

MU
1-68/4m

IEEE TRANSACTIONS ON MAGNETICS

A PUBLICATION OF THE IEEE MAGNETICS SOCIETY

APRIL 2014

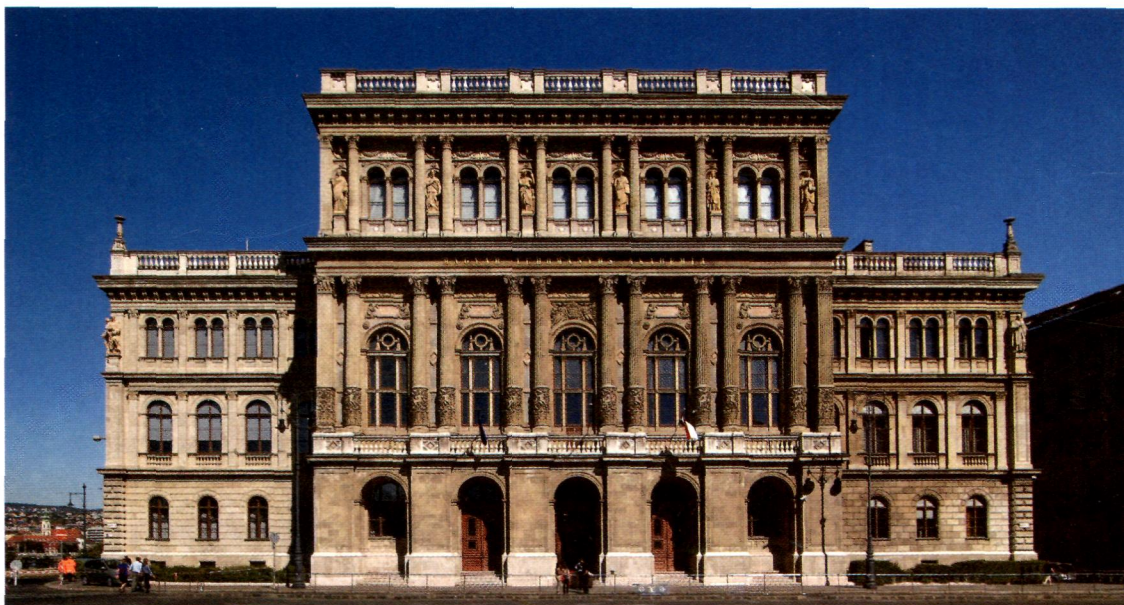
VOLUME 50

NUMBER 4

IEMGAQ

(ISSN 0018-9464)

PART I OF TWO PARTS



SELECTED PAPERS FROM THE 21st SOFT MAGNETIC MATERIALS
CONFERENCE (SMM 21)

Budapest, Hungary, September 1-4, 2013

IEEE TRANSACTIONS ON MAGNETICS

A PUBLICATION OF THE IEEE MAGNETICS SOCIETY

APRIL 2014

VOLUME 50

NUMBER 4

IEMGAQ

(ISSN 0018-9464)

PART I OF TWO PARTS

**SELECTED PAPERS FROM THE 21st SOFT MAGNETIC MATERIALS CONFERENCE (SMM 21)
Budapest, Hungary, September 1-4, 2013**

- 0300801 **Soft Magnetic Materials 21 Conference Chair's Foreword**
L. K. Varga
- 0300902 **Soft Magnetic Materials 21 Publication Chair's Preface**
O. Bottauscio
- 0301001 **Soft Magnetic Materials 21 Conference**
- 0500101 **In Memoriam – Pierre Brissonneau**
A. Kedous-Lebouc
-

