

IEEE TRANSACTIONS ON MAGNETICS

A PUBLICATION OF THE IEEE MAGNETICS SOCIETY

AUGUST 2013

VOLUME 49

NUMBER 8

IEMGAQ

(ISSN 0018-9464)

PART I OF TWO PARTS

SELECTED PAPERS FROM THE X LATIN AMERICAN WORKSHOP ON MAGNETISM, MAGNETIC MATERIALS AND THEIR APPLICATIONS (X-LAW3M 2013)

Buenos Aires, Argentina, April 8–12, 2013

- 4486 **X-LAW3M—Publication Chair Preface**
C. G.-P. Gómez-Polo and A. Butera

- 4488 **X-LAW3M—Conference Chair Preface**
L. B. Steren

- 4489 **X-LAW3M 2013 Conference Organization**
-

PAPERS

- 4491 **Structural Dependence of Magnetic Properties in Co-Based Nanowires: Experiments and Micromagnetic Simulations**
C. Bran, Yu. P. Ivanov, D. G. Trabada, J. Tomkowicz, R. P. del Real, O. Chubykalo-Fesenko, and M. Vazquez

- 4498 **Hysteresis Properties of Hexagonal Arrays of FePd Nanowires**
M. S. Viqueira, S. E. García, S. E. Urreta, G. P. López, and L. M. Fabetti

- 4502 **Synthesis and Characterization of Iron Oxyhydroxide Nanowires**
C. L. Londoño-Calderón, V. Bilovol, C. Cosio-Castañeda, L. G. Pampillo, S. R. Micheli, K. R. Pirota, L. M. Socolovsky, and R. Martínez-García

- 4506 **Evidence of Coexistence of Ferromagnetic and Antiferromagnetic Phases in Nearly Equiatomic FeRh**
H. Kumar, M. C. A. Fantini, and D. R. Cornejo

- 4510 **Spin Polarized Electronic Transport in the Heusler Compound Pd₂MnSn**
F. M. da Rosa and P. Pureur
-

(Contents Continued on Page 4482)



- 4514 **Curie Temperature and Hopkinson Effect in Twin Roller Melt Spun Ni₂MnGa Shape Memory Alloys**
G. Pozo López, L. M. Fabietti, A. M. Condó, E. Winkler, R. N. Giordano, N. Haberkorn, and S. E. Urreta
- 4518 **Magnetic Behavior of Twin Roller Melt Spun Cu₉₀Co₁₀ Alloys**
H. N. Coavas, G. P. López, L. M. Fabietti, A. M. Condó, and S. E. Urreta
- 4522 **Synthesis of Magnetic CuNi Nanoalloys by Sol-Gel-Based Pechini Method**
E. L. de León-Quiroz, D. V. Obregón, A. P. Pedraza, M. José-Yacaman, and L. A. García-Cerda
- 4525 **Magnetic Anisotropy of Epitaxially Grown Fe/Mn/Co Trilayers**
M. S. Pessoa, F. Pelegrini, T. C. de Freitas, E. C. Passamani, S. Couet, K. Temst, and A. Vantomme
- 4530 **Exchange Anisotropy and Antiferromagnetic Coupling in NiFe/FeMn/Co Trilayers**
P. G. Barreto, M. A. Sousa, F. Pelegrini, W. Alayo, and E. Baggio-Saitovitch
- 4534 **Magnetization and AC Susceptibility Study of Nb/Ni/Nb Thin Films**
J. P. Badilla, E. R. de Lascio, and D. R. Cornejo
- 4538 **Magnetic Order in NbS₂ Nanoribbons**
F. Güller, V. Vildosola, and A. M. Llois
- 4542 **Structural and Magnetic Properties of Multilayered TiO₂/FM/TiO₂/FM/CoFe₂O₄ (FM: Fe or Py) Films Grown by Pulsed Laser Deposition**
F. D. Saccone, P. Vavassori, and A. Berger
- 4547 **Synthesis and Characterization of Carbon-Coated Magnetite for Functionalized Ferrofluids**
M. Arana, S. E. Jacobo, H. Troiani, and P. G. Bercoff
- 4551 **The Effect of Coated-Fe₃O₄ Nanoparticles on Magnetic Properties of Ferrogels Produced by Diffusion Route**
O. Moscoso-Londoño, D. Muraca, L. A. S. de Oliveira, K. R. Piota, and L. M. Socolovsky
- 4555 **Magnetic Properties of γ – Fe₂O₃ Nanoparticles at the Verge of Nucleation Process**
O. Moscoso-Londoño, M. S. Carriao, C. Cosio-Castañeda, V. Bilovol, R. Cohen, L. C. C. M. Nagamine, R. Martinez-Sánchez, E. J. Lede, R. Martinez-Garcia, and L. M. Socolovsky
- 4559 **Magnetic Properties of Zn-Ferrites Obtained From Multilayer Film Deposited by Sputtering**
K. L. Salcedo Rodríguez, F. Golmar, and C. E. Rodríguez Torres
- 4562 **Enhanced Magnetic Properties of Zn Substituted Mg Ferrite**
G. F. Barbosa, F. L. A. Machado, A. R. Rodrigues, M. S. Silva, and A. Franco, Jr.
- 4565 **Magnetization Properties Study of ZnCr₂O₄ Spinel Normal**
T. T. Gurgel, N. O. Moreno, and J. M. Soares

