

Francisco C. Robles Hernandez, Ph.D.

University of Houston, Cullen College of Engineering – Division of Technology
4226 Martin Luther King Blvd, Houston, TX 77204: (713) 743-4131: fcrobles@uh.edu : <https://uh.edu/tech/mt-group/>

PROFESSIONAL SUMMARY

Accomplished Materials Scientist and Engineer with over 20 years of experience in academia and industry. Proven track record in leading research projects, securing substantial funding, and publishing influential papers. Expertise in advanced materials, characterization, electron microscopy, and manufacturing. Led research projects in materials science and engineering. Secured over \$15.5M in external grants in collaboration and independent funding. Supervised 27 graduate students, 30 Undergraduate Students, 3 postdoctoral fellows, and One Faculty in Sabbatical Exchange. Senior Member of the National Academy of Inventors, Fulbright Scholar at the Politecnico di Torino, Chair of the Radiation Safety Committee, former Director of the Center for Electron Microscopy Core Facility at the University of Houston.

EDUCATION

- **Ph.D. in Materials Science and Engineering (2000-2004)**
 - University of Windsor, Mechanical Automotive and Materials Engineering
Dissertation: *Improvement of Functional Characteristics of the Al-Si Cylinder Liners through the Utilization of Melt Treatment with the Novel Electromagnetic Technology*
Available on-line at: UWindsor or Canada.ca
- **M.S. in Materials Science and Metallurgy (1996-1999)**
 - Instituto Politécnico Nacional, ESIQIE
ESIQIE: School of Chemical Engineering: Higher Education School of Chemical Engineering and Extractive Industries
Thesis: *Production and Characterization of Composites Metal-Fullerene by Means of Mechanically Alloyed and Spark Plasma Sintering*
- **B.S. in Metallurgy, with a Minor in Chemistry of Mining (1991-1996)**
 - Instituto Politécnico Nacional, ESIQIE
ESIQIE: School of Chemical Engineering: Higher Education School of Chemical Engineering and Extractive Industries

CONTACT INFORMATION

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WORK EXPERIENCE

University of Houston

2020 - Present	Professor	Houston, TX
	• Led research projects in materials science and engineering. • Secured over \$15.5M in external grants (PI/Co-PI/SP). • Supervised 27 graduate students, 30 undergraduate students, 3 postdoctoral fellows, and 1 faculty in sabbatical.	
2024-2024	Fulbright Scholar – Politecnico di Torino	Turin, Italy
2023 - Present	Chair of the Radiation Safety Committee	Houston, TX
2023 - Present	Advisor of the Core Facility for Electron Microscopy	Houston, TX
2022 - 2023	Funding Director of the Core Facility for Electron Microscopy <i>I planned the protocols for the use for the instrumentation, and access. Co-Chair the Core-Facility committee, the approximate funding is \$9.5 M, the facility will be fully functional fall 2025 with the following equipment:</i> • <i>Scanning Electron Microscope,</i> • <i>Plasma Focus Ion Beam,</i> • <i>Transmission Electron Microscope,</i> • <i>Corrected Transmission Electron Microscope</i> In the Press: Website	Houston, TX
2024 - Present	Adjunct Faculty, Chemistry – Science Department	Houston, TX
2021 - 2023	Co-Chair of the Radiation Safety Committee	Houston, TX
2020 - Present	Advanced Manufacturing Institute, Member	Houston, TX
2018 - Present	Adjunct Faculty, Electrical and Computer Engineering	Houston, TX
2017 – Present	Adjunct Faculty, Materials Science and Engineering	Houston, TX
2015 – 2019	Associate Professor	Houston, TX
2009 – 2014	Graduate Program Coordinator, Mechanical Engineering Technology	Houston, TX
2008 - 2014	Assistant Professor	Houston, TX

Rice University

	Adjunct Faculty, Materials Science and Nanoengineering	
2019 – Present	• Professor	Houston, TX
2021 – Present	• Associate Professor	Houston, TX
2018 - 2019	• Visiting Scholar, Materials Science and Nanoengineering	Houston, TX

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Industry

- 2005 – 2008 Transportation Technology Center, Inc. (TTCI) Pueblo, CO
Principal Investigator/Project Manager
TTCI (now MxV Rail) is the largest and most advanced Railway Engineering and Testing laboratory in the world. Most developments for the North American Class I railways are made by TTCI and are adopted by railways internationally. TTCI is owned by the Association of American Railroads and the testing facility (TTC) is a federal government facility and homeland security site own by the Federal Railroad Administration.
- *A Principal Investigator or Manager at TTCI is an authority by the railways*
 - *Developed steels for rails and railroad wheels*
 - *Test and certification for heavy haul bearings*
 - *Responsible for the metallurgical laboratory and all materials testing and characterization*
 - *Post-mortem analysis of materials failure*

University of Windsor

- 2000 – 2004 *Natural Sciences and Engineering Research Council of Canada/FORD-NEMAK/University of Windsor Industrial Research Chair* Windsor, Canada
Research Assistant

Instituto Politécnico Nacional

- 1997 - 1999 National Polytechnic Institute of Mexico/Centre for Processing of Minerals and Advanced Materials Mexico City, Mexico
Research Assistant

FUNDING (RESEARCH) RECORD

Summary

- Active Grants: \$8.2 M External - *federal and Industrial*
 - UH Internal Funding: \$120,000
 - PI/CO/SP Share: \$2.2M
- Total External funding: \$15.5+ M (PI/Co-PI/SP)
- Pending Funding: \$43 M
 - Share: \$1M
- UH Service with funding: \$8.5 M - *Electron microscope facility*

Current Funding

1. **PI: Francisco C. Robles Hernandez**, Co-PI: Shelton R. Taylor, An In-Track Apparatus to Improve Thermite Weld and Rail Integrity, Federal Railroad Administration, Grant Number: 693JJ622C000040 Award: \$527,424 + \$121,271 match, 2022-2025.

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2. PI: Z. Fan, **Co-PI: F. C. Robles Hernandez**, Towards an Effective Energy Transition by the Development of a Solid State Battery using PetCoke as Carbon Source, Funding Agency: Energy Transition Institute-UH, Phase I and II: \$140,000, 2023-2025.
3. PI: J. Rimer, Co-PI's: R. Lee, A. Karim, P. Vekilov, J. Palmer, SP: G. Zerze, **F. C. Robles Hernandez**, Welch Center for Advanced Bioactive Materials Crystallization, Welch Foundation, Award Number: V-E-0001/73325, 08/2023-07/2028, \$5,000,000.
In the Press: [Welch](#) [UH](#) [Science](#) [UH Engineering](#)
4. **PI: Francisco C. Robles Hernandez**, Neutral Temperature Determination using Reliable Pressure Sensing Ceramics, Federal Railroad Administration, \$187,914, 07/2024-06/2026.
In the Press: [UH-FRA Funding](#) [UH Technology](#)
5. PI: J. Wu, **Co-PI: Francisco C. Robles Hernandez**, Collaborative Research: Strain-mediated Ca diffusion and cation exchange for high-performance superconductor nanocomposites, National Science Foundation, \$624,936, 08/2024-07/2027.
In the Press: [UH Technology](#)
6. PI: J. Wu, **Co-PI: Francisco C. Robles Hernandez**, Co-PI: H. Collaborative Research: FuSe: Simulation-guided design, characterization, and manufacturing of sub-2nm memristors for neuromorphic computing, National Science Foundation, \$1.8M, 08/2024-07/2028.
In the Press: [NSF](#) [KU News](#) [Web](#)

Completed Projects

7. **PI: Francisco C. Robles Hernandez**, Rail Base Corrosion, National Academy of Science, \$75,000, 2005.
8. **PI: Francisco C. Robles Hernandez**, Advanced Rail Steel, Federal Railroad Administration, \$180,000, 2005.
9. **PI: Francisco C. Robles Hernandez**, Advanced Rail Welding, Association of American Railroads, \$250,000, 2005.
10. **PI: Francisco C. Robles Hernandez**, Advanced Rail Welding, Association of the American Railroads, \$250,000, 2006.
11. **PI: Francisco C. Robles Hernandez**, Advanced Rail Steels, Association of American Railroads, \$168,000, 2006.
12. **PI: Francisco C. Robles Hernandez**, Strategies to Prevent Wheel Failure, Association of American Railroads, \$250,000, 2006.
13. **PI: Francisco C. Robles Hernandez**, Advanced Rail Steels, Association of American Railroads, \$178,000, 2007.
14. **PI: Francisco C. Robles Hernandez**, Strategies to Prevent Wheel Failure, Association of American Railroads, \$350,000, 2007.
15. **PI: Francisco C. Robles Hernandez**, Advanced Rail Steels, Association of American Railroads, \$190,000, 2008.
16. **PI: Francisco C. Robles Hernandez**, Strategies to Prevent Wheel Failure, Association of American Railroads, \$350,000, 2008.
17. **PI: Francisco C. Robles Hernandez**, Rail Base Corrosion Phase II, National Academy of Science, \$80,000, 2008.
18. **PI: Francisco C. Robles Hernandez**, UH-internal funding, minor grants: \$23,500, 2009-2014.

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19. **PI: Francisco C. Robles Hernandez**, Projects with the Transportation Technology Center, Inc., \$26,600, 2008-2009.
20. **PI: Francisco C. Robles Hernandez**, Heat exchange improvement ideas for Water Heater Trucks, McAda Fluids Heating Services, \$68,650, 2011-2012.
21. **PI: Francisco C. Robles Hernandez**, Laser Cladding of Welds to Improve Railroad Track Safety, National Academies/TRB-Safety IDEA, Grant: SAFETY-22, \$100,000 + 68,171 (in-kind), 2013-2014.
22. **PI: J. Neal, Co-PI's: Francisco C. Robles Hernandez and R. Lee**, Prevalence of Carbon Nanotubes in Irradiated Foods and the Potential Impact on Health, GEAR – University of Houston, \$29,996, 2013-2014.
23. **A. Reyes (PI), Francisco C. Robles Hernandez (Co-PI)** UH two-week College and Career Readiness Institute for Houston Independent School District (HISD) migrant, newcomer, and bilingual students, \$68,000, four (4) consecutive camps during the summers (\$17,000 each), 2015-2018.
24. **PI: Francisco C. Robles Hernandez**, Water/soil remediation strategy using with a catalyst and/or a - photocatalyst to degrade organics, College of Technology – University of Houston, \$73,999 (\$45,000 in-kind stipend for a graduate student), 2016-2018.
25. **PI: Dr. Xiaojing Yuan, Co-PI H. Malki, Senior Personnel Francisco C. Robles Hernandez (14% funding share)**, Succeed in Engineering Technology Scholars (SETS): Identifying and Developing Future Technology Leaders, National Science Foundation, \$767,868, 2015-2021, NSF-Grant Number 1458772,.
26. **PI: Francisco C. Robles Hernandez**, International Agreement between the University of Houston and CONACyT, \$500,000+, 2016-2021.
Note: I spend approximately three years negotiating a collateral graduate program agreement between the Government of Mexico Educational and Research Agency called CONACyT and the University of Houston. CONACyT is the equivalent of NSF in the USA. This agreement is offered by CONACyT to the top 100 ranked universities as per the QS World University Scores. At the time I made the agreement, the University of Houston was in the 600-750 category¹. Therefore, this agreement required extra work and dedication to convince CONACyT's former director (Dr. Enrique Cabrero Mendoza) to grant the University of Houston such a prestigious award. I conducted all this work under voluntary basis and acted as the PI/Liaison for five years attracting way over 25 graduate students Post-doctoral fellows, faculty in sabbatical, research exchange, etc. the funding level was way above \$500,000, but I use this amount as a conservative number.
In the Press: [UH News](#) [The Daily Cougar](#) [UH Provost Office](#)
27. **PI: Francisco C. Robles Hernandez**, Co-PI: Ray Taylor, Minimization of weld failures by means of gas and shrinkage porosity reduction, National Academies/TRB-IDEA, \$100,000 + 51,500 (In-kind), 2019-2022, Grant: SAFETY-38.
28. **PI: Francisco C. Robles Hernandez**, Co-PI: G. Majkic, Inline Scanning Raman Spectroscopy for Quality Control and Process Feedback for Reel-to-Reel Manufacturing, Advanced Manufacturing Institute, \$50,000, 2020-2021, Grant: 66334.