Magnetic Materials

- 2001404 **Modelization of Superferromagnetism in Soft Nanocrystalline Materials Based on an Accurate Description of Magnetostatic Interactions**
O. Geoffroy, H. Chazal, Y. Yao, T. Waeckerlé, and J. Roudet
- 2001504 **Hysteresis and Magnetic Barkhausen Noise for SAE 1020 and 1045 Steels With Different Microstructures**
L. F. T. Costa, M. F. de Campos, G. J. L. Gerhardt, and F. P. Missell
- 2001604 **Equivalent Stress Model for Magnetic Hysteresis Losses Under Biaxial Loading**
M. Rekik, L. Daniel, and O. Hubert
- 2001704 **Sharp Increase of Hysteresis Area Due to Small Plastic Deformation Studied With Magnetic Barkhausen Noise**
P. P. de C. Antonio, M. F. de Campos, F. M. da S. Dias, M. A. Campos, J. Capo-Sanchez, and L. R. Padovese
- 2001804 **Analysis of Microstructural Changes in Soft Magnetic Materials Based on Direct Evaluation of Magnetization Process Dynamics**
E. Ušák and M. Ušáková
- 2001904 **Laser Cutting and Mechanical Cutting of Electrical Steels and its Effect on the Magnetic Properties**
R. Siebert, J. Schneider, and E. Beyer
- 2002004 **Study of Microstructure and Texture Evolution in Grain-Oriented Steels Via Coercivity Measurements**
I. Petryshynets, F. Kovac, M. Sopko, J. Marcin, and B. Petrov
-

Федеральное государственное
бюджетное учреждение науки
Центральная научная библиотека
Уральского отделения
Российской академии наук (ЦНБ УрО РАН)



-
- 2002104 **Magnetic Properties Evaluation of Grain-Oriented Electrical Steel Sheets Under Bending Stress**
H. Hagihara, Y. Takahashi, K. Fujiwara, Y. Ishihara, and T. Masuda
- 2002204 **The Effect of Recovery Annealing on the Magnetic and Mechanical Properties of Nonoriented Electrical Steels**
D. L. Rodrigues, Jr., T. S. P. Nishikawa, A. A. Almeida, F. J. G. Landgraf, and R. V. Martin
- 2002304 **Effect of Si Content on Iron Loss of Electrical Steel Sheet Under Compressive Stress**
Y. Oda, H. Toda, N. Shiga, S. Kasai, and T. Hiratani
- 2002404 **Effect of Laser Stress on Vector Magnetic Properties of Electrical Steel Sheets**
T. Kajiwara and M. Enokizono
- 2002505 **High Magnetic Moment of FeCo Nanoparticles Produced in Polyol Medium**
K. Zehani, R. Bez, J. Moscovici, F. Mazaleyrat, N. Mliki, and L. Bessais
- 2002606 **Fully Processed Fe-Co Soft Magnetic Laminations for High-Speed Electrical Machines**
T. Waeckerlé, R. Batonnet, T. Wéry, and F. Petit
- 2002704 **Glass-Forming Ability and Magnetic Properties of $(\text{Fe}_{0.80}\text{Co}_{0.20})_{96-x}\text{B}_x\text{Si}_1\text{Nb}_{3-y}\text{Y}_y$ ($x = 15, 17$) Amorphous Alloys**
T. Bitoh and S. Kikuchi
- 2002804 **Influence of Tensile Stress on the Surface Magneto-Optical Hysteresis Loops in Amorphous and (Nano)Crystalline Ribbons**
O. Životský and A. Hendrych
- 2002904 **Magnetic and Surface Properties of High-Induction Nanocrystalline Fe-Nb-Cu-B/P-Si Ribbons**
B. Butvinová, P. Butvin, I. Mat'ko, P. Švec, Sr., M. Chromčíková, J. Sitek, and J. Dekan
- 2003004 **Effects of Cobalt Addition in Nanocrystalline $\text{Fe}_{83.3}\text{Si}_4\text{B}_8\text{P}_4\text{Cu}_{0.7}$ Soft Magnetic Alloy**
Y. Zhang, P. Sharma, and A. Makino
- 2003104 **Dependence of Soft Magnetic Properties of $\text{Fe}_{81-85.5}\text{Si}_2\text{B}_{10}\text{P}_{1.5-6}\text{Cu}_1$ Alloys on P Content**
Z. Dan, Y. Yamada, and A. Makino
- 2003203 **Magnetostrictive Iron-Based Bulk Metallic Glasses for Force Sensors**
J. Ferenc, M. Kowalczyk, G. Cieślak, and T. Kulik
- 2003304 **Role of P in Nanocrystallization of $\text{Fe}_{85}\text{Si}_2\text{B}_8\text{P}_4\text{Cu}_1$**
M. Matsuura, Y. Zhang, M. Nishijima, and A. Makino
- 2003404 **Magnetic Properties of $\text{Fe}_{56.7}\text{Ni}_{10}\text{Si}_{33.3}$**
R. Groessinger, M. Antoni, S. Sorta, M. Palm, J. C. Schuster, and K. Hiebl
- 2003504 **Microstructure and Magnetic Entropy Change in Amorphous $\text{Fe}_{76}\text{Mo}_{10}\text{Cu}_1\text{B}_{13}$ Alloy**
J. Świerczek and M. Hasiak
- 2003604 **Statistical Study of Nanocrystalline Alloy Cut Cores From Two Different Manufacturers**
F. Sixdenier, J. Morand, O. A. Salvado, and D. Bergogne
- 2003704 **Structural and Magnetic Study of $\text{Fe}_{76}\text{Si}_9\text{B}_{10}\text{P}_5$ Metallic Glass by First Principle Simulation**
Y. Wang, Y. Zhang, A. Makino, Y. Liang, and Y. Kawazoe
- 2003804 **Optimization of Mechanical and Magnetic Properties in High, Electroplated Co-Fe-Flux Guides**
R. Kruppe, A. Wienecke, and L. Rissing
- 2003904 **Tailoring the Exchange Bias in FeNi/FeMn Bilayers by Heat Treatment and FeMn Surface Oxidation**
A. Svalov, P. Savin, V. Lepalovskij, A. Larrañaga, V. Vas'kovskiy, A. García-Arribas, and G. Kurlyandskaya
- 2004004 **X-Ray Absorption Studies of $\text{Fe}_{85}\text{Si}_2\text{B}_8\text{P}_4\text{Cu}_1$ Alloy**
M. Nishijima, M. Matsuura, Y. Zhang, K. Takenaka, and A. Makino
- 2004104 **Impact of Microstructure Upon Soft Magnetic Properties of Cobalt-Doped Metallic Glasses**
M. Hasiak, M. Miglierini, M. Łukiewski, and J. Kaleta
- 2004203 **Homogeneity of Magnetic Properties Within a Single Soft Magnetic Core, Especially in Huge Cores**
Z. Halász, E. Csizmadia, Z. Palánki, and F. Záborszky
-

