applications	1884
<i>L Parlato, G P Pepe, D Pan, C De Lisio, V Pagliarulo, A Cosentino, N Marrocco, D Dalena, G Peluso, A Barone, R Sobolewski</i>	
Superconducting Transformers: Key Design Aspects for Power Applications.....	1890
<i>A Morandi, L Trevisani, P L Ribani, M Fabbri, L Martini, M Bocchi</i>	
Numerical Simulations of a Flux Qubit Coupled to a High Quality Resonator.....	1899
<i>T Lindström, C H Webster, J E Healey, M S Colclough, C M Muirhead, A Ya Tzalenchuk</i>	
Optimization of SQUID Magnetometers and Gradiometers for Magnetic-field-fluctuation Thermometers.....	1905
<i>A Kirste, D Drung, J Beyer, T Schurig</i>	
Study of Reliability of the HTS Tapes in Electrical Circuit at 77 K	1912
<i>E I Demikhov, G N Mikhailova, V P Aksenen, L H Antonova, L D Iskhakova, L N Zherikhina, E A Kostrov, S V Lavrishchev, V S Mikhailov, A V Troitskii, A M Tshovrebov</i>	
Setting Method of Parameters for SN Transition Fault Current Limiter Into 6.6kV Distribution System	1917
<i>H Kameda (Crieipi), S Torii(Crieipi)</i>	
Magnetoresistance Studies of Ti-1223 Phase Substituted by Scandium	1925
<i>R Awad, I H Ibrahim, E M E Mansour, M Roumieu, A Zein</i>	
Numerical Analysis for AC Losses in Single-layer Cables Composed of Rectangular Superconducting Strips with Various Lateral J_c Distributions	1932
<i>R Inada, Y Nakamura, A Oota</i>	
Simulating the Effect of SFCL on Limiting the Internal Fault of Synchronous Machine.....	1938
<i>I Kheirizad, M H Varahram, M R Jahed-Motlagh, M Rahnema, A Mohammadi</i>	
Mobile Fluxon Qubits in a Long Superconductor-ferromagnet-superconductor Josephson Junction	1945
<i>M Nishida, T Fujii, N Hatakenaka</i>	
Radiation Damaged MgB₂: a Comparison with A15 Superconductors	1951
<i>M Putti, R Vaglio, J Rowell</i>	
Vortex Pinning Phase Diagram for Various Kinds of C-axis Correlated Disorders in RE123 Films.....	1957
<i>S Awaji, M Namba, K Watanabe, T Nojima, S Okayasu, T Horide, P Mele, K Matsumoto, M Miura, Y Ichino, Y Yoshida, Y Takai, E Kampert, U Zeitler, J Perenboom</i>	
Superconducting NbN Nanowire Photo Switches for Generating Single Flux Quantum Pulses.....	1963
<i>H Myoren, Y Mada, Y Matsui, T Taino, S Takada</i>	
High Resolution Magnetic Imaging: MicroSQUID Force Microscopy.....	1969
<i>K Hasselbach, C Ladam, V O Dolocan, D Hykel, T Crozes, K Schuster, D Mailly</i>	

An SIS-based Sideband-separating Heterodyne Mixer Optimized for the 600 to 720 GHz Band	1975
<i>F P Mena, J W Kooi, A M Baryshev, C F J Lodewijk, R Hesper, W Wild, T M Klapwijk</i>	
Nonlinear Buffer Layers Relevant for Reduced Nonlinear Effects in HTS Microwave Devices	1982
<i>D Seron</i>	
Assessment of Liquid Hydrogen Cooled MgB₂ Conductors for Magnetically Confined Fusion	1987
<i>B A Glowacki, W J Nuttall</i>	
Effect of Transparency on the Josephson Junction Between D-wave Superconductors	1993
<i>G Rashedi</i>	
Physical-mechanical Properties of ErBaCuO Superconductors Doped with Gold and Gallium.....	1999
<i>E E Sanaia, E R Kutelia, G Sh Darsavelidze</i>	
Installation of Pulse Tube Cryocoolers for Cooling of HTS Cable	2005
<i>M C Johnson, T D Abbott, K B Albaugh, S A Potratz</i>	

Author Index