¹ <https://www.topuniversities.com/university-rankings/world-university-rankings/2022>

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29. **PI: Francisco C. Robles Hernandez**, CO-PI: V. Balan, Funds to purchase Planetary Mill to produce Bio-degradable Composite Materials, University of Houston, \$35,483, 2020-2021.
30. PI: W. Zhu, Co-PI Augustina Reyes, **Senior Personnel Francisco C. Robles Hernandez (10% funding share)**, RET Site: High School Teacher Experience in Engineering Design and Manufacturing, National Science Foundation, \$603,490, 2019-2022, Award: 1855147.
31. **PI: Francisco C. Robles Hernandez**, Co-PI: G. Majkic, Reel-to-Reel 2D Scanning Raman Mapping for Quality Control and Process Optimization of 2G-HTS Conductors, Advanced Manufacturing Institute, \$35,000, 2021.
32. PI: Stanko Brankovic, **Co-PI: Francisco C. Robles Hernandez**, Electrodeposited Soft Conifex Magnetic Films with Low Magnetic Losses for Power Applications, Semiconductor Research Corp., \$239,602, 2020-2022, Grant: 2020-PK-2953.
In the Press: [UH News](#)
33. **PI: Francisco C. Robles Hernandez**, From waste carbon to graphite, graphene and morphed graphene for energy applications using mechanical and environmental methods at standard conditions, Center for Carbon Management in Energy, \$50,000, 2019-2021, Grant: G0506199.
34. **PI: Francisco C. Robles Hernandez**, Market Research to Identify a Window of Opportunity for FIERF on Current Needs for Railroad wheels, Forging Industry Educational & Research (FIERF), \$9,973, 2021.
Note: this seed funding is provided to establish a research chair on additive manufacturing and forging at the University of Houston. It is expected that this funding will continue for years. Ideally, FIERF will provide not only seed funding, but also scholarships for undergraduate and graduate students as well as internships.
35. PI: J. Rimer, Co-PI's: R. Lee, **F. C. Robles Hernandez**, Establishment, Instrumentation, and Construction of the new Electron Microscope Core Facility for the University of Houston \$1.8 M, 2020-2021, UH Internal Grant.
36. PI: Selvamanickam, Venkat, Co-PI's: G. Majkic, and **Francisco C. Robles Hernandez**, High Performance High-Field Superconducting Wires for Next Generation Accelerators, U.S. Department of Energy, \$1,880,000, 2021-2024, Grant: 111387.
37. **PI: Francisco C. Robles Hernandez**, CO-PI: G. Majkic, Metal Pool Monitoring for Additive Manufacturing Systems, Advanced Manufacturing Institute, \$50,000, 2023-2024, Grant: 71945.

Submitted

38. PI: H. Ghasemi, Co-PI's: **F. C. Robles Hernandez**, J. Rimer, J. B. Powell, 3D Printed Sorbent/Metal Hierarchical Material for Hydrogen Storage and Transport, Solicitation: DE-FOA-0003387, \$2,709,436, *Submitted 2024*.
39. PI: J. Contreras Vidal, Co-PI's: **Francisco C. Robles Hernandez**, C. Arellano, Z. Cheng, J. Feng, E. Morshhedzadeh, P. Willson, MyoStep: A soft powered exoskeleton for diagnostic, assistance and rehabilitation of gait in pediatric populations, National Institute of Health, \$2,205,052, *Submitted 2024*.
40. PI: J. Prevost, there are 4 Co-PI's, and 39 Senior Personnel including: **F. C. Robles Hernandez**, QLCI Preliminary Proposal: Quantum Institute for Cyber Resilience (QuICR), National Science Foundation, \$39,000,000, *Submitted 2025*.

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SELECTED HONORS AND AWARDS

2025 - Present	Senior Member of the National Academy of Inventors	USA
2023 - 2025	Fulbright Scholar at the Politecnico di Torino	Turin, Italy
2017 - 2020	National System of Researchers, Mexico, Level II Honorific assignment equivalent to an Associate Professor	Mexico
	Plenary Speaker	
2019	CoSAAMI, Advanced Materials Initiative	South Africa
2012	The Southern African Institute of Mining and Metallurgy	Vanderbijlpark Magaliesburg
2017	Keynote Speaker Congreso Internacional de Metalurgia y Materiales	Monclova Coah., Mexico
2012	Keynote Article, Metallurgy of High Carbon Steels for Railroad Applications, SAIMM-South Africa Magaliesburg	South Africa
2009	Best Paper Award: International Heavy Haul Association, Shanghai	China

NOTABLE EXPERT SERVICES

2015	Amtrak flooding during Sandy Superstorm Law Firm: Anderson Kill Attorneys and Counselors at Law Lawsuit amount \$1.2B	New York City, NY
2007	Post-mortem metallurgical analysis for Vale – Brazil Vale Railways (Brazil) vs. Arcelor Mittal (Spain): Lawsuit amount: \$500M	Pueblo, CO

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TEACHING AND STUDENT LEARNING

My teaching approach is driven by motivation and enthusiasm, aiming to transmit a lifelong learning experience to students. I engage students through dynamic lectures supported by multimedia materials, top research, and industrial focus. My teaching philosophies involve constructivism, design thinking, collaborative learning, among other pedagogical methods. I encourage students to center their motivation in the class and start thinking about their future roles in society. Over my career, I have taught over 1,500 students, mentoring them to achieve their academic and professional goals.

Graduate Student Supervision

- 27 graduate (M.S. and Ph.D.) students successfully graduated,
- 7 Ph.D. students in progress
- 30 Undergraduate Research Assistant Students
- 3 Postdoctoral Fellows
- 1 Sabbatical Fellow

Selected Student Awards

W. Yang, Best Ph.D. Thesis in the Materials Science and Engineering Program (University of Houston), Low Temperature Synthesis Sapphire and Ruby and Their Optical Applications, 2019.

- Supervisors: Drs. F. C. Robles Hernandez and S. Brankovic

In the Press: [UH Graduate Students](#) [Best Dissertation Award](#)

- K. Ahmadi, First Place, Spring Poster Competition, UH Electrochemical Society Student Chapter, 2019

- Supervisors: Drs. S. Brankovich and **F. C. Robles Hernandez**

In the Press: [UH Graduate Student](#) [ECS Spring 2019](#)

Courses Taught Since 2008 at the University of Houston

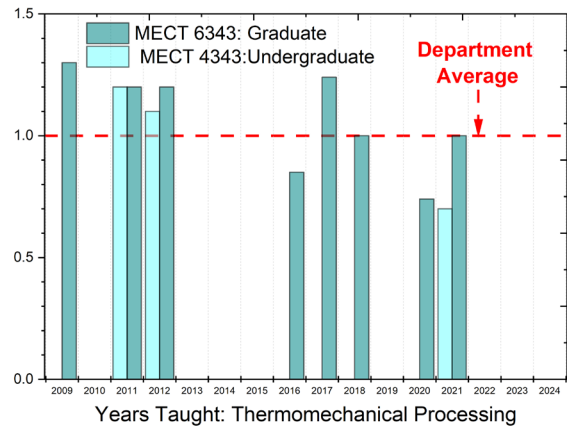
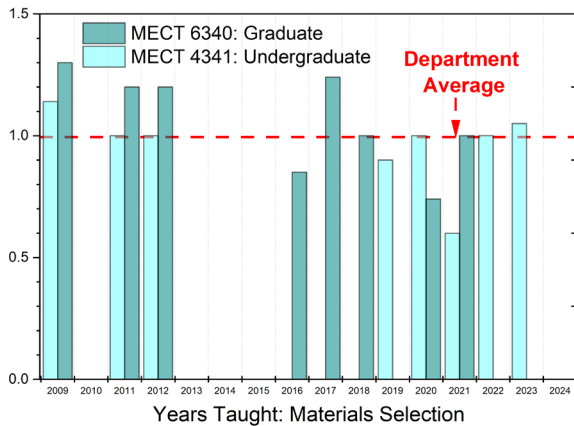
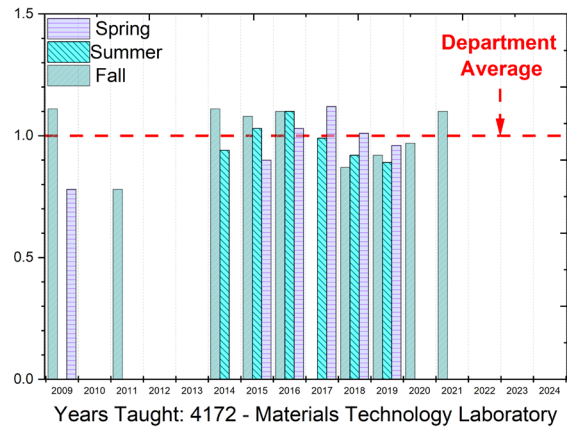
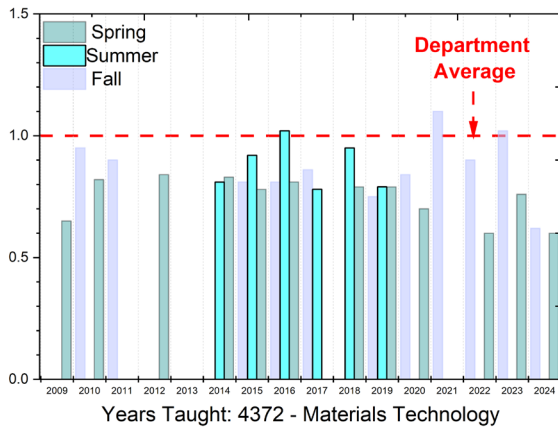
- MECT 3155: Strength of Materials Laboratory
- MECT 3318: Fluids
- MECT 3355: Strength of Materials Lecture
- MECT 3365: Computer Aided Design
- MECT 4172: Materials Selection Laboratory
- MECT 4341: Materials Selection (Undergraduate)
- MECT 4343: Thermomechanical Processing (Undergraduate)
- MECT 4372: Materials Selection Lecture
- MECT 6340: Materials Selection (Graduate)
- MECT 6343: Thermomechanical Processing (Graduate)
- CHEM 6332: Inorganic Materials Analysis
 - Taught only Section 3: Scanning Electron Microscopy and Transmission Electron Microscopy

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Most Relevant Courses: Student Evaluations

Note: other courses were taught only a few times.



Visiting Lecturer

Monclova Coahuila, México, 2015

Advanced Methods of Characterization and Analysis for Steel: 40 hours

M.S. Graduate Program

Altos Hornos de México,

Universidad Michoacana de San Nicolas de Hidalgo

Advanced Methods of Characterization and Analysis: 30 hours

M.S. and Ph.D. Graduate Programs

Morelia Michoacán, México, 2016

Politecnico Di Torino

Introduction to Electron Microscopy: 20 hours

M.S. and Ph.D. Graduate Programs

Torino, Italy 2024

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EDUCATIONAL AND PROFESSIONAL TRAINING

Post-Doctoral Fellows and Sabbatical Visitors

Dr. José M. Herrera Ramirez

Sabbatical Fellow

Currently at CIMAV Chihuahua as a Professor (Title in Spanish: Investigador Titular C)

Period: 2015-2016

Dr. Ivanovich Estrada Guel

Postdoctoral Fellow, 2015

Currently at CIMAV Chihuahua as an Associate Professor (Title in Spanish: Investigador Titular B)

Period: 2015

Dr. Fernando D. Cortes Vega

Postdoctoral Fellow

Currently at CINVESTAV Queretaro as an Assistant Professor (Title in Spanish: Investigador Titular A)

Period: 2015-2020

Dr. Arti Rani

Postdoctoral Fellow

Period: 2020

Graduate Students

Student: Amal D.K.P. Savio

Degree: M.S.

Graduation Year: 2011

Thesis Title: Characterization Protocol for Titanium Dioxide (Anatase:Rutile) Use for Photocatalytic Applications

Second Place Thesis Award: Mechanical Engineering Technology

Student: David A. Barber

Degree: M.S. Dual Degree

Graduation Year: 2013

Thesis Titles: Mechanical Engineering Technology: Cost-Effective Thermomechanical Synthesis and Characterization of Complex Carbon Nanostructures for Structural Applications

Second Place Thesis Award: Mechanical Engineering Technology

Graduation Year: 2013

Project Management: Categorizing the Process that Produced Particular Structures

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Student: Obiri Eytayo

Degree: M.S. Dual Degree

Graduation Year: 2013

Thesis Titles: Mechanical Engineering Technology: Growth and Synthesis of Carbon Nanotubes by Chemical Vapor Distribution on Alumina Substrates and their Reinforcing Effect for Structural Composites

Graduation Year: 2013

Project Management: A Comparison of Different Sintering Methods in the Development of Al₂O₃ Nanostructured Composites Reinforced with Carbon Nanostructures

Student: Anderson Okonkwo

Degree: M.S. Dual Degree

Graduation Year: 2014

Thesis Titles: Mechanical Engineering Technology: Engineering Carbon Nanostructures in Solid State
Second Place Thesis Award: Mechanical Engineering Technology

Graduation Year: 2014

Project Management: Laser Processing to Improve Track Safety, Ridership Safety and Efficiency

Student: Octavio Herrera Sanchez

Degree: M.S.

Graduation Year: 2015

Thesis Title: Synthesis of Al6061-Carbon Fibers and its Numerical and Experimental Analysis

Student: Jennifer Nguyen

Degree: M.S.

Graduation Year: 2015

Thesis Title: Prevalence of Carbon Nanotubes in Irradiated Foods and the Potential Impact on Health

Student: A., Reddy Erra

Degree: M.S.

Graduation Year: 2015

Thesis Title: Carbon Nanostructures for Highly Efficient Rechargeable Batteries

Student: Alejandro Tejada Ochoa

Degree: M.S.

Graduation Year: 2015

Thesis Title: Synthesis of Silicate from Soils Rich in SiO₂ for Applications as Geopolymers

Student: Olga I. Pérez Ordoñez

Degree: M.S.

Graduation Year: 2015

Thesis Title: Synthesis and Structural and Mechanical Analysis of a Geopolymeric Paste

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Student: Omar Velazquez Meraz

Degree: M.S.