-
- 2004304 **Soft Magnetic Powder Composites and Potential Applications in Modern Electric Machines and Devices**
A. Schoppa and P. Delarbre
- 2004404 **Low Loss Magnetic Thin Films for Off-Line Power Conversion**
S. Kulkarni, D. Li, N. Wang, S. Roy, C. Ó Mathúna, G. Young, and P. McCloskey
- 2004504 **Contact and Magnetoresistance Measurement of a Single NiFe/Cu Multilayer Nanowire Within a Template Nanowire Array**
H. Chiriac, O.-G. Dragos, G. Stoian, M. Grigoras, and N. Lupu
- 2004604 **Antiferromagnetism and Low Magnetostriction in $\text{Fe}_{100-x}\text{Mn}_x$ ($x = 38, 42, 46, 50, \text{ and } 55$) Alloys**
R. Sato-Turtelli, C. Bormio-Nunes, K. T. Tiguman, D. Geist, A. Panigrahi, C. Grijalva, S. Sorta, R. Grössinger, and M. Zehetbauer
- 2004704 **Effect of Metalloid Elements on the Structures and Soft Magnetic Properties in $\text{Fe}_{85.2}\text{Si}_x\text{B}_{14-x-y}\text{P}_y\text{Cu}_{0.8}$ Alloys**
K. Takenaka, M. Nishijima, and A. Makino
- 2004804 **Application of Rapidly Quenched Soft Magnetic Materials in Energy-Saving Electric Equipment**
R. Kolano, A. Kolano-Burian, M. Polak, and J. Szyński
- 2301204 **Wideband Ferromagnetic Resonance in Nanostructured Arrays**
V. Raposo, M. Zazo, A. G. Flores, M. Sánchez, J. I. Iñiguez, J. M. Muñoz, P. Hernández, C. Torres, C. Redondo, and D. Navas
- 2501104 **Equivalence of Magnetic Metamaterials and Composites in the View of Effective Medium Theories**
Z. Szabó and J. Füzi
- 2501203 **Structural and Magnetic Properties of Melt-Spun Ni-Mn(Fe)-Ga Ferromagnetic Shape Memory Ribbons**
V. V. Khovaylo, V. V. Koledov, D. I. Kuchin, V. G. Shavrov, N. N. Resnina, H. Miki, J. J. Suñol, and B. Hernando
- 2501304 **Magnetic Properties of Bilayer Ferromagnetic Shape Memory Ribbons**
N. Sakoh, T. Todaka, and M. Enokizono
- 2501404 **Magneto-Optical Study of the Surface Reversal Process in Amorphous Glass-Coated Microwires With Positive Magnetostriction**
K. Richter, A. Thiaville, and R. Varga
- 2501504 **Second-Order Phase Transition and the Magnetocaloric Effect in $\text{La}_{0.7}\text{Ca}_{0.3-x}\text{Sr}_x\text{MnO}_3$ Nanoparticles**
T. D. Thanh, T. L. Phan, N. Van Chien, D. H. Manh, and S. C. Yu
- 2501604 **Magnetocaloric Effect and Critical Behavior of $\text{Ni}_{42}\text{Ag}_8\text{Mn}_{37}\text{Sn}_{13}$ Alloys**
T. D. Thanh, T. L. Phan, P. T. Thanh, N. H. Yen, N. H. Dan, and S. C. Yu
- 2501704 **Influence of A-Site Deficiency on Magnetocaloric Effect in Nonstoichiometric $(\text{La}_{0.8}\text{Ca}_{0.2})_{0.975}\text{MnO}_{3.01}$**
D. Nanto, S.-C. Yu, S.-K. Oh, N. Chebotaev, and A. Telegin
- 2800106 **Magnetic Properties of Nanostructured Spinel Ferrites**
B. Cruz-Franco, T. Gaudisson, S. Ammar, A. M. Bolarín-Miró, F. S. de Jesús, F. Mazaleyrat, S. Nowak, G. Vázquez-Victorio, R. Ortega-Zempoalteca, and R. Valenzuela
- 2800204 **Influence of the Synthesis Method of Filler on Permeability and Microwave Absorption Properties of Ferrite/Polymer Composites**
R. Dosoudil, M. Ušáková, A. Grusková, and J. Sláma
- 2800304 **Magnetic Properties Analysis of Rare-Earth Substituted Nickel Zinc Ferrites**
M. Šoka, M. Ušáková, E. Ušák, R. Dosoudil, and J. Lokaj
- 2800404 **Multicomponent Magnetic Particles With Controllable Electromagnetic Properties**
V. Babayan, N. E. Kazantseva, I. Y. Sapurina, R. Moučka, J. Vilčáková, and I. Kuřitka
- 2800504 **Magnetic Property of Iron-Dust Cores With Mixture of Ferromagnetic Ferrite Powder and Alumina Powder**
K. Kabeya, S. Yanase, Y. Okazaki, and K. Yun
-

