Francisco C. Robles Hernandez

University of Houston, Department of Mechanical Engineering Technology
4370 Calhoun Rd., Houston, TX 77204: (713) 743-4131:fcrobles@uh.edu:https://uh.edu/tech/mt-group/

EDUCATION

2000 - 2004	**Ph.D. Materials Science and Engineering** 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*	**Windsor, ON Canada**
1996 - 1999	**M.S. Materials Science and Metallurgy** National Polytechnic Institute of Mexico, Mexico City College of Chemical Engineering and Extractive Industries Thesis: *Production and Characterization of Composites Metal-Fullerene by Means of Mechanically Alloyed and Spark Plasma Sintering*	**Mexico City, Mexico**
1991 - 1996	**B.S. Metallurgical Engineering** **Minor in Chemistry of Mining** National Polytechnic