

International Materials Research Congress 2025

Part B

MRS Advances Volume 11, Issue 4

Various Dates and Locations

ISBN: 979-8-3313-3607-3

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© (2025) 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

Study of the Elastoplastic and Corrosion Resistance of Ti ₂₅ Nb _x HfO ₂ Composites for Potential Biomedical Applications	371
<i>E. Arteaga-Morán, L. E. Beltran-Bañuelos, D. Bravo-Barcenas, R. Suárez-Martínez, E. Rodríguez-De Anda, O. Jimenez</i>	
Exploration of the Elastoplastic and Wear Behavior of Ti ₂₄ Nb _x Sn Alloys for Potential Biomedical Applications.....	378
<i>A. M. Moran-Rojas, D. Bravo-Barcenas, R. Suárez-Martínez, O. Jimenez, E. Rodríguez-De Anda, M. Flores</i>	
Sintering of Aluminum-319 Matrix Composites Reinforced with Nanostructured Ni-Graphenic Material: Tribological and Mechanical Evaluation	384
<i>L. López-Ojeda, R. Muñoz-Arroyo, H. M. Hdz-García, J. C. Diaz-Guillén, M. I. Pech-Canul, Isidro Guzmán Flores, J. Tapia-López, J. E. Hernández Flores</i>	
Structural Analysis by X-Ray Tomography and Radial Variation of the Physical Properties of Washingtonia Palm Wood.....	390
<i>Luis Olmos, Raúl Espinoza-Herrera, Erica Arreola-García, Jaime Espino-Valencia, Dante Arteaga</i>	
Tribological Performance of Solution-Treated Niobium-Alloyed SAE 1006 Steel	396
<i>David Flores-Hernández, M. De Jesús Soria-Aguilar, Josefina García-Guerra, Francisco Carrillo-Pedroza, Carlos A. León-Patiño, Manuel A. F. García</i>	
Influence of Bismuth Addition on the Microstructure and Coefficient of Friction in Microwear Tests of an Al-10Cu Alloy Fabricated by Powder Metallurgy	403
<i>J. Chávez, B. Verduzco, O. Jiménez, D. Bravo-Barcenas, M. Flores-Jiménez, E. Rodríguez, J. Ibarra</i>	
Coupling 2D and 3D Image Analyses to Determine Porosity and Minerals of Geothermal Rocks.....	409
<i>Luis Olmos, Hatziri A. Ojeda-Macedo, Jorge A. Ávila-Olivera, Dante Arteaga-Martínez, Boris Chako-Tchamabé</i>	
Microwear Response of Quench Heat-Treated Ti ₃₀ Zr _x Ta System with Potential in Biomedical Fields	415
<i>L. E. Delgado-Delgado, D. Bravo-Barcenas, R. Suárez-Martínez, O. Jimenez, E. Rodríguez-Deanda, J. Chávez</i>	
Three-Dimensional Characterization of Rocks by Coupling Computed Tomography and X-Ray Diffraction	420
<i>Luis Olmos, Diana M. Torres-Arreola, Bertha A. Olmos-Navarrete, Dante Arteaga, José M. Jara-Guerrero, Juan L. Calderon-Fuentes</i>	
Properties of Sustainable Compounds Based on Rosin and Rice Husk.....	426
<i>Erica Arreola-García, Salomon R. Vasquez-García, Nelly Flores-Ramirez, Luis R. Olmos-Navarrete, Raul Espinoza-Herrera, Daniel Fernandez-Quiroz</i>	
Mechanical Evaluation of Wood Joints with Methylene Diphenyl Diisocyanate and Its 3D Analysis by Computed Tomography	431
<i>María A. López-Vivanco, Mayra I. Carrillo-Gómez, Luis Olmos, Raúl Espinoza-Herrera</i>	

Impact of the Anode Contact Material in the Current–Voltage Characteristics of PEDOT:PSS/ZnO Heterojunction Diodes.....	437
<i>Leonardo S. Sanchez-Fernandez, Isai S. Hernández-Luna, Arturo T. Sanchez, Cuauhtémoc L. Puertos, Norberto Hernandez-Como</i>	
Mechanical and Tribological Properties of AZ91E /NP-Ti Composites Produced by Mechanical Alloying.....	442
<i>Lázaro A. Falcón-Franco, Jessica G. Chávez Martínez, J. García Guerra, Sergio G. Villarreal, Manuel A. Filio-García</i>	
Effect of Ag Addition on the Microstructure and Properties of AlCrCuFeNi High-Entropy Alloys Synthesized by Mechanical Alloying for Protective Coating Applications.....	449
<i>E. Servín, A. Molina-Ocampo, S. R. Gonzaga, M. Serrano, A. Torres-Islas, M. C. Juárez, H. Villanueva</i>	
Effect of Mechanical Alloying on the Microstructure, Microhardness, and Corrosion Behavior of a TiNbZrVFeAl High-Entropy Alloy	457
<i>L. López-Arámburo, J. Chávez, O. Jiménez, L. Olmos, M. Flores-Jiménez, E. Rodríguez, J. Ibarra-Montalvo</i>	
Multifunctional ZnS Thin Films for Passive Smart Windows: Optical, Surface, and Thermal Characterization via Scalable Fabrication	464
<i>Víctor L. G. Ajuech, Kassandra C. Amezcua, Yolanda J. Flores, Mónica B. O. López</i>	
Hydrothermal Synthesis and Structural Characterization of Ni and Cu Loaded ZnO for Photocatalytic Hydrogen Evolution.....	470
<i>K. G. Rincón-Soto, E. Ríos-Valdovinos, M. Jiménez-Cerda, F. Pola-Albores, D. Santiago-Salazar, V. Pérez-Madrigal, E. Albiter-Escobar, M. Valenzuela-Zapata</i>	
The Influence of Mechanical Milling on Microstructural Evolution During Sintered NiMnSb Alloy Powders	481
<i>Francisco A. Hernández, Luis Olmos, Elena Mihalcea, Omar Jimenez, Jorge A. Avila-Olivera</i>	

Author Index