-
- 2800604 **Structural and Magnetic Characteristics of Composite Compacts of Fe/Fe₃O₄ Type Obtained by Sintering**
T. F. Marinca, B. V. Neamțu, I. Chicinaș, and O. Isnard
- 2800704 **Synthesis, Structural, and Magnetic Properties of Nanocrystalline/Nanosized Manganese-Nickel Ferrite–Mn_{0.5}Ni_{0.5}Fe₂O₄**
I. Chicinaș, T. F. Marinca, B. V. Neamțu, F. Popa, O. Isnard, and V. Pop
- 2800804 **Structural, Dielectric, and Magnetic Properties of NiZnCu Ferrites Synthesized by Reactive Spark Plasma Sintering Process**
K. Zehani, B. Ahmadi, V. Loyau, Y. Champion, L. Bessais, M. LoBue, E. Labouré, and F. Mazaleyrat
- 2900104 **Influence of the Change in Oxidation Number of Mn on Magnetic Properties of BaTi_{1-x}Mn_xO₃**
T. L. Phan, T. D. Thanh, T. A. Ho, P. D. Thang, and S. C. Yu

Magnetic Recording and Information Storage Devices

- 3201404 **Potential of Metallic Glass Thin Films as a Soft Magnetic Underlayer for L1₀ FePt-Based Recording Media**
N. Kaushik, P. Sharma, A. Makino, S. Tanaka, and M. Esashi