Graduation Year: 2016

Thesis Title: Synthesis and Characterization of Chitosan Composites Reinforced with Carbon Nanostructures

Student: Fernando D. Cortes Vega

Degree: Ph.D.

Graduation Year: 2017

Thesis Title: Synthesis and Characterization of Doped Alumina with Cr⁺³ Ions and Reinforced Using sp² Bonded Carbon Nanostructures

Student: Mudit Singh

Degree: M.S.

Graduation Year: 2018

Thesis Title: Water Remediation by Means of Co-Ti-O Photoactive Composites Having Enhanced Sunlight Activity

Best Thesis Award: Mechanical Engineering Technology

Student: Wenli Yang

Degree: Ph.D.

Graduation Year: 2018

Thesis Title: Low Temperature Synthesis Sapphire and Ruby and Their Optical Applications

Best Thesis Award: Materials Science and Engineering Program at the University of Houston

Student: Kamyar Ahmadi

Degree: Ph.D.

Graduation Year: 2020

Thesis Title: Electrochemical Synthesis of Functional Films and Coatings

Student: Amruta Raghatate

Degree: M.S.

Graduation Year: 2020

Thesis Title: Developing Chitosan-Morphed Graphene based Functional Materials by Compression Molding and Laser Lithography

Student: Nathaly A. Castañeda Quintero

Degree: M.S.

Graduation Year: 2021

Thesis Title: Inline Scanning Raman Spectroscopy for Quality Control and Process Feedback for Reel-to-Reel Manufacturing

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Student: Mehrnaz Shirazi

Degree: Ph.D.

Graduation Year: 2021

Thesis Title: IR Spectroscopy Application in Studies of Electrochemical Adsorption of Hydrogen on Monolayer Catalyst

Student: Dhaivat Solanki

Degree: Ph.D.

Graduation Year: 2022

Thesis Title: Electrodeposition of CoNiFeX magnetic Thin Films with Low Magnetic Losses for Power Applications

Current Students, Graduation in Progress

Student: Anika I. Lim

Degree: Ph.D.

Year: 2025

Thesis Title: Real-Time Thermography for In Operando Additive Manufacturing Defect Mitigation using a Machine Learning Approach

Student: Hugo Barragan Vargas

Degree: Ph.D.

Year: 2025

Thesis Title: Intermittent Pulsed Frequency for Induction Heating on Gears

Selected for the Best Thesis Award: In Engineering

Student: Maria C. Belduque Correa

Degree: Ph.D.

Year: 2026

Thesis Title: In-Track Apparatus to Improve Thermite Weld and Rail Integrity

Student: Paulina Lopez Eligio

Degree: Ph.D.

Thesis Title: Analysis of Precipitates of Alloying Elements Formed During the Tempering of Dual-Phase Steel Alloyed with V-Mo

Year: 2026

Student: Samprash Risal

Degree: Ph.D.

Year: 2027

Thesis Title: In-Situ Characterization of Interfaces in All Solid-State Batteries

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Student: Alba M. Valero Morales

Degree: Ph.D.

Year: 2029

Thesis Title: Development of AI and ML Methods for Advanced Characterization of Superconductors

Student: Denisse Torres Avalos

Degree: Ph.D.

Year: 2029

Thesis Title: Development of AI and ML Methods for Advanced Characterization of Memristors

Undergraduate Students

Student: Ulises Aldea

Degree: B.S.

Topic: Thermal Analysis for Animal Tissue

Year: 2011

Accomplishments: 1 peer-review manuscript, and 1 conference

Student: Anthony Abana

Degree: B.S.

Topic: Thermal Analysis for Animal Tissue

Year: 2011

Student: Tripura Yelamarthy

Degree: B.S.

Topic: Thermal Analysis

Year: 2011

Student: Cynthia Brysch

Degree: B.S.

Topic: Synthesis of Chitosan

Year: 2012

Accomplishments: 1 peer-review manuscript, 1 Peer review proceeding, and 1 conference

Student: Savanna Daley (REU-NSF Exchange Student from University of Wisconsin)

Degree: B.S.

Topic: Metallurgical Analysis of Rail Steels

Year: 2011

Student: Jessica Fletcher

Degree: B.S.

Topic: Synthesis and Characterization of TiO₂

Year: 2011

Accomplishments: 2 peer-review manuscript, and 1 conference

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Student: Julio Quintero

Degree: B.S.

Topic: Synthesis and Characterization of Carbon Nanostructures

Year: 2011

Accomplishments: 3 peer-review manuscripts (1 invited), and 4 conference (2 invited)

Student: Andres Fals

Degree: B.S. (M.S. incomplete)

Topic: Alumina Composites Reinforced with Carbon Nanostructures

Year: 2012

Accomplishments: 2 peer-review manuscripts, and 6 conference (2 invited), 2nd place at COT Student awards UH

Student: Mohammed Mohammed

Degree: B.S.

Topic: Thermal Analysis and Characterization of Animal Tissue

Year: 2012

Accomplishments: 1 conference poster best paper award

Student: David Pepe

Degree: B.S.

Topic: Synthesis and Characterization of TiO₂

Year: 2012

Accomplishments: 2 peer-review manuscripts

Student: Carlos Madival

Degree: B.S.

Topic: Synthesis and Characterization of TiO₂

Year: 2012

Accomplishments: 2 peer-review manuscript, and 2 conference

Student: Francisco Perez

Degree: B.S.

Topic: Synthesis and Characterization of TiO₂

Year: 2014

Accomplishments: 2 peer-review manuscript, and 2 conference

Student: Oscar Hetch

Degree: B.S.

Topic: Synthesis and Characterization of TiO₂

Year: 2014

Accomplishments: 2 peer-review manuscript, and 2 conference

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Student: Alexandra Ulmet

Degree: B.S.

Topic: Synthesis of Chitosan

Year: 2014

Accomplishments: 1 peer-review manuscript, 1 Peer review proceeding, and 1 conference

Student: Dr. Eric Wold (Ph.D. from UTMB)

Degree: B.S.

Topic: Synthesis of Chitosan

Year: 2014

Accomplishments: 1 peer-review manuscript, 1 Peer review proceeding, and 1 conference

Student: R. Barham

Degree: B.S.

Topic: RET-NSF Manufacturing of Composites Materials

Year: 2021

Student: D. Scott

Degree: B.S.

Topic: RET-NSF Manufacturing of Composites Materials

Year: 2021

Student: E. Valladolid

Degree: B.S.

Topic: RET-NSF Manufacturing of Composites Materials

Year: 2021

Student: A. Rodrigues

Degree: B.S.

Topic: RET-NSF Manufacturing of Composites Materials

Year: 2022

Accomplishments: 2 peer-review manuscripts (in progress)

Student: K. Soares

Degree: B.S.

Topic: RET-NSF Manufacturing of Composites Materials

Year: 2022

Student: P. Pillai

Degree: B.S.

Topic: RET-NSF Manufacturing of Composites Materials

Year: 2022

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Student: M. Nance

Degree: B.S.

Topic: RET-NSF Manufacturing of Composites Materials

Year: 2023

Accomplishments: 2 peer-review manuscripts

Student: S. Galloway

Degree: B.S.

Topic: RET-NSF Manufacturing of Composites Materials

Year: 2023

Accomplishments: 2 peer-review manuscripts

Student: S. Gupta

Degree: B.S.

Topic: RET-NSF Manufacturing of Composites Materials

Year: 2023

Accomplishments: 2 peer-review manuscripts

Selected Graduate Student Committees

Student	Thesis Title	Degree	Year
S. Prakasan	Characterization of CVD-Grown Monolayer and Few-Layer Graphene using Microwave Dielectric Resonator	M.S.	2016
R. Mekala	Synthesis and Characterization of Scalable High Permittivity Core-Shell Ferroelectric Polymers for Energy Storage Solutions	M.S.	2013
K. Farokhzadeh	Modification of Ion Nitriding of Ti-6Al-4V for Simultaneous Improvement of Wear and Fatigue Properties	Ph.D.	2014
Y. Li	Optical Characterization of Cobalt Oxides and Graphene-Enhanced Surface Plasmon Resonance	Ph.D.	2015
S. Xing	Kinetic Study of Graphene Synthesis by Chemical Vapor Deposition	Ph.D.	2016
F. Qin	Fabrication of CoO Nanomaterials and Their Application in Water Splitting	Ph.D.	2014
H. Nguyen	Graphene and Graphene Oxide Toxicity to the Microbes in the Environment	Ph.D.	2017
S.-C. Chang	Seeded Growth of Transition Metal Dichalcogenides Array by Chemical Vapor Deposition	Ph.D.	2017
Q. Fan	Rational Design of Trimetallic Electrocatalyst for Electrochemical Overall Water Splitting	Ph.D.	2018

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SELECTED PROFESSIONAL SERVICE

Chair: J. Rimer, **Co-Chairs: F. C. Robles Hernandez**, R. Lee Electron Microscopy Core Facility, \$8.5M for renovations and core instrumentation for the Electron Microscopy facility for the University of Houston, 2020-2023

- Organizing chair of symposia at major international conferences
 - Microscopy and Microanalysis, Transmission Electron Microscopy for e-beam Sensitive Materials, 2020, Virtual
- International Materials Research Congress, Cancun, Mexico 2014-2023
 - Advances Structural Materials
 - Transmission Electron Microscopy
 - In-situ/In-operando methods
 - Advanced Catalytic Materials

International Agreement between University of Houston and the Consejo Nacional de Ciencia y Tecnología (CONACyT), ~\$500K, 2016-2021.

- Prepared, facilitated and implemented the agreement between CONACyT and UH
- More than 25 students and professionals were enrolled and financed by CONACyT under this program

In the Press: [UH News](#) [The Daily Cougar](#) [UH Provost Office](#)

M.S. Program Coordinator

- The Mechanical Engineering Technology department cancelled the M.S. program and I reinitiate it in 2009
- Graduate program coordinator from 2009-2014

UH - Radiation Safety Committee

- Chair 2023 - Present
- Co-Chair 2018 – 2023
- Committee member 2013 - Present

REVIEWER SERVICE

	<u>Proposals</u>	
2015 - Present	National Science Foundation	USA
2009 - 2011	Civilian Research and Development Foundation for the Independent States of the Former Soviet Union	USA
2011	National Science Engineering Research Council	Canada
2011 - 2012	National Authority for Scientific Research	Romania
2015	Partnership Social Sciences and Technology foundation (STW) and Netherlands Organization for Scientific Research (NOW) ProRail	Netherlands
2018 - Present	Oak Ridge National Laboratory	USA

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Books

2015	Metallurgical Design from Prehistory to the Space Age, B. Kaufman and C. L. Briant (Eds.), Springer Nature	USA
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Peer Review Journals (>35)

2003 – Present	Advanced Engineering Materials, Carbon, Catalysis Today, Composites Part B: Engineering, Current Science, International Journal of Applied Ceramic Technology, Journal of ASTM International, Journal of Applied Ceramic Technology, Journal of Materials Chemistry and Physics, Journal of Materials Science, Journal of Mechanical Engineering Science, Journal Surface Coatings and Technology, Materials Characterization, Materials and Design, Metallurgical and Materials Transactions, Materials Research Bulletin, Materials Science and Engineering, Materials Today, Metallurgical Transactions, Proceedings of the Institute of Mechanical Engineers, Science Advances, Surface and Coatings Technology, Thermomechanical Acta, Wear	International
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PROFESSIONAL SOCIETIES

- National Academy of Inventors (NAI)
- Microscopy Society of America (MSA)
- The Minerals, Metals, and Materials Society (TMS)
- Materials Research Society (MRS)
- American Railway Engineering and Maintenance of Way Association (AREMA)

AWARDS AND DISTINCTIONS

Selected Scholarships and Fellowships (>\$120K)

- Scholarship from the North American Die Casting Association, 2003
- Five scholarships, American Foundry Society and Foundry Educational Foundation, 2002-2004
- Differential tuition scholarship for international students, Engineering Department, University of Windsor, Ontario, Canada, 2001-2004
- Ph.D. Degree Studies, University of Windsor, Windsor, Ontario, Canada, Consejo Nacional de Ciencia y Tecnología (CONACyT), 2000-2004
- Master 's Degree Studies, National Polytechnic, Mexico City, Consejo Nacional de Ciencia y Tecnología (CONACyT), 1996-1998

Paper Awards

- **F. C. Robles Hernandez**, H.A. Calderon, The Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Conference, Montreal, Quebec, Canada, 2002, **Second Best Poster**.
- **F. C. Robles Hernandez**, S. Cummings, S. Kalay, D. Stone, Development and Evaluation of Advanced Wheel Steels to Prevent Wheel Failures in North American Heavy Haul Operating Environment, International Heavy Haul Conference, Shanghai, China, 2009, **Best Paper Award**.

