

International Materials Research Congress 2025

Part B

MRS Advances Volume 11, Issue 5

Various Dates and Locations

ISBN: 979-8-3313-3687-5

Printed from e-media with permission by:

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



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

Copyright© (2026) by Springer Nature
All rights reserved.

Printed with permission by Curran Associates, Inc. (2026)

For permission requests, please contact Springer Nature
at the address below.

Springer Nature
The Campus 4 Crinan St.
London N1 9XW
United Kingdom

www.springernature.com

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

A Snapshot Review on Pd-Based Bimetallic Nanoparticles as Electrocatalysts for Alcohol Oxidation Reactions	487
<i>R. Esparza, A. Higareda, F. Mares-Briones, R. Pérez</i>	
Influence of Intermediate Annealing on the Grain Size-Magnetic Properties Relationship of a Non-Oriented Grain Fe-0.02%C-2%Si Electrical Steel.....	502
<i>Jesús García-Magaña, Nancy López-Granados, Constantín Hernández-Bocanegra, José Ramos-Banderas, Nicolás Herrera-Sandoval, Armando Salinas-Rodríguez, Emmanuel Gutiérrez-Castañeda</i>	
Microstructure and Martensitic Transition of Ni ₄₇ Mn ₄₃ -XTi ₁₀ In _x Alloys	508
<i>D. A. Cisneros-Oliva, D. I. Pineda-Ruiz, M. López-Medina, H. Flores-Zúñiga</i>	
Microstructure and Magnetic Properties of Low-Carbon Fe–3% Si Electrical Steels Subjected to a Two-Step Hot-Strip Annealing	514
<i>B. A. Resendiz, L. A. Hernández, F. Hernández, R. Deaquino, A. Salinas, M. Z. Saavedra, L. Guerra, L. Hernández, E. J. Gutiérrez</i>	
Determination of Susceptibility to Hydrogen Embrittlement and Its Effect on the Mechanical Properties of a Cathodically Charged HSLA Steel.....	521
<i>P. L. Segura-Rodríguez, J. C. Villalobos, M. S. López-Cornejo, O. Vázquez-Gómez, Y. Solana-Reyes, M. Velasco-Plascencia</i>	
Study of the Impact of Microstructure on the Corrosion Rate of a Third-Generation Advanced High-Strength Steel Assessed in a Saline Environment	527
<i>C. Fernandez-Salvador, J. C. Villalobos, P. Garnica-González, A. J. Bocanegra-Hueramo, Y. Solana-Reyes, S. Garibay-Coria</i>	
Structural Characterization by SEM and TEM of the Sinter-Extruded Si ₃ N ₄	533
<i>Silvia Betzabé Alemán-Córdova, José Reyes-Gasga, Jesús Rafael González-Parra, Sebastián Díaz-De La Torre, Leonel Ceja-Cárdenas</i>	
Inhibition of Martensitic Transformation in Ni–Mn–V–In Shape Memory Alloys by Plastic Deformation in a Secondary Phase.....	538
<i>L. A. Ascencio De La Cruz, H. Flores-Zúñiga, P. Álvarez-Alonso, J. López-García, F. Alvarado-Hernández, J. P. Camarillo-García</i>	
Influence of Laser Power on the Microstructure and Mechanical Properties of the Welded Joint of Fe–31Mn–8Al–1.2C Low-Density Austenitic Steel by Autogenous Fiber Laser Welding.....	546
<i>C. E. Coronado-Alba, I. Mejía, H. Hernández-Belmontes</i>	
Effect of Soaking Time During Intercritical Annealing on Hydrogen Permeability in a Third-Generation medium-Mn AHSS	554
<i>L. Ramos-Pintor, J. C. Villalobos, P. Garnica-González, A. J. Bocanegra-Hueramo, Y. Solana-Reyes, O. Hernández-Cristobal</i>	
Density Functional Theory Calculations of Solid State-Assisted Diffusion and Positron Lifetime in Al-Mg Models	559
<i>J. J. Ríos-Ramírez, J. Guerrero-Sánchez, M. Salazar-Villanueva, J. F. Rivas-Silva</i>	

Effect of Hot-Band Annealing and Temper Rolling on the Microstructure and Magnetic Performance of Fe-2%Si Electrical Steels.....	565
<i>K. Ojeda, F. Hernández, A. Salinas, R. Deaquino, L. Guerra, A. Bedolla, F. Botello, E. J. Gutiérrez</i>	
Polysaccharide-Based Polyurethane/Carbon Quantum Dots Composite Hydrogels Synthesized by Green Chemistry Methods for Dye Removal and Photodegradation	571
<i>Alberto Elizalde-Mata, M. E. Trejo-Caballero, Melany Vázquez-Flores, Emilio Guardado-Ruiz, J. Yael Barrera-ángel, Gustavo A. Molina, Miriam Estevez</i>	
Effect of Joule Heating on Microstructure During Rapid Intercritical Annealing of AISI 1045 Steel	580
<i>José S. Ponciano-Reyes, Octavio Vázquez-Gómez, Martín Herrejón-Escutia, Héctor J. Vergara-Hernández, Gerardo M. Chavez-Campos, Edgar López-Martínez</i>	
Stress Corrosion Cracking Assessment of ASTM A36 Steel Used in the Hydrocarbon Storage Tanks	586
<i>A. Contreras, L. M. Quej, E. Sosa</i>	
Effect of Quenching, Tempering, and Polymeric/Copper Coatings on the Hydrogen Permeability of a Medium-Carbon, Low-Alloy Cr–Mo–V Steel.....	592
<i>Bryan Daniel Gutiérrez-García, Miguel Iván Dávila-Pérez, Octavio Vázquez-Gómez, Julio César Villalobos-Brito, Héctor Javier Vergara-Hernández</i>	
Reversible Magnetocaloric Effect in Low-Hysteresis Ni–Mn–In–Ga–Cu Ferromagnetic Shape Memory Alloy	598
<i>J. P. Camarillo-García, H. I. Gala-Barrón, H. Flores-Zúñiga, P. Álvarez-Alonso, J. López-García, F. Alvarado-Hernández</i>	
Magnetic Properties of Pr-Fe-B Nanocrystalline Alloys for Permanent Magnet Applications.....	605
<i>A. Miranda, I. Betancourt</i>	

Author Index