Applied Magnetism and Phenomena

- 4003904 **Stress-Induced Anisotropy in Electroplated FeNi Racetrack Fluxgate Cores**
M. Butta and L. Kraus
- 4004005 **A New Class of Materials for Magneto-Optical Applications: Transparent Amorphous Thin Films of Fe–B–Nb and Fe–B–Nb–Y Metallic Glassy Alloys**
A. Masood, T. Tamaki, V. Ström, A. Borgenstam, J. Ågren, and K. V. Rao
- 4004104 **Performance Analysis of a Planar Displacement Sensor With Inductive Spiral Coils**
S. M. Djuric
- 4004204 **Influence Factors Analysis and Improvement Method on Efficiency of Wireless Power Transfer Via Coupled Magnetic Resonance**
Z. Yan, Y. Li, C. Zhang, and Q. Yang

Magnetic Measurements and Instrumentation

- 6000104 **A Static Measurement System for Soft Magnetic Materials**
R. V. Martin and E. A. Périgo
- 6000204 **Static Sample Magnetometer: A New Characterization Method for Low Permeability Materials and Ferrofluids**
M. Petit, A. Kedous-Lebouc, Y. Avenas, W. Cherief, E. Rullière, and B. Anceau
- 6100104 **Influence of Magnetizing and Filtering Frequencies on Barkhausen Noise Response**
O. Stupakov and Y. Melikhov
- 6100204 **Influence of Biaxial Stress on Vector Magnetic Properties and 2-D Magnetostriction of a Nonoriented Electrical Steel Sheet Under Alternating Magnetic Flux Conditions**
Y. Kai, Y. Tsuchida, T. Todaka, and M. Enokizono
- 6100304 **Impact of Tensile and Compressive Stress on Classical and Acoustic Barkhausen Effects in Grain-Oriented Electrical Steel**
B. Augustyński, L. Piotrowski, P. Jasnoch, and M. Chmielewski
- 6100404 **Vector Magnetic Properties and 2-D Magnetostriction of Various Electrical Steel Sheets Under Rotating Flux Condition**
M. Yamagashira, D. Wakabayashi, and M. Enokizono
- 6100504 **On the Measurement of Permeability and Magnetostriction in Ribbons and Wires**
A. Ktena, C. Manassis, and E. Hristoforou
- 6100604 **Standard Measurement Method for Magnetic Properties of Fe-Based Amorphous Magnetic Materials**
H. Hagihara, M. Tanaka, Y. Takahashi, K. Fujiwara, and Y. Ishihara
- 6200104 **Effect of Neutron Flux on Magnetic Hysteresis in Neutron-Irradiated Pressure Vessel Steels**
S. Kobayashi, T. Yamamoto, D. Klingensmith, G. R. Odette, H. Kikuchi, and Y. Kamada
-

-
- 6200204 **Residual Stress Analysis in Nonoriented Electrical Steel Sheets by Barkhausen Noise Measurements**
P. Vourna, A. Ktena, and E. Hristoforou
- 6200304 **Influence of Punching and Tool Wear on the Magnetic Properties of Nonoriented Electrical Steel**
H. M. S. Harstick, M. Ritter, and W. Riehemann
- 6200404 **Flake Graphite Cast Iron Investigated by a Magnetic Method**
G. Vértesy, T. Uchimoto, T. Takagi, and I. Tomáš
- 6300404 **Excess Loss Localization on the Hysteresis Curve**
A. A. Almeida, L. S. Perassa, D. L. Rodrigues, Jr., T. S. P. Nishikawa, F. J. G. Landgraf, S. C. Paolinelli, and R. V. Martins
- 6300504 **Broadband Magnetic Losses in Fe-Si and Fe-Co Laminations**
C. Beatrice, C. Appino, O. de la Barrière, F. Fiorillo, and C. Ragusa
- 6300604 **Electrical and Calorimetric Power Loss Measurements of Practically Ideal Soft Magnetic Cores**
F. Zámorszky, D. Tóth, Z. Palánki, and E. Csizmadia
- 6300704 **Reduction of Power Losses in the Tape-Wound FeNiCuNbSiB Nanocrystalline Cores Using Interlaminar Insulation**
J. Szynowski, R. Kolano, A. Kolano-Burian, and M. Polak
- 6300804 **Comparison of Iron Loss Characteristics of Divided Cores Considering Vector Magnetic Properties**
D. Yokoyama, T. Sato, T. Todaka, and M. Enokizono