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- M.A. Mohamed, B. Barnett, **F. C. Robles Hernandez**, J.F. Eberth. Quantifying Elastic Fiber Network Fragmentation Using Raman Spectroscopy, MAES Annual Symposium, Oakland, CA, 2011, **Best Paper Award**.
- **F. C. Robles Hernandez**, N.G. Demas, K. Gonzales, A.A. Polycarpou, Correlation Between Ball-on-disk Test and Full-scale Rail Performance Tests, Wear, 2011, 270, 479-491, **Featured as the 6th most downloaded manuscript in 2011**.
- O. Velazquez-Meraz, J.E. Ledezma-Sillas, **F. C. Robles Hernandez**, J.M. Herrera-Ramirez, Synthesis and Characterization of Chitosan Composites Reinforced with Carbon Nanostructures, International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2016, **Best Paper Award**.
- M. Singh, F. Qin, O.I. Perez Ordoñez, W. Yang, J. Bao, A. Genc, V. G. Hadjiev, **F. C. Robles Hernandez**, Unusual Catalytic Activity of TiO₂-CoTiO₃ under 1064 nm Pulsed Laser Illumination, Catalysis Today, 2019, 349, 3-9, **Invited Paper**.
- Nathaly Castaneda, **Francisco Robles Hernandez**, Venkat Selvamanickam, Goran Majkic, 2D Reel-to-Reel Scanning Raman Spectroscopy of REBCO Conductor for quality control, process control feedback and prediction of In-Field J_c(B,T) Performance, CCA2023, International Workshop on Coated Conductors for Applications, April 4-6, University of Houston, Houston, TX, 2023. **Best Poster Award**.

Presentations Plenary and Keynotes

- R. Ordóñez Olivares, C.I. Garcia, A. DeArdo, S. Kalay, **F. C. Robles Hernandez**, Metallurgy of High Carbon Steels for Railroad Applications, Congreso Internacional de Metalurgia y Materiales, Monclova, Coahuila, Mexico, 2011, **Keynote Speaker**.
- **F. C. Robles Hernandez**, Metallurgy of High Carbon Steels for Railroad Applications, Ferrous and Base Metals Development Network Conference, Magaliesburg, South Africa, 2012, **VIP Keynote Speaker**.
- **F. C. Robles Hernandez**, The Materials and the Science of Advanced Ceramics, UMSNH, Morelia, Michoacan, Mexico, 2017, **Keynote Speaker**.
- **F. C. Robles Hernandez**, The Materials and the Science of the Railways, UMSNH, Morelia, Michoacan, Mexico, 2017, **Keynote Speaker**.
- **F. C. Robles Hernandez**, The Past, the Present, and the Future of the Metallurgy of Railways, Conference of the South African Advanced Materials Initiative, Magaliesburg, South Africa, 2019, **Plenary Speaker**.

Selected Invited Lectures (Presenter in Italics)

- ***F. C. Robles Hernandez***, Solid State Synthesis of Carbon Nanostructures, Dr. A. Alpas' group, University of Windsor, Windsor, Canada, 2009, **Invited Lecture**.
- ***F. C. Robles Hernandez***, Development of an Effective Carbon Nanostructure Reinforcement for Structural Applications, Dr. M. Terrones' group, Pennsylvania State University, 2012, **Invited Lecture**.
- ***F. C. Robles Hernandez***, Pure Elastic Phenomena Induced by a sp² Carbon Allotrope Reinforcement for Advanced Structural Composites, Department of Electrical and Computer Engineering, University of Houston, Houston, TX, 2015, **Invited Lecture**.

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- **F. C. Robles Hernandez**, Pure Elastic Phenomena Induced by a sp² Carbon Allotrope Reinforcement for Advanced Structural Composites, Department of Electrical and Computer Engineering, University of Houston, 2016, *Invited Lecture*.

PUBLICATIONS

Summary

- Patents:
 - Full 4 and 1 pending
 - Record of invention/Provisional patents: 7
- Authored Books: 4
- Edited books: 2
- Journal editorials: 4
- Peer Review Articles: 144
- Peer-Reviewed Conference Proceedings: 27
- Non-Peer review publications (e.g. *ArXiv*): 7
- Conference presentations: 165
- Technical reports: 23

Summary of Citations

- Google Scholar: 212 documents with 5,070 citations, h-index = 33, i10-index = 80
[Link](#)
- Scopus: 133 documents with 4,058 citations, h-index = 28
[Link](#)

Patents

1. **F.C. Robles Hernandez**, Shelton Ray Taylor, Field-applied system and method to produce thermite welds, US17/983,005, Publication of US20230147307A1, 2023, Pending.
2. **F. C. Robles Hernandez**, A. Okonkwo, H.A. Calderon, Synthesis of Effective Carbon Nanoreinforcements for Structural Applications, US10688695B2, 2020.
3. **F. C. Robles Hernandez**, A. Okonkwo, H.A. Calderon, Synthesis of Effective Carbon Nanoreinforcements for Structural Applications, WO2015148781A1, 2015.
4. **F. C. Robles Hernandez**, D.H. Stone, Railroad Steel Having Improved Resistance to Rolling Contact Fatigue, US7559999, 2009.
5. **F. C. Robles Hernandez**, D.H. Stone, Railroad Wheel Steel Having Improved Resistance to Rolling Contact Fatigue, US7591909, 2009.

Records of Invention and Provisional Patents

6. **F. C. Robles Hernandez**, H. Barragan Vargas, R. Cuenca Alvarez, Pulsed Frequency Induction Heater, submitted in October 2024.
7. Z. Fan, **F. C. Robles Hernandez**, S. Risal, S. Milapati, Preparing method of bi-layer mixed ionic-electronic conductor (MIEC) structure from petroleum coke for anode-free all-solid-state lithium metal batteries, submitted in November 2024.

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8. **F. C. Robles Hernandez**, H. Barragan Vargas, R. Cuenca Alvarez, A. Cruz Contreras, Compound Frequency Induction Device Gear Heat Treatment, Application 63/371,332.
9. **F. C. Robles Hernandez**, S. R. Taylor, Field-applied system and method to produce thermite welds, 2023, US Patent Application: 17983005.
10. **F. C. Robles Hernandez**, F.D. Cortes Vega, W. Wang, S.R. Brankovic, Synthesis of Crystals for Advanced Optics Applications, U.S. Patent Application No. 62/537,822, 2017
11. **F. C. Robles Hernandez**, R.S. Taylor, M. Yarali, Thermite Welding Improvements by Means of Vibration for Railway Applications and Elsewhere, 2019.
12. **Francisco C. Robles Hernandez**, S. R. Taylor, Field-Applied System and Method to Produce Thermite Welds, Provisional Patent: 2329-61 PRO, Application number: 63/276,899, 2021.

Books

1. **F. C. Robles Hernandez**, K. Koch, G. Plascencia-Barrera, Rail Base Corrosion Analysis, National Academy of Science, Transportation Research Board, ISBN 978-0-309-43182-8, 2007, pp. 129.
Online: TRB.org
2. **F. C. Robles Hernandez**, A.O. Okonkwo, Laser Cladding of Welds to Improve Railroad Track Safety, Industrial Report for the Federal Railroad Administration, Rail Safety IDEA Project 22, Transportation Research Board of the National Academies, 2015, pp. 26.
Online: TRB.org
3. **F. C. Robles Hernandez**, J.M.H. Ramírez, R. Mackay, Al-Si Alloys: Automotive, Aeronautical, and Aerospace Applications, ISBN 3319583808, Springer, 2017.
Online [Link](#)
4. **F. C. Robles Hernandez**, S. R. Taylor, M. Yarali, F. D. Cortes Vega, Minimization of Weld Failures by Means of Gas and Shrinkage Porosity Reduction, Program, Transportation Research Board, TRB's Transit Cooperative Research Program (TCRP), National Academies, 2022, pp. 37.
Online: TRB.org.
5. J. López Cuevas, M. Herrera Ramírez, **F. C. Robles Hernandez** (Eds.), Proceedings of the 2015 International Materials Research Congress Symposium 6B: Advanced Structural Materials, Materials Research Society, **1812**, 2016.
6. J. López Cuevas, A. García Murillo, **F. C. Robles Hernandez** (Eds.), Proceedings of the 2014 International Materials Research Congress Symposium 4A: Advanced Structural Materials, Materials Research Society, **1765**, 2015.

Book Chapters

7. A.K.P.D. Savio, J. Fletcher, K. Smith, R. Iyer, J. Bao, **F. C. Robles Hernandez**, Effective Visible Light Photodegradation of Paraoxon with Pure and Doped TiO₂, Advanced Catalytic Materials: Current Status and Future Progress, Manuel Ramos Murillo (Ed.), Springer Nature, Oct. 2019, ISBN: 978-3-030-25991-4.
8. J.M. Mendoza Duarte, I. Estrada-Guel, **F. C. Robles Hernandez**, C. Carreño-Gallardo, C. López-Meléndez, R. Martínez-Sánchez, Mechanical and Microstructural Response of an Aluminum Nanocomposite Reinforced with Carbon-Based Particles, Materials Research, 2016, ISSN 1516-1439.

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9. I. Estrada-Guel, **F. C. Robles Hernandez**, R. Martínez-Sánchez, A Green Method for Graphite Exfoliation Using a Mechanochemical Route, Materials Characterization, R. Pérez Campos, A. Contreras Cuevas, R. Esparza Muñoz (Eds.), Springer International Publishing, 2015

Selected Invited Editorial

10. M. A. Ramos Murillo, J. M. Domínguez Esquivel, D. D. González Araiza, **F. C. Robles Hernandez**, Advanced catalytic materials: Nano and bulk, *MRS Communications*, **14**, 1142, 22 July 2024.
Link: [Springer](#)
11. M. A. Ramos, J. M. Dominguez Esquivel, D. D. Gonzales Araiza, **F. C. Robles Hernandez**, Advanced Catalytic Materials: Nano & Bulk, *MRS Communications*, **Special Issue**, 2023.
12. Y. Martinez Rubi, **F. C. Robles Hernandez**, J.M. Herrera Ramirez, J. López Cuevas, J.M. Cabrera Marero, 2020 International Materials Research Congress Symposium 4A: Advanced Structural Materials, *MRS Advances*, **6(41-42)**, International Materials Research Congress, January 2022.
13. J.M. Herrera Ramirez, **F. C. Robles Hernandez**, J. López Cuevas, J.M. Cabrera Marero, Y. Martinez Rubi, 2017 International Materials Research Congress Symposium 4A: Advanced Structural Materials, *MRS Advances*, **3(62)**, 2018.
14. J. López Cuevas, **F. C. Robles Hernandez**, J.M. Herrera Ramirez, J.M. Cabrera Marero, 2015 International Materials Research Congress Symposium A1: Advanced Structural Materials, *MRS Advances*, **2(61)**, 2017.
15. **F. C. Robles Hernandez**, J. López Cuevas, J.M. Herrera Ramirez, J.M. Cabrera Marero, 2016 International Materials Research Congress Symposium D1: Advanced Structural Materials, *MRS Advances*, **2(62)**, 2017.
16. Enrique Barbieri, **F. C. Robles Hernandez**, American Society of Engineering Education Gulf-Southwest Section (ASEE GSW) Annual Conference, Houston, TX, 2011.

Journal Articles Published or Accepted for Publication

1. A. J. Aguilar-Herrera, S. Sarkar, L. Altaweel, P. A. Willson, J. Feng, E. Morshedzadeh, Z. Chen, **F. C. Robles Hernandez**, C. J. Arellano, G. E. Francisco, J.L. Contreras-Vidal, Walking into a New Era of Soft Exoskeletons for Children with Cerebral Palsy (A Humanitarian Impact of Electron Device Technologies and Applications), *IEEE Electron Devices Magazine*, 2025. In Press.
2. M. Gong, B. Liu, A. Shultz, R. C. Schmitz, H. Barragan Vargas, S. Alzahrani, **F. C. Robles Hernandez**, A. Olson, J. Z. Wu, Decoupling of Photocurrent and Dark Current for Extraordinary Detectivity in Uncooled Middle-Wavelength Infrared Nanohybrid Photodetectors, *ACS Nano*, 2025, **19(9)**, 8520-8538.
3. Y. Zhou, H. N. Nguyen, J. Peña-Bahamonde, **F. C. Robles Hernandez**, L. Jandelli Gimenes, D. F. Rodrigues, The role of secondary metabolites in the production of CuO nanoparticles by fungi: a physiological and metabolic approach, *Environmental Science: Nano*, Royal Society of Chemistry, 2024, **11**, 4487-4500.
4. M. Chirom, C. Qin, F. Lin, A. Lim, S. Baldelli, **F. C. Robles Hernandez**, D. Liu, V. G. Hadjiev, X. Shan, S. Louie, J. Bao, Non-contact thermometer for measuring surface temperature of photothermal catalysts using near-infrared black-body radiation spectrum, *Device*, 2024, **2(9)**, 100467.
In the Press: [UH News](#)