- 4568 **Structural, Magnetic, and Optical Characterization of MnFe₂O₄ Nanoparticles Synthesized Via Sol-Gel Method**
P. Rivas, V. Sagredo, F. Rossi, C. Pernechele, M. Solzi, and O. Peña
- 4572 **Spatial Resolution in Micrometric Periodic Assemblies of Magnetotactic Bacteria and Magnetic Nanoparticles**
A. J. Moreno, E. Gonzalez, M. Godoy, J. Pettinari, P. S. Antonel, G. Jorge, and V. Bekeris
- 4576 **Influence of the Thickness of the Ferro- and Antiferromagnetic Phases on Magnetic Properties in Epitaxial Heterostructures Based on Exchange Biased La-Ca-Mn-O System**
M. E. Gomez, G. E. Campillo, S. Diez, A. Hoffmann, and W. Lopera
- 4582 **Resistive Switching in Ferromagnetic La_{2/3}Ca_{1/3}MnO₃ Thin Films**
I. Alposta, A. Kalstein, N. Ghenzi, S. Bengio, G. Zampieri, D. Rubi, and P. Levy
- 4586 **Ferroelectric/Ferromagnetic Bilayers Based on Oxide Materials by Pulsed-Laser Deposition**
J. E. Ordoñez, M. E. Gómez, W. Lopera, and P. Prieto
- 4590 **Emergence of Ferromagnetism in TbMnO₃ Bulk by Al-Doping**
A. Astudillo, J. Izquierdo, F. J. Bonilla, G. Bolaños, and O. Morán
- 4594 **Magnetic Properties of the Double Perovskites LaPbMSbO₆ (M = Mn, Co, and Ni)**
D. G. Franco, R. E. Carbonio, and G. Nieva
- 4598 **Magnetic and Conducting Properties of Composites of Conducting Polymers and Ferrite Nanoparticles**
I. M. Resta, G. Horwitz, M. L. M. Elizalde, G. A. Jorge, F. V. Molina, and P. S. Antonel
- 4602 **Synthesis and Properties of Bifunctional Fe₃O₄/Ag Nanoparticles**
R. A. Landa, G. A. Jorge, F. V. Molina, and P. S. Antonel
- 4606 **One Step Chemical Synthesis of Ag-Fe₃O₄ Heterodimer Nanoparticles: Optical, Structure, and Magnetic Properties**
D. Muraca, O. F. Odio, E. Reguera, and K. R. Pirota
- 4610 **Low-Dimensional Magnetic Systems in Nanopore Arrays**
N. Bajales, M. S. Viqueira, L. Avalle, S. E. Urreta, and P. G. Bercoff
- 4614 **Synthesis and Characterization of Co-Doped ZnO Nanocompound**
A. Carrero, V. Sagredo, C. Pernechele, and F. Rossi
- 4618 **Evaluation of Process Variables in the Alignment Factor of Nd-Fe-B Magnets Made by Metal Injection Molding**
L. Ulian Lopes, T. Hartwig, and P. A. P. Wendhausen
- 4622 **Influence of Nb Doping on Magnetic Properties of Nanocrystalline Nd-Fe-B Alloys**
V. Bilovol, S. Ferrari, L. G. Pampillo, D. Derewnicka, M. Spyra, and F. D. Saccone