Computation and Numerical Methods

- 7026504 **FEM Simulations of Incremental Permeability Signals of a Multi-layer Steel With Consideration of the Hysteretic Behavior of Each Layer**
Y. Gabi, B. Wolter, A. Gerbershagen, M. Ewen, P. Braun, and O. Martins
- 7026604 **Magnetic Components Dynamic Modeling With Thermal Coupling for Circuit Simulators**
A. Hilal, M. A. Raulet, and C. Martin
- 7100104 **Micromagnetic Modeling of Magneto-Mechanical Behavior**
F. S. Mballa-Mballa, O. Hubert, S. He, S. Depeyre, and P. Meiland
- 7100204 **Modeling of Anisotropic Magnetoresistance Properties of Permalloy Nanostructures**
A. Manzin, V. Nabaei, H. Corte-León, O. Kazakova, P. Krzysteczko, and H. W. Schumacher
- 7300104 **Phenomenological Hysteresis Modeling Based on Asymmetric Transition Probability of Magnetization**
C. Lee, K. Miyata, C. Kaido, and T. Matsuo
- 7300204 **Dynamic Magnetization Model of Nonoriented Steel Sheets**
S. Steentjes, S. E. Zirka, Y. E. Moroz, E. Y. Moroz, and K. Hameyer
- 7300304 **A Parametric Magneto-Dynamic Model of Soft Magnetic Steel Sheets**
M. Petrun, V. Podlogar, S. Steentjes, K. Hameyer, and D. Dolinar
- 7300404 **Usage of a Simplified and Jiles–Atherton Model When Accounting for the Hysteresis Losses Within a Welding Transformer**
K. Deželak, M. Petrun, B. Klopčič, D. Dolinar, and G. Štumberger
- 7400104 **Influence of Plastic Deformation on Stray Magnetic Field Distribution of Soft Magnetic Steel Sample**
Z. Usarek, B. Augustyniak, M. Augustyniak, and M. Chmielewski

Electromagnetism and Electromagnetic Devices

- 8000404 **Large DC Electromagnet for Semi-Industrial Thermomagnetic Processing of Nanocrystalline Ribbon**
A. Kozłowski, R. Rygał, and S. Zurek
- 8000504 **The Influence of Magnetic Material Degradation on the Optimal Design Parameters of Electromagnetic Devices**
A. A. Abdallh and L. Dupré
-

-
- 8000604 **Selection of Magnetic Materials for Bearingless High-Speed Mobile Flywheel Energy Storage Systems**
M. N. Recheis, B. Schweighofer, P. Fulmek, and H. Wegleiter
- 8100404 **Influence of Winding Scheme on the Iron-Loss Distribution in Permanent Magnet Synchronous Machines**
G. von Pfingsten, S. Steentjes, M. Hombitzer, D. Franck, and K. Hameyer
- 8100504 **Novel Stator Design of Double Salient Permanent Magnet Motor**
W.-H. Tai, M.-C. Tsai, Z.-L. Gaing, P.-W. Huang, and Y.-S. Hsu
- 8200704 **Role of Magnetic Materials in a Novel Electrical Motogenerator for the More Electric Aircraft**
O. Bottauscio, G. Serra, M. Zucca, and M. Chiampi
- 8400204 **Control of Rotating Magnetic Flux Distribution in a Transformer Model Core by Laser Irradiation**
K. Ooka, T. Kajiwara, S. Aihara, and M. Enokizono
- 8400304 **Determining the Parameters of a Resistance Spot Welding Transformer Using Differential Evolution**
M. Petrun, K. Deželak, D. Dolinar, and G. Štumberger
- 8400404 **Optimization of Resistance Spot Welding Transformer Windings Using Analytical Successive Approximation and Differential Evolution**
J. P. Cukovic, B. Klopčič, M. Petrun, B. Polajžer, and D. Dolinar
- 8400504 **AC/DC Current Transformer with Single Winding**
P. Ripka, K. Draxler, and R. Styblikova
- 8400604 **Automatic 3-D Building Factor Analyses of a Grain-Oriented Model Transformer Core**
H. Pfützner, G. Shilyashki, P. Hamberger, M. Aigner, F. Hofbauer, M. Palkovits, G. Trenner, E. Gerstbauer, I. Matkovic, and V. Galabov
- 8500104 **Enhancing Shielding Efficiency of Separate Shell Magnetic Shield Using Two Independent Controllers**
A. U. Mahgoub and I. Sasada
-
- 9900403 **CONFERENCE AUTHOR INDEX**
-