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5. M. Dang Nguyen, L. Deng, J. M. Lee, K. M. Resendez, M. Fuller, S. Hoijang, **F. C. Robles Hernandez**, C.-W. Chu, D. Litvinov, V. G. Hadjiev, S. Xu, M.-H. Phan, T. R. Lee, Magnetic Tunability via Control of Crystallinity and Size in Polycrystalline Iron Oxide Nanoparticles, *Small*, 2024, 2402940.
6. N. Castaneda, G. Majkic, C. Goel, **F. C. Robles Hernandez**, V. Selvamanickam Scanning Raman Spectroscopy Characterization of 1 Meter Long REBCO Coated Conductor, *IOP Conference Series: Materials Science and Engineering*, 2024, **1302(1)**, 012012.
7. A. Shultz, B. Liu, M. Gong, **F. C. Robles Hernandez**, J. Wu, Pixel Geometry Effect on PbS Quantum Dot/Graphene Nanohybrid Broadband Photodetectors, *Advanced Optical Materials*, 2024, **12(13)**, 2302675.
8. A. Shultz, B. Liu, M. Gong, H. Barragan Vargas, **F. C. Robles Hernandez**, J. Z. Wu, Probing the Critical Role of Interfaces for Superior Performance in PbS Quantum Dot/Graphene Nanohybrid Broadband Photodetectors, *ACS Applied Materials & Interfaces*, 2024, **16(16)**, 21302-21310.
9. N. M. Chaudhari, F. Alvarez Ramirez, N. Castaneda, S. R. Brankovic, **F. C. Robles Hernández**, Solid-State Synthesis of Graphene by Induction Heating, *Crystal Growth & Design*, 2024, **24(4)**, 1560-1569.
10. S. Risal, F. Wang, C. Wu, S. Risal, **F. C. Robles Hernandez**, X. Shan, W. Zhu, Y. Yao, Z. Fan, Review on recent progress of mixed ion and electron conductive type interlayers for all-solid-state lithium metal batteries, *Carbon*, 2023, **213**, 118225.
11. N. Fernando, H. Kannan, **F. C. Robles Hernandez**, P. M. Ajayan, A. Meiyazhagan, A. M. Abdelkader, Graphitic nanostructure integrated NiO composites for high-performance lithium-ion batteries, *Journal of Energy Storage*, 2023, **71**, 108015.
12. H.A. Calderon, Z. Fan, R. Samprash, **F. C. Robles Hernandez**, Electron Microscopy of Carbon Soots for Battery Applications, *Microscopy and Microanalysis*, 2023, **29(1)**, 110-120.
13. C. Wu, B. Emley, A. Qing, L. Zhao, **F.C. Robles Hernandez**, H. Guo, Y. Liang, J. Lou, Y. Yao, Z. Fan Understanding the Chemomechanical Function of the Silver–Carbon Interlayer in Sheet-type All-Solid-State Lithium–Metal Batteries, *Nano Letters*, 2023, **23(10)**, 4415-4422.
14. J. Xu, L. Kaufman, **F.C. Robles Hernández**, A. Pramanik, G. Babu, J. Nanda, B. D McCloskey, P. M. Ajayan, Effects of Ball Milling on the Electrochemical Capacity and Interfacial Stability of Li₂MnO₃ Cathode Materials, *ACS Applied Energy Materials*, 2023, **6(9)**, 5026–5036.
15. M.A. Zafar, Y. Liu, **F. C. Robles Hernandez**, O.K. Varghese, M.V. Jacob, Plasma-Based Synthesis of Freestanding Graphene from a Natural Resource for Sensing Application, *Advanced Materials Interfaces*, 2023, **10**, 2202399.
16. W. Tang, T. Yang, C.A. Morales-Rivera, X. Geng, V.K. Srirambhatla, A.J. Florence, H. Mo, H.A. Calderon, C. Kisielowski, **F. C. Robles Hernandez**, X. Zou, G. Mpourmpakis, J.D. Rimer, Tautomerism unveils a self-inhibition mechanism of crystallization, *Nature Communications*, 2023, **4(561)**, 1-13.
17. C. Madhusa, T. Jayasundara, I. Munaweera, C. Perera, G. Wijesinghe, M. Weerasekera, C. Sandaruwan, A. Meiyazhagan, **F. C. Robles Hernandez**, P.M. Ajayan, N. Kottegoda, Synthesis and structural characterization of copper nanoparticles doped activated carbon derived from coconut coir for drinking water purification, *Materials Today Chemistry*, 2023, **27**, 101312.

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18. N. Castaneda, G. Majkic, **F. C. Robles Hernandez**, V. Selvamanickam, Correlation between Critical Current Density and Raman Spectra of Tetragonal REBCO, IEEE transactions on applied superconductivity special edition ASC 2022, 2023, **3(5)**, 1-6.
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10. *M. C. Belduque Correa*, H. Barragan Vargas, A. Lim, R. Cuenca Alvarez, S. R. Taylor, **F. C. Robles Hernandez**, Minimization of Weld Failures by means of Gas and Shrinkage Porosity Reduction, International Materials Research Congress, Cancun Quintana Roo, Mexico, August 13-17, 2023.
11. **F. C. Robles Hernandez**, *M. C. Belduque Correa*, H. Barragan Vargas, S. Risal, R. Cuenca Alvarez, S. R. Taylor, Z. Fan, H. Peelaers, K. Alba, J. Wu, J. Meen, *N. Quintero*, G. Majkic, Workflow of Characterization for Electron Microscopy, International Materials Research Congress, Cancun Quintana Roo, Mexico, August 13-17, 2023.
12. *H. A. Calderon Benavides*, J. D. Rimer, **F. C. Robles Hernandez**, C. Kisielowski, Electron Microscopy of Crystalline Arrangements of Molecules in Ammonium Urates, International Materials Research Congress, Cancun Quintana Roo, Mexico, August 13-17, 2023.

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13. J. K. Meen, **F. C. Robles Hernandez**, N. Castaneda, D. C. Barker, C. Stowe, A. Patterson, M. Soto, K. Müller, Nanopopulation of Lunar Regolith 74221,2 is Decidely Non-Basaltic, Haeundae-gu, Busan, Republic of Korea (48060), September 10-15, 2023.
14. *W. Tang*, N. Castaneda, Calderon, Hector, C. Kisielowski, J. Rimer, **F. C. Robles Hernandez**, Low Dose-Transmission Electron Microscopy other Microscopy Characterization of Ammonium Urate, Haeundae-gu, Busan, Republic of Korea (48060), September 10-15, 2023.
15. S. Risal, Z. Fan, **F. C. Robles Hernandez**, Workflow and In-Situ Characterization for Battery Carbon Using Electron Microscopy, Haeundae-gu, Busan, Republic of Korea (48060), September 10-15, 2023.
16. *N. A. Castaneda Quintero*, Goran Majkic, **F. C. Robles Hernandez**, V. Selvamanickam, Reel to Reel Raman Spectroscopy for in-field Performance Characterization of REBCO Coated Conductors, Cryogenic Engineering Conference & International Cryogenic Materials Conference, Hawaii Convention Center, Jul 9-13, 2023.
17. *Nathaly Castaneda*, **F. C. Robles Hernandez**, Venkat Selvamanickam, Goran Majkic, 2D Reel-to-Reel Scanning Raman Spectroscopy of REBCO Conductor for quality control, process control feedback and prediction of In-Field Jc(B,T) Performance, CCA2023, International Workshop on Coated Conductors for Applications, April 4-6, University of Houston, Houston, TX 2023. **Best Poster Award**
In the Press: [UH News](#)
18. *N. A. Castaneda Quintero*, Goran Majkic, **F. C. Robles Hernandez**, V. Selvamanickam, Reel to Reel Raman Spectroscopy for in-field Performance Characterization of REBCO Coated Conductors, CEC-Applications: Superconducting Systems, CEC/ICMC 2023, Hawaii Convention Center Jul 9-13, 2023.
19. Engineering Zeolite Syntheses with Inorganic Structure-Directing Agents
20. *W. Zhu*, Z. Fan, **F. C. Robles Hernandez**, M. El Nahas, B. Basaran, K. Alba, A. Reyes, First Year Experience from RET Site: High School Teacher Experience in Engineering Design and Manufacturing, ASEE American Society for Engineering Education, Manufacturing Division, Minneapolis, MN, Minneapolis Convention Center, June 26-29, 2022.
21. **F. C. Robles Hernandez**, V. Selvamanickam, G. Majkic, E. Galstyan, H. Cheng, A. Stokes, A. Mikhoyan, Effect of strain and composition of BaZrO₃ nanorods in REBCO superconductors, International Materials Research Congress, Cancun Quintana Roo, Mexico, August 14-19, 2022.
22. *H. A. Calderon Benavides*, J. D, Rimer, **F. C. Robles Hernandez**, C. Kisielowski, Electron Microscopy of Crystalline Arrangements of Organic Molecules in Ammonium Urates, International Materials Research Congress, Cancun Quintana Roo, Mexico, August 14-19, 2022.
23. *H. A. Calderon Benavides*, J. Bao, **F. C. Robles Hernandez**, V. Hadjiev, Z. Wang, The Electron Microscopy of Heterostructures Made of Perovskite Phase in Light Emitting Crystals, International Materials Research Congress, Cancun Quintana Roo, Mexico, August 14-19, 2022.
24. **F. C. Robles Hernandez**, A. Raghatate, O. Velazquez Meraz, V. Balan, J. M. Herrera Ramirez, Sustainable Biocomposites for Structural Applications with Environmental Affinity, International Materials Research Congress, Cancun Quintana Roo, Mexico, August 14-19, 2022.
25. *J. A. Puerta Arciniega*, **F. C. Robles Hernandez**, M. C. Maldonado Orozco, J. Mendoza Hernandez, J. M. Herrera Ramirez, C. Georgina Nava Dino, Development of mortar mixtures based on Portland

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- cement added with PetCoke, International Materials Research Congress, Cancun Quintana Roo, Mexico, August 14-19, 2022.
26. **F. C. Robles Hernandez**, N. Castaneda, G. Majkic, Raman spectroscopy and in-depth characterization of REBCO based superconductors, International Materials Research Congress, Cancun Quintana Roo, Mexico, August 14-19, 2022.
 27. G. Majkic, *N. Castañeda Quintero*, **F. C. Robles Hernandez**, Critical Current Mapping over a Wide Range of Fields and Temperatures of Long Lengths of 2G-HTS Conductor via Scanning Raman Spectroscopy, American Chemical Society, Hawaii Convention Center, Waikiki, HI, Oct. 23-28, 2022.
 28. **F. C. Robles Hernandez**, N. A. Castañeda Quintero, N. Chaudhari, F. Cortes, H. Calderon, V. G. Hadjiev, D. Rodrigues, J. Bao, J. Pena Bahamonde, S. R. Brankovic, Current state of catalysis including synthesis, methods, doping, and characterization: An overview, XXIX International Materials Research Conference , Cancun Quintana Roo, 15-20 August, 2021.
 29. *D. Solanki*, A. Joi, Y. Dordi, **F. C. Robles Hernandez**, S. Brankovic, Applications of Electroless ALD as Future Deposition Method for Semiconductor Industry, XXIX International Materials Research Conference , Cancun Quintana Roo, 15-20 August, 2021.
 30. N. Chaudhari, S. Brankovic, **F. C. Robles Hernandez**, Solid-State Synthesis of Graphene on Polycrystalline Copper, XXIX International Materials Research Conference , Cancun Quintana Roo, 15-20 August, 2021.
 31. *H. A. Calderon Benavides*, J. Rimer, **F. C. Robles Hernandez**, C. Kisielowski, Low Dose Electron Microscopy of Amonium Urates, XXIX International Materials Research Conference , Cancun Quintana Roo, 15-20 August, 2021.
 32. *Z. Qin*, S. Dai, C. Gajjela, C. Wang, V.G. Hadjiev, G. Yang, J. Li, X. Zhong, Z. Tang, Y. Yao, A. Guloy, R. Reddy, D. Mayerich, L. Deng, Q. Yu, G. Feng, H. Calderon, **F. C. Robles Hernandez**, Z.M. Wang, J. Bao, Self-formed of 3D Structure on the Edges of 2D Ruddlesden-Popper Perovskites, Bulletin of the American Physical Society, American Physical Society, M71. 00317, virtual meeting, March 17, 2021.
 33. *C. Wang*, T. Chen, Z. Qin, F. Qin, Y. Wang, Y. Ni, Md. K. Alam, V.G. Hadjiev, **F. C. Robles Hernandez**, H.A. Calderon, G. Yang, J. Yang, Z. Wang, J. Bao, The Edge Emission Origin of 2D Ruddlesden-Popper Perovskite, MRS Spring Meeting, 2021.
 34. *G. Majkic*, E. Galstyan, R. Pratap, M. Kochat, **F. C. Robles Hernandez**, A. Mkhoyan, V. Selvamanickman, Applied Superconductivity Conference, Tampa, FL, 2020.
 35. *C. Wang*, Y. Wang, X. Su, V. G. Hadjiev, S. Dai, Z. Qin, H.A. Calderon, Y. Ni, Q. Li, J. Jian, Md. K. Alam, H. Wang, **F. C. Robles Hernandez**, Y. Yao, S. Chen, Q. Yu, G. Feng, Z. Wang, J. Bao, Origin of Luminescent Centers and Edge States in Low Dimensional Lead Halide Perovskites, MRS Spring Meeting, Phoenix, AZ, November 27-December 4, 2020.
 36. *C. Wu*, S. Xue, Z. Qin, S. Yue, S. Pu, **F. C. Robles Hernandez**, Z. Wang, J. Bao, Activation of g-C3N4 Photocatalysts By a Laser Ablation Treatment, North American Catalysis Society Meeting, Chicago, IL, 2019.
 37. **F. C. Robles Hernandez**, The Past, the Present, and the Future of the Metallurgy of Railways, Conference of the South African Advanced Materials Initiative, Magaliesburg, South Africa, 2019. *Plenary Speaker.*