- 4626 **Synthesis of Room-Temperature Magnetic Refrigerants Based on La-Fe-Si by a Novel Process**
H. N. Bez, C. S. Teixeira, B. G. F. Eggert, J. A. Lozano, M. S. Capovilla, J. R. Barbosa, Jr., and P. A. P. Wendhausen
- 4630 **M-Type Hexaferrites With Enhanced Coercivity**
V. Barrera and I. Betancourt
- 4634 **The Effect of Si on the Formation of the La(Fe, Si)₁₃ Phase Synthesized by the Reduction-Diffusion (R/D) Process**
D. Travessini, T. A. C. Favero, C. S. Teixeira, and P. A. P. Wendhausen
- 4638 **Critical Conductivity Fluctuations of YBa₂Cu_{2.985}Fe_{0.015}O_{7-δ} Single Crystal**
M. L. Hneda, V. d. N. Vieira, L. d. S. Berchon, and R. M. Costa
- 4643 **Low Temperature Vortex Dynamics in Superconducting Nb Films Containing Square and Rectangular Arrays of Ni Nanodots**
C. E. Chilitotte, S. J. Carreira, V. Bekeris, A. Gomez, E. M. Gonzalez, J. L. Prieto, and J. L. Vicent
- 4647 **Thermodynamic Behavior of Ce Compounds Close to a $T \rightarrow 0$ Critical Point**
J. G. Sereni, G. Schmerber, and J. P. Kappler
- 4652 **Structural Distortion and Magnetic Order in the Intermetallic Eu₃Ir₄Sn₁₃ Compound**
J. R. L. Mardegan, N. Aliouane, L. N. Coelho, O. Agüero, E. M. Bittar, J. C. Lang, P. G. Pagliuso, I. L. Torriani, and C. Giles
- 4656 **Change in the Magnetic Domain Alignment Process at the Onset of a Frustrated Magnetic State in Ferrimagnetic La₂Ni(Ni_{1/3}Sb_{2/3})O₆ Double Perovskite**
D. G. Franco, R. E. Carbonio, and G. Nieva
- 4660 **Synthesis Process and Magnetic Characterization of the Novel Aurivillius Ferroelectric Material Bi₄Gd₂Ti₃Fe₂O₁₈**
C. A. Triana, J. I. Villa Hernandez, D. A. Landínez Téllez, F. Fajardo Tolosa, and J. Roa-Rojas
- 4664 **Design Parameters for Nanostructured Soft Magnetic Alloys**
J. A. Moya, S. Gamarra Caramella, L. J. Marta, and C. Berejnoi
- 4668 **Defect-Induced Magnetism in Solids**
P. Esquinazi, W. Hergert, D. Spemann, A. Setzer, and A. Ernst
- 4675 **Strain Induced Anisotropy Change in Ultrathin Fe Films Grown on MnAs(110)/GaAs(001)**
C. Helman and A. M. Llois
- 4679 **Magnetic Phases of Fermionic Atoms Confined in 1-D Optical Superlattice**
J. Silva-Valencia, R. Franco, and M. S. Figueira
- 4683 **Unusual Kondo Physics in a Co Impurity Atom Embedded in Noble-Metal Chains**
S. Di Napoli, M. A. Barral, P. Roura-Bas, A. A. Aligia, Y. Mokrousov, and A. M. Llois

- 4687 **Analysis of Orbital Hybridization in the Magnetoelectric YMnO₃ Crystal From First Principles Calculations**
A. F. Lima and M. V. Lalic
- 4691 **Quantum Magnons of the Intermediate Phase of Half-Doped Manganite Oxides**
I. R. Buitrago, C. I. Ventura, and L. O. Manuel
- 4695 **Spectrum of Coupled Waves in Orthorhombic Multiferroics With Cycloidal Antiferromagnetic Structure in External Electric and Magnetic Fields**
I. V. Bychkov, D. A. Kuzmin, and V. G. Shavrov
- 4699 **Effect of Electric Current on Domain Wall Dynamics**
F. Beck, J. N. Rigue, and M. Carara
- 4703 **Stability of Ferromagnetic Patterns Inscribed on Arrays of Multisegmented Magnetic Nanocylinders**
E. Cisternas and E. E. Vogel
- 4707 **Some Magnetic Properties of the Different Nanodisks Obtained by Monte Carlo Method**
E. Konstantinova and J. A. de Sales
- 4711 **Soft X-Ray Magneto-Optics: Probing Magnetism by Resonant Scattering Experiments**
C. Spezzani, H. Popescu, F. Fortuna, R. Delaunay, R. Breitwieser, N. Jaouen, M. Tortarolo, M. Eddrief, F. Vidal, V. H. Etgens, M. Marangolo, and M. Sacchi
- 4717 **Magnetic Field and Gradient Standards Using Permanent Magnets: Design Considerations, Construction and Validation by Nuclear Magnetic Resonance**
E. A. Périgo and R. V. Martin
- 4721 **Processing and Properties of Magnetorheological Fluids for Prospective Application in a Passive Armour**
J. Kozłowska and M. Leonowicz
- 4725 **Formation and Kinetics of Self-Assembled Structures of Magnetic Microparticles in Rotating Fields**
M. Llera, J. Codnia, and G. A. Jorge
- 4729 **Magnetic Flux Entropy as a Tool to Predict Transformer's Failures**
J. H. Estrada, S. V. Ramírez, C. L. Cortés, and E. A. C. Plata
- 4733 **A Novel Two-Axis Theory-Based Experimental Approach Towards Determination of Magnetization Characteristics of Line-Start Permanent Magnet Synchronous Machines**
X. Lu, K. L. V. Iyer, K. Mukherjee, and N. C. Kar
- 4738 **Novel Approaches Towards Leakage Flux Reduction in Axial Flux Switched Reluctance Machines**
A. Labak and N. C. Kar
- 4742 **CONFERENCE AUTHOR INDEX**
-