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38. C. Wu, S. Xue, Z. Qin, S. Yue, S. Pu, **F. C. Robles Hernandez**, Z. Wang, J. Bao, Activation of g-C₃N₄ Photocatalysts By a Laser Ablation Treatment, North American Catalysis Society Meeting, Chicago, IL, June 23-28, 2019.
39. **F. C. Robles Hernandez**, The Past, the Present, and the Future of the Metallurgy of Railways, Conference of the South African Advanced Materials Initiative, Magaliesburg, South Africa, 2019.
Plenary Speaker
40. C. Wang, Y. Wang, X. Su, V.G. Hadjiev, S. Dai, Z. Qin, H. A. Calderon Benavides, Y. Ni, Q. Li, J. Jian, Md. K. Alam, H. Wang, **F. C. Robles Hernandez**, Y. Yao, S. Chen, Q. Yu, G. Feng, Z. Wang, J. Bao, CsPbBr₃ Nanocrystals are Responsible for the Green Emission in Two-Dimensional CsPb₂Br₅, MRS Fall Meeting, Boston, MA, 2019.
41. A. Reyes, M. Galindo, J. Ortiz, **F. C. Robles Hernandez**, Strategies to Promote Materials Science and Engineering: A Community-University Collaboration for Graduate, Undergraduate and K12 Students, AAPT National Meeting, Houston, TX, 2019. *Invited Speaker*
42. W. Yang, F.D. Cortes Vega, S.R. Brankovic, **F. C. Robles Hernandez**, Low Temperature Synthesis of Ruby and its Sensing Applications on Extreme Environments, International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2019.
43. M. Singh, F. Qin, O.I. Perez Ordoñez, W. Yang, J. Bao, A. Genc, V.G. Hadjiev, **F. C. Robles Hernandez**, Electron Microscopy Characterization of TiO₂-CoTiO₃ to Demonstrate its Unusual Catalytic Behavior Under Pulsed Laser Excitation, International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2019.
44. W. Qin, M. D. Patton, D. Fu, T.T. Le, M. Filez, J. E. Schmidt, **F. C. Robles Hernandez**, B. M. Weckhuysen, J. D. Rimer, Controlling Silicon and Aluminum Zoning in ZSM-5 for Improved Performance in the Methanol-to Hydrocarbon Reaction, Talk #0920, North American Catalysis Society Meeting, Chicago, IL, USA, 2019.
45. M. Singh, F. Qin, O.I. Perez Ordoñez, W. Yang, J. Bao, V.G. Hadjiev, **F. C. Robles Hernandez**, Second Harmonic Generation as the Potential Source to Trigger the Photocatalytic Activity of TiO₂-CoTiO₃, International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2019.
46. H.A. Calderon, X. Geng, J. Rimer, H. Hashiguchi, K. Sakhaee, V. Garibay Febles, **F. C. Robles Hernandez**, Low Dose Analysis of Ammonium Urates, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 18-23, 2019.
47. H.A. Calderon, O. Velazques Meraz, L. Echegoyen, **F. C. Robles Hernandez**, Mechanical Synthesis of Fullerene-Graphene/Morphed Graphene Architectures, Microscopy and Microanalysis Annual Meeting, Portland, OR, August 4-8, 2019.
48. **F. C. Robles Hernandez**, K. Ahmadi, A. Stokes, J. McNeil, S.R. Brankovic, Atomic Resolution Characterization of Cr Thin Films Produced from Cr³⁺ Electrolytes, Microscopy and Microanalysis Annual Meeting, Portland, OR, August 4-8, 2019.
49. H.A. Calderon, J. Bao, Y. Wang, V. Hadjiev, **F. C. Robles Hernandez**, Low Dose TEM on the Degradation of the MAPbI₃ Perovskite, Microscopy and Microanalysis Annual Meeting, Portland, OR, August 4-8, 2019.
50. W. Yang, F.D. Cortes Vega, S.R. Brankovic, G. Majkic, S. Selvamanickam, **F. C. Robles Hernandez**, Ruby Thin Films for Residual Stress Sensing on Tapes and other Electronic Substrates, Euromat, Stockholm, Sweden, September 1-5, 2019.

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51. N.M. Chaudari, S.R. Brankovic, **F. C. Robles Hernandez**, Solid State Synthesis of Highly Crystalline Graphene from Single to Multi-Layer Graphene and their Composites, Euromat, Stockholm, Sweden, September 1-5, 2019.
52. G. Zouridakis, **F. C. Robles Hernandez**, A. Ambler, Ongoing Transformation in Technology Education: Attracting the Next Generation of Graduate Students, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 19-24, 2018.
53. **F. C. Robles Hernandez**, H.A. Calderon, F. Alvarez Ramirez, R. Ordonez, V.G. Hadjiev, Effective Reinforcement of Carbon-Carbon Composites Using Morphed Graphene, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 19-24, 2018. *Invited Speaker*
54. A. Reyes, J. Ortiz, **F. C. Robles Hernandez**, Strategies to Promote Materials Science and Engineering for Graduate, Undergraduate and K12 Students, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 19-24, 2018. *Invited Speaker*
55. **F. C. Robles Hernandez**, M. Singh, O.I. Pérez Ordonez, F. Qin, J. Bao, D. Gostovic, Pulse Laser Active TiO₂-CoTiO₃ Catalysts for Energy Applications, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 19-24, 2018. *Invited Speaker*
56. H.A. Calderon, F. Alvarez Ramirez, R. Ordoñez Olivares, V. Hadjiev, **F. C. Robles Hernandez**, Effective Reinforcement of Carbon-Carbon Composites Using Morphed Graphene, XXVII International Materials Research Congress, Cancun, Mexico, August 19-24, 2018.
57. **F. C. Robles Hernandez**, M. Singh, O.I. Pérez Ordonez, F. Qin, J. Bao, D. Gostovic, Pulse Laser Active TiO₂-CoTiO₃ Catalysts for Energy Applications, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 19-24, 2018.
58. H.A. Calderon, D.A. Barber, F. Alvarez Ramirez, R. Ordoñez Olivares, V. Hadjiev, **F. C. Robles Hernandez**, Effective Reinforcement of Carbon-Carbon Composites using Morphed Graphene, Microscopy and Microanalysis Annual Meeting, Baltimore, MD, August 5-9, 2018.
59. M. Singh, F. Qin, W. Yang, J. Bao, A. Genc, **F. C. Robles Hernandez**, Sunlight Active Perovskites (TiO₂-CoTiO₃) with Effective Dye Degradation and Water Splitting, Microscopy and Microanalysis Annual Meeting, Baltimore, MD, 5-9, 2018.
60. J.M. Mendoza-Duarte, **F. C. Robles Hernandez**, C. Carreño-Gallardo, I. Estrada-Guel, R. Martínez-Sánchez, Al-Graphite Composites Prepared by Pulvimetalurgy Applying an Innovative Sintering Route, Which Avoids Carbides Formation, Microscopy and Microanalysis Annual Meeting, Baltimore, MD, 5-9, 2018.
61. J.M. Mendoza-Duarte, **F. C. Robles Hernandez**, C.G. Garay-Reyes, I. Estrada-Guel, R. Martínez-Sánchez, An Al-Li Powder Alloy Prepared by Mechanical Milling and Sintered Using High Frequency Induction, Microscopy and Microanalysis Annual Meeting, Baltimore, MD, August 5-9, 2018.
62. J.M. Mendoza-Duarte, **F. C. Robles Hernandez**, C.G. Garay-Reyes, I. Estrada-Guel, R. Martínez-Sánchez, An Eco Friendly Mechanochemical Alternative Route for Exfoliated Graphite preparation, Microscopy and Microanalysis Conference, Baltimore, MD, August 5-9, 2018.
63. **F. C. Robles Hernandez**, M. Singh, O.I. Perez Ordoñez, J.A. Bao, F. Qin, Sunlight Active Perovskite (Co-Ti-O) with Effective Degradation Activity for Organic Dyes, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 20-25, 2017.

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64. **F. C. Robles Hernandez**, O. Velazques Meraz, L.A. Echegoyen, HRTEM Characterization of Graphene – Fullerene Composites, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 20-25, 2017.
65. **F. C. Robles Hernandez**, M. Singh, O.I. Perez Ordoñez, J.A. Bao, F. Qin, N.N. Eldin, HRTEM Characterization of Water Splitting Catalysts, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 20-25, 2017.
66. **F. C. Robles Hernandez**, I. Estrada-Guel, H.A. Calderon, F. Alvarez- Ramírez, V.G. Hadjiev, Morphed Graphene Nanostructures: Synthesis and Applications, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 20-25, 2017.
67. *J.M. Mendoza-Duarte*, **F. C. Robles Hernandez**, I. Estrada-Guel, R. Martínez-Sánchez, Aluminum Sintering in Air Atmosphere Using High Frequency Induction Heating, Microscopy and Microanalysis Annual Meeting, St. Louis, MO, August 6-10, 2017.
68. *O. Velazquez-Meraz*, A. Tejeda-Ochoa, J.E. Ledezma-Sillas, C. Carreño-Gallardo, **F. C. Robles Hernandez**, J.M. Herrera-Ramirez, Effect of Fullerene Soot on the Mechanical Properties of Chitosan, Microscopy and Microanalysis Annual Meeting, St. Louis, MO, August 6-10, 2017.
69. *J.M. Mendoza-Duarte*, **F. C. Robles Hernandez**, C. Carreño-Gallardo, I. Estrada-Guel, R. Martínez-Sánchez, Microstructural Changes in Aluminum Mechanically Milled Sintered by Conventional Method and Induction, Microscopy and Microanalysis, St. Louis, MO, August 6-10, 2017.
70. **F. C. Robles Hernandez**, J. Ortiz, The University of Houston – Mexico Partnership, Universidad Michoacana de San Nicholas of Hidalgo, Morelia, Michoacán, Mexico, December 2017.
71. **F. C. Robles Hernandez**, The Materials and the Science of Advanced Ceramics, Universidad Michoacana de San Nicholas of Hidalgo, Morelia, Michoacán, Mexico, December 2017. **Keynote Speaker**
72. **F. C. Robles Hernandez**, The Materials and the Science of the Railways, Universidad Michoacana de San Nicholas of Hidalgo, Morelia, Michoacán, Mexico, December 2017, **Keynote Speaker**
73. *J.M. Mendoza-Duarte*, **F. C. Robles Hernandez**, I. Estrada-Guel, C. Carreño-Gallardo. R. Martínez-Sánchez, Aluminum Nanocomposites Reinforced with Graphite: A Densification and Mechanical Response Study, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 14-19, 2016.
74. *I. Estrada-Guel*, A.O. Okonkwo, **F. C. Robles Hernandez**, In Situ Transformation of Amorphous Soot into Carbon-Nanostructures by High-Energy Ball Milling, Microscopy and Microanalysis Annual Meeting, Columbus, OH, July 24-28, 2016.
75. H.A. Calderon, F. Alvarez Ramirez, I. Estrada-Guel, V.G. Handjiev, **F. C. Robles Hernandez**, Electron Microscopy of Morphed Graphene Nanostructures Synthesized by Mechanical Milling, Microscopy and Microanalysis Annual Meeting, Columbus, OH, July 24-28, 2016.
76. **F. C. Robles Hernandez**, H.A. Calderon, I. Estrada-Guel, A.A. Okonkwo, A.F. Alvarez- Ramírez, V.G. Hadjiev, The Unfold of the Morphed Graphene, from Amorphous Carbon to Morphed Graphenes, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2016.
77. **F. C. Robles Hernandez**, I. Estrada-Guel, H.A. Calderon, F. Alvarez- Ramírez, V.G. Hadjiev, Morphed Graphene Nanostructures: Experimental Evidence for Existence, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2016.

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78. **F. C. Robles Hernandez**, C. Mirabal, D.A. Pepe, S.A. Sirsat, R. Iyer, J.A. Neal, Photo-Enhancement of TiO_2 by the Co-Catalytic Influence of CoO , International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2016.
79. *F. Daniel Cortes Vega*, J. Zarate Medina, **F. C. Robles Hernandez**, P. Martinez Torres, Stabilization of Gold Nanoparticles on Pseudoboehmite for its Possible Surface Enhanced Raman Scattering, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2016.
80. *F.D. Cortés-Vega*, J. Zarate-Medina, **F. C. Robles Hernandez**, Mechanical Milling on the Formation of a Solid Solution in the System Pseudoboehmite- Cr_2O_3 , International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2016.
81. *O. Velazquez-Meraz*, J.E. Ledezma-Sillas, **F. C. Robles Hernandez**, J.M. Herrera-Ramirez, Synthesis and Characterization of Chitosan Composites Reinforced with Carbon Nanostructures, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2016, **First Prize**
82. *O.I. Pérez-Ordóñez*, A. Tejeda-Ochoa, J.E. Ledezma-Sillas, L.E. Fuentes-Cobas, **F. C. Robles Hernandez**, J.M. Herrera-Ramírez, Synthesis and Mechanical Properties of a Geopolymeric Paste, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2016.
83. *A. Tejeda-Ochoa*, O.I. Perez Ordoñez, **F. C. Robles Hernandez**, J.M. Herrera-Ramirez, Thermal Analysis of Sodium Silicate Synthesis and its Microstructural Characterization, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2016.
84. *P. Jagadale*, **F. C. Robles Hernandez**, D. Demarchi1, A. Tagliaferro, Improving Composite Properties and Biosensor Sensitivity Using Low-Cost Nanostructured Carbons, International Microprocesses and Nanotechnology Conference, Toyama, Japan, November 10-13, 2015. **Invited Speaker**
85. **F. C. Robles Hernandez**, A.O. Okonkwo, I. Estrada-Guel, S. Brankovic, H.A. Calderon, F. Alvarez-Ramírez, Room Temperature Synthesis of Graphene/Graphitic Carbon Nanostructures with a Unique Sp^2 Cross-Linked Bonding, Euromat, Warsaw, Poland, September 15-18, 2015.
86. **F. C. Robles Hernandez**, H.A. Calderon, D. Barber, A. Okonkwo, J. Quintero, R. Ordoñez Olivares, V. Hadjiev, F. Alvarez- Ramírez, Unprecedented Elastic Behavior Induced y In Situ Reinforced All Carbon Composites, Euromat, Warsaw, Poland, September 15-18, 2015
87. *J. Nguyen*, J. Neal, T. Randall Lee, **F. C. Robles Hernandez**, Unprecedented Growth of Rod-Like Nanostructures in Irradiated Wine Corks, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2015.
88. *A.O. Okonkwo*, I. Estrada-Guel, V.G. Hadjiev, H.A. Calderon, F. Alvarez- Ramírez, **F. C. Robles Hernandez**, Synthesis of Graphene/Graphitic Carbon Nanostructures with a Unique Sp^2 Cross-Linked Bonding, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2015.
89. A.K.P.D. Savio, J. Fletcher, K. Smith, R. Iyer, J. Bao, **F. C. Robles Hernandez**, Enhanced Photo-Degradation of Paraoxon by the Co-Catalytic Effect of Co and Rh TiO_2 , International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2015.
90. *O.A. Herrera-Sanchez*, **F. C. Robles Hernandez**, J.E. Ledezma-Sillas, A. Tejeda-Ochoa, J.M. Herrera-Ramirez, Aluminum-Fullerene Soot Composite Produced by Mechanical Milling, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2015.
91. *I. Estrada-Guel*, A. Okonkwo, E. Obiri, A. Guloy, **F. C. Robles Hernandez**, Rapid Induction Pressure-Less Sintering of Graphitic Nanostructures with Cross-Link SP^2 Bonding, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2015.

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92. *A. Tejada-Ochoa*, F.J. Baldenebro-Lopez, **F. C. Robles Hernandez**, J.M. Herrera-Ramirez, Influence of Sodium Silicate Synthesis by Silica Sand in the Mechanical Properties of Geopolymer, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2015.
93. *J. Nguyen*, J. Neal, T.R. Lee, **F. C. Robles Hernandez** Unprecedented Growth of Rod-Like Nanostructures in Irradiated Wine Corks, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2015.
94. *S.S. Pei*, Y.T. Lin, K.P. Huang, S.C. Chang, S.R. Xing, **F. C. Robles Hernandez**, R. Beisenov, Z. Mansurov, CVD Graphene and 2D Transition Metal Dichalcogenides, International Symposium on Nanotech, Energy and Space, San Antonio, TX, May 12-14, 2015. **Invited Speaker**
95. *S.-C. Chang*, S. Xing, **F. C. Robles Hernandez**, S.-S. Pei, Microwave Plasma Enhanced CVD Graphene-Based Aerogels: Synthesis and Study, Carbon, Dresden, Germany, July 12-17, 2015.
96. *I. Estrada-Guel*, A.O. Okonkwo, **F. C. Robles Hernandez**, Graphene Related Nanostructures Synthesized by High-Energy Ball Milling, Microscopy and Microanalysis Conference, Portland, OR, August 2-6, 2015.
97. *H.A. Calderon*, Y. Liang, H.D. Yoo, Y. Li, S. Jing, **F. C. Robles Hernandez**, Y. Yao, Low Dose Electron Microscopy of Interlayer Expanded Molybdenum Disulfide Nanocomposites, Microscopy and Microanalysis Conference, Portland, August 2-6, OR, 2015.
98. *J. Bao*, S. Baldelli, **F. C. Robles Hernandez**, R. Zhifeng, Efficient Solar Water-Splitting using a Nanocrystalline CoO Photocatalyst, Conference in Artificial Photosynthesis, Cocoyoc, Mexico, Morelos, Mexico, November 2-6, 2014. **Invited Speaker**
99. **F. C. Robles Hernandez**, A.K.P.D. Savio, J. Fletcher, R. Iyer, J. Bao, Overview of the Synthesis and Catalytic Activity of TiO₂, Conference in Artificial Photosynthesis, Cocoyoc, Mexico, Morelos, Mexico, November 2-6, 2014. **Invited Speaker**
100. **F. C. Robles Hernandez**, H.A. Calderon, D. Barber, A. Okonkwo, J. Quintero, R. Ordoñez Olivares, V. Hadjiev, F. Alvarez, Unprecedented Elastic Behavior Induced by In Situ Reinforced All Carbon Composites, Monclova, Mexico, Congreso Internacional de Metalurgia y Materiales, November 2, 2014.
101. *I. Estrada-Guel*, **F. C. Robles Hernandez**, R. Martínez-Sánchez, A Green Method for Graphite Exfoliation Using a Mechanochemical Route, Microscopy and Microanalysis Conference, Hartford, CT, August 3-7, 2014.
102. *I. Estrada-Guel*, **F. C. Robles Hernandez**, R. Martínez-Sánchez, A Green Method for Graphite Exfoliation, Effect of Milling Intensity, Microscopy and Microanalysis Conference, August 3-7, Hartford, CT, 2014.
103. *Y. Wang*, S. Xing, X. Lu, **F. Robles Hernandez**, S.-S. Pei, J. Bao, Twisted Bilayer Graphene with Controlled Rotation Angles, American Physical Society, Denver, CO, March 3-7, 2014.
104. *J. Nguyen*, J.A. Neal, **F. C. Robles Hernandez**, T. R. Lee, Prevalence of Nanotubes in Irradiated Food Packaging and the Potential Impact on Health, ACS National Meeting & Exposition, Dallas, TX, March 16-20, 2014.
105. *A.O. Okonkwo*, P. Jagdale, A. Tagliaferro, V.G. Hadjiev, **F. C. Robles Hernandez**, Development of Cost-Effective Structural Material Reinforced with Complex Carbon Nanostructures For Multiple Applications, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 17-21, 2014.

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106. A.O. Okonkwo, V. Kadekar, T. Metz, D. Gutscher, **F. C. Robles Hernandez**, Laser Processing to Improve Track Safety, Ridership and Efficiency, International Materials Research Congress, Cancun, Mexico, August 17-21, 2014.
107. E. Obiry, A.O. Okonkwo, A. Guloy, **F. C. Robles Hernandez**, A Comparison of Different Sintering Methods in the Development of Al₂O₃ Nanostructured Composites Reinforced with Carbon Nanostructures, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 17-21, 2014.
108. V. Gómez Flores, P.E. García Casillas, K.Y. Castrejón Parga, C.C. Gonzalez, A. Jimenez Pérez, **F. C. Robles Hernandez**, Polymeric Biomaterials Reinforced with Nanometer Carbon and Magnetite, ISMANAM, Cancun, Quintana Roo, Mexico, August 17-21, 2014.
109. H.A. Calderon, D. Barber, F. Alvarez Ramirez, A. Okonkwo, J. Quintero, R. Ordoñez Olivares, V. Hadjiev, **F. C. Robles Hernandez**, Pure Elastic Phenomena in all Carbon Composites and Applications, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 11-15, 2013.
110. J.F. Eberth, C.N. Brysch, M. Paterson, R. Ordoñez Olivares, **F. C. Robles Hernandez**, Chitosan and Chitosan Composites Reinforced with Carbon Nanostructures, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 11-15, 2013.
111. A.K.P.D. Savio, J. Fletcher, R. Iyer, **F. C. Robles Hernandez**, Photodegradation of Paraoxon using Doped Sonosynthesized TiO₂, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 11-15, 2013.
112. H.A. Calderon, D. Barber, A. Okonkwo, J. Quintero, R. Ordoñez Olivares, V.G. Hadjiev, **F. C. Robles Hernandez**, Effective Reinforcement in Carbon-Carbon Composites, ISMANAM, Turin, Italy, June 30-July 5, 2013.
113. A. Okonkwo, D. Gutscher, **F. C. Robles Hernandez**, Laser Cladding of Welds to Improve Railroad Track Safety, ISMANAM, Turin, Italy, June 30-July 5, 2013.
114. C.N. Brysch, M. Paterson, R. Ordoñez Olivares, J.F. Eberth, **F. C. Robles Hernandez**, Chitosan and Chitosan Composites Reinforced with Carbon Nanostructures, ISMANAM, Turin, Italy, June 30-July 5, 2013.
115. J. Bao, L. Liao, Q. Zhang, Z. Su, X. Lu, D. Wei, G. Feng, Q. Yu, X. Cai, **F. C. Robles Hernandez**, S. Baldell, Nanocrystalline CoO as an Efficient Photocatalyst for Total Water Splitting Driven by Visible Light, ACS National Meeting, New Orleans, LA, April 7-11, 2013.
116. J. Bao, L. Liao, Q. Zhang, Z.Z. Su, D. Wei, Q. Yu, S. Baldelli, **F. C. Robles Hernandez**, X. Cai, Nanocrystalline CoO as an Efficient Photocatalyst for Total Water Splitting Driven by Visible Light, MRS Spring Meeting, San Francisco, CA, April 1-5, 2013.
117. Z. Su, Y. Wang, W. Wu, S. Xing, X. Lu, X. Lu, S. Pei, **F. C. Robles Hernandez**, V.G. Hadjiev, J. Bao, 2D Line Enhancement by Quantum Interference in Graphene Superlattice, American Physical Society, Baltimore, MD, March 18-22, 2013.
118. Y. Wang, Z. Su, W. Wu, S. Xing, X. Lu, X. Lu, S. Pei, **F. C. Robles Hernandez**, V. Hadjiev, J. Bao, Folded Optical Phonons in Twisted Bilayer Graphene: Raman Signature of Graphene Superlattices, American Physical Society, Baltimore, MD, March 18-22, 2013.
119. N. Badi, J. Kodali, **F. C. Robles Hernandez**, A. Okonkwo, M. Hobosyan, K.S. Martirosyan, Low-Cost Carbon-Silicon Nanostructures for High Performance Electrochemical Anode Materials, Nanotech Conference and Expo, Washington D.C., May 12-16, 2013.

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120. N. Badi, R. Mekala, **F. C. Robles Hernandez**, Synthesis of Al-Al₂O₃/PVDF Core-Shell Nanodielectrics for Energy Storage Applications, Nanotech Conference and Expo, Washington D.C., May 12-16, 2013.
121. J. Bao, Y. Wang, Z. Su, W. Wu, S. Nie, X. Lu, X. Lu, S. Xing, H. Wang, K. McCarty, S. Pei, **F. C. Robles Hernandez**, V. Hadjiev, Bilayer Graphene Superlattices, Southwest Regional ACS, Baton Rouge, Louisiana Meeting, November 4-7, 2012. *Invited Speaker*
122. **F. C. Robles Hernandez**, D. Barber, J. Quintero, A. E. Fals, Solid State Synthesis of Carbon Nanostructures and Applications, Southwest Regional ACS Meeting Baton Rouge, Louisiana, November 4-7, 2012. *Invited Speaker*
123. R. Ordóñez Olivares, C.I. Garcia, **F. C. Robles Hernandez**, Metallurgy of High Carbon Steels for Railroad Applications, Ferrous and Base Metals Development Network Conference, Magaliesburg, South Africa, October 15-17, 2012. *Keynote Speaker*
124. D. Barber, H.A. Calderon, **F. C. Robles Hernandez**, Thermo-mechanical Synthesis of Carbon Nanostructures and Microstructured Diamond, International Conference on Diamond and Carbon Materials, Granada, Spain, September 3-6, 2012.
125. **F. C. Robles Hernandez**, D. Barber, H.A. Calderon, Microscopy Characterization of C Phases Induced by C Soot Ball Milling, International Conference on Diamond and Carbon Materials, Granada, Spain, September 3-6, 2012.
126. A.E. Fals, **F. C. Robles Hernandez**, Multi-Functional Fullerene Soot/Alumina Composites, ASME Conference, Houston, TX, November 9-15, 2012.
127. D. Barber, H.A. Calderon, **F. C. Robles Hernandez**, Synthesis of Carbon Nanostructures by Thermo-Mechanical Means, ASME Conference, Houston, TX, November 9-15, 2012.
128. I.D. Weerasinghe, L. de la Torre Garcia, **F. C. Robles Hernandez**, Transient and Steady State Analysis of a Cross Flow, Gas-Liquid Type Heat Exchanger in an Oil-Fired Mobile Frac Water Heating System, ASME Conference, Houston, TX, November 9-15, 2012.
129. C. Brysch, **F. C. Robles Hernandez**, J.F. Eberth, Sintering of Chitosan and Chitosan Composites, ASME Conference, Houston, TX, November 9-15, 2012.
130. R. Ordóñez Olivares, C.I. Garcia, A. DeArdo, S. Kalay, **F. C. Robles Hernandez**, Metallurgy of High Carbon Steels for Railroad Applications, Congreso Internacional de Metalurgia y Materiales, Monclova, Coahuila, Mexico, 2011. *Keynote Speaker*
131. **F. C. Robles Hernandez**, H.A. Calderon, Composites Reinforced with Carbon Nanostructures an Overview, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 14-19, 2011. *Invited Speaker*
132. I. Santana-Garcia, **F. C. Robles Hernandez**, H.A. Calderon, Metal (Fe-Al)-Fullerene Nanocomposites Made by Powder Metallurgy Methods, TMS Annual Meeting, San Diego, CA, 2011
133. M.A. Mohamed, B. Barnett, **F. C. Robles Hernandez**, J.F. Eberth, Quantifying Elastic Fiber Network Fragmentation Using Raman Spectroscopy, MAES Annual Symposium, Oakland, CA, October 5-8, 2011. *Best Poster Award*
134. M.A. Mohamed, Barnett B, **F. C. Robles Hernandez**, J.F. Eberth, Evaluation of Aortic Elastic Fiber Network Damage, University of Houston, Undergraduate Research Day, Houston, TX, 2011
135. A.J. Corsi, **F.C. Hernandez Robles**, J.A. Neal, Electron Beam Irradiation for the Reduction of 2,4,6 Trichloroanisole in Wine Cork, Institute of Food Technologists Conference, New Orleans, LA, June 11-14, 2011.

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136. A.K.P.D. Savio, **F. C. Robles Hernandez**, New Methodology to Characterize TiO₂ (Anatase:Rutile) for Photo Catalytic Applications, MS&T, Houston, TX, October 17-21, 2010.
137. A. Fals, **F. C. Robles Hernandez**, Development of Hybrid Nanostructured Alumina-Shape Memory-Carbon Nanoparticles Composites, MS&T, Houston, TX, October 17-21, 2010.
138. **F. C. Robles Hernandez**, Comparison among Chemical and Electromagnetic Stirring and Vibration Melt Treatments for Al-Si Hypereutectic Alloys, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 15-20, 2010. *Invited Speaker*
139. U. Aldea, J. Neal, **F. C. Robles Hernandez**, Advance Food Safety Control by Means of Thermal Analysis, Undergraduate Research Day, University of Houston, Houston, TX, 2009.
140. **F. C. Robles Hernandez**, H.A. Calderon, Synthesis of Fullerene on Fe-C Composites by Spark Plasma Sintering and Thermomechanical Transformation of Fullerene to Diamond, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 16-20, 2009. *Invited Speaker*
141. **F. C. Robles Hernandez**, K. Gonzales, S. Anankitpaiboon, N.G. Demas, A.A. Polycarpou, Wear Performance of Premium Rail Steels, International Conference on Contact Mechanics and Wear of Rail/Wheel Systems, Firenze, Italy, September 15-18, 2009.
142. **F. C. Robles Hernandez**, H.A. Calderon, Production of Metal Matrix Composites with C_{Fullerene} and C_{Graphite} Reinforcements, TMS Annual Meeting, San Francisco, CA, February 15-19, 2009.
143. L. González-Reyes, I. Hernandez-Pérez, H. Dorantes Rosales, E.M. Arce-Estrada, **F. C. Robles Hernandez**, Synthesis of Nanostructured Anatase and its Grain Size Effect on Catalytic Properties, TMS Annual Meeting, San Francisco, CA, February 15-19, 2009.
144. L. González-Reyes, I. Hernandez-Pérez, H. Dorantes Rosales, E.M. Arce-Estrada, **F. C. Robles Hernandez**, Effect of Surface Area of Sonochemical Synthesize Anatase on Catalytic Activity, TMS Annual Meeting, San Francisco, CA, February 15-19, 2009.
145. L. Gonzalez Reyes, I. Hernandez-Pérez, **F. C. Robles Hernandez**, J. de J. Cruz Rivera, E.M. Arce-Estrada, Characterization of Anatase Synthesized by Sonochemical Means and Effects of Heat Treatments, TMS Annual Meeting, Orlando, FL, February 25-March 1, 2008.
146. L. Gonzalez Reyes, I. Hernandez-Pérez, **F. C. Robles Hernandez**, H. Dorantes Rosales, E.M. Arce-Estrada, Sonochemical Synthesis of Nanostructured Anatase and Study of the Kinetics among Phase Transformation and Coarsening as a Function of Heat Treatment Conditions, TMS Annual Meeting, Orlando, FL, February 25-March 1, 2008.
147. **F. C. Robles Hernandez**, G. Plascencia-Barrera, Rail Base Corrosion, TMS Annual Meeting, Orlando, FL, February 25-March 1, 2008.
148. **F. C. Robles Hernandez**, V.S. Sura, L. Liu, Y. Liu, S. Mahadevan, D.H. Stone, Investigation of the Effect of Defects on Wheel Fatigue Performance Life, International Wheel Set Congress, Prague, Czech Republic, September 23-27, 2007.
149. **F. C. Robles Hernandez**, D. Stone, Strategies to Prevent HAL Wheel Failures and Steel Development for Railroad Applications, BNSF Wheel Shelling and Failure Prevention Meeting, Topeka, KS, 2007.
150. **F. C. Robles Hernandez**, Strategies to Prevent HAL Wheel Failures, Annual Research Review, Association of American Railroads-TTCI, Pueblo, CO, 2007.
151. **F. C. Robles Hernandez**, J. LoPresti, D. Davis, L. Maal, Mechanical Properties and Wear Performance of Premium Rail Steels, Transportation Research Bureau, Washington D.C., 2007.

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152. **F. C. Robles Hernandez**, A. Policarpou, L. Maal, Validation of Pure Sliding Wear Experiments as a Screening Method to Predict Wear Performance in Premium Rail Steels, Wear of Materials Conference, Montreal, Quebec, Canada, April 15-17, 2007.
153. **F. C. Robles Hernandez**, A. Policarpou, L. Maal, Validation of Pure Sliding Wear Experiments as a Screening Method to Predict Wear Performance in Premium Rail Steels, Wear of Materials Conference, Montreal, Quebec, Canada, April 15-17, 2007.
154. **F. C. Robles Hernandez**, G. Plascencia-Barrera, D. Jaramillo Vigueras, Study of the Factors that Shortened the Service Life of Rails in Subway Systems across North America, INASMET, San Sebastian, Spain, October 6, 2006.
155. **F. C. Robles Hernandez**, Advanced Rail Steels, FAST Rail Performance, Association of American Railroads-Heavy Axel Load Research Committee-Engineering Research Committee-TTCI Meeting, Pueblo, CO, 2006.
156. **F. C. Robles Hernandez**, D. Gutscher, Gas Pressure Rail Welding, Association of American Railroads-Heavy Axel Load Research Committee-Engineering Research Committee-TTCI Meeting, Pueblo, CO, 2006.
157. **F. C. Robles Hernandez**, Strategies to Prevent Wheel Failures, Vehicle Track Systems-Mechanical Research Committee-TTCI Meeting, Chicago, IL, 2006.
158. **F. C. Robles Hernandez**, J. H. Sokolowski, W. Kasprzak, Electromagnetic Refinement of the 319 Aluminum Structure, Science Forum, Light Metals, 2004.
159. **F. C. Robles Hernandez**, J.H. Sokolowski, W. Kasprzak, Electromagnetic Refinement of the 319 Aluminum Structure, Annual Conference of Metallurgists, Hamilton, Ontario, Canada, August 22-25, 2004.
160. **F. C. Robles Hernandez**, H.A. Calderon, V. Garibay, E. Umemoto, Production and Characterization of Metal-C Composites (Where Metal=Al or Fe and C=Graphite or Fullerene) Obtained from Mechanically Alloyed Powders, TMS Annual Meeting and Exhibition, San Diego, CA, March 2-6. 2003.
161. **F. C. Robles Hernandez**, H.A. Calderon, V. Garibay, E. Umemoto, Production and Characterization of Metal-C Composites Obtained From Mechanically Alloyed Powders, COM Congress, Montreal Canada, April 18-21, 2002. *Invited Speaker*
162. *J. Guerrero-Paz*, **F. C. Robles Hernandez**, R. Martínez-Sánchez, D. Hernandez-Silva, Particle Size Evolution in Non-Adhered Ductile Powders During Mechanical Alloying, ISMANAM, Oxford, UK, July 9-14, 2000.
163. **F. C. Robles Hernandez**, V. Garibay Febles, H.A. Calderon, Characterization of (Al, Fe)-C (Graphite or Fullerene) Composites Prepared by Mechanical Alloying, International Materials Research Congress, Cancun, Quintana Roo, Mexico, August 18-23, 1999.
164. **F. C. Robles Hernandez**, V. Garibay Febles, H.A. Calderon, Caracterización de Compósitos Metal-Grafito y Metal-Fullereno Producidos por Aleado Mecánico, Primer Congreso Nacional de cristalografía, San Luis Potosí, México, 1997.
165. **F. C. Robles Hernandez**, H. Calderon, N. Mota, L. Calzado, Caracterización de Materiales Nanocristalinos Producidos por Aleado Mecánico, Reunión Nacional de Difractometría, Morelia, Mexico, 1996.

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Selected Industrial and Technical Reports

1. **F. C. Robles Hernandez**, D. Davis, K. Myung Lee, A.A. Polycarpou, Microstructure, Mechanical Properties and Wear Performance of Premium Rail Steels, Technology Digest, TD06-032, December 1, 2006.
2. **F. C. Robles Hernandez**, D. Davis, D. Canadinc, H. Sehitoglu, K. Verzal, Analysis of Crack Initiation, Technology Digest, TD06-024, September 1, 2006.
3. D. Canadinc, K. Myung Lee, H. Sehitoglu, A. Polycarpou, **F. C. Robles Hernandez**, Linking Microstructure-Mechanical Properties-Wear Performance, Federal Railroad Administration. 2006.
4. R. Rieff, **F. C. Robles Hernandez**, In-Track Demonstration of Laser Treated Rail to Reduce Friction and Wear, Federal Railroad Administration, US Department of Transportation, DOT/FRA/ORD-07/17, Appendix A, May 2007.
On the Web: Railroads.dot.gov
5. **F. C. Robles Hernandez**, J. LoPresti, Interim Evaluation of Premium Rail Steels at FAST®, Technology Digest, TD07-018, August 1, 2007.
6. **F. C. Robles Hernandez**, D. Stone, G. Dahlman, Effects of Microvoids, Oxide Inclusions, and Sulfide Inclusions on the Fatigue Strength of Wheel Steels, Technology Digest, TD07-022, August 1, 2007.
7. **F. C. Robles Hernandez**, R. Jiménez, W. Larson, Laboratory Study of Norfast Rail Clips, Letter Report, Transportation Technology Center, Inc., HALERC, 2007.
8. **F. C. Robles Hernandez**, J. LoPresti, Linking Microcleanliness, Tensile and Fracture Toughness Test to Rolling Contact Fatigue, Technology Digest, TD07-018, August 1, 2007.
On the Web: TRB.org
9. **F. C. Robles Hernandez**, R. Jiménez, W. Larson, Laboratory Study of Norfast Rail Clips, Report HALERC, 2007.
10. **F. C. Robles Hernandez**, K. Gonzales, S. Anankitpaiboon, N. Demas, A. Polycarpou, Qualitative Prediction of Rail Wear and Sliding Contact Fatigue Performance using Laboratory Methods, Technology Digest, TD08-020, May1, 2008.
11. R. Ordóñez Olivares, A.J. DeArdo, C.I. Garcia and **F. C. Robles Hernandez**, New Rail Steels for the 21st Century: Superior Performance through Advanced Alloy Design and Thermo-Mechanical Processing, R-Report, Association of American Railroads, 2008.
12. J. LoPresti, **F. C. Robles Hernandez**, Premium Rail Performance under 39-Ton Axle Loads at FAST, Technology Digest, TD08-041, October 1, 2008.
13. **F. C. Robles Hernandez**, D.H. Stone, Steel Development for High Performance Wheels, Technology Digest, TD08-047, November 1, 2008.
14. **F. C. Robles Hernandez**, S. Kalay, S. Cummings, Properties and Microstructure of High-Performance Wheels, Technology Digest, TD09-001, January 1, 2009.
15. **F. C. Robles Hernandez**, S. Anankitpaiboon, S. Cummings, Analysis of Residual Stresses on High Performance Wheels, Technology Digest, TD09, February 1, 2009.
16. **F. C. Robles Hernandez**, J. LoPresti, Linking Fatigue, Microcleanlines, Tensile, and Fracture Toughness Tests, Technology Digest, TD09-010, March 1, 2009.
17. D. Szablewski, **F. C. Robles Hernandez**, Shell Defect Analysis Using Scanning Electron Microscopy Techniques, Technology Digest, TD10-004, March 1, 2010.

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18. **F. C. Robles Hernandez**, D. J. Minicucci, Market Research to Identify a Window of Opportunity for FIERF on the Current Needs for Railroad Wheels, Forging Industry Association Forging Industry Educational and Research Foundation, March 2022.
On the Web: [FIERF](#)
19. M. C. Belduque Correa, H. Barragan Vargas, A. Lim, K. Alba, S. R. Taylor, **F. C. Robles Hernandez**, An In-Track Apparatus to Improve Thermite Weld and Rail Integrity, Department of Transportation and the Federal Railroad Administration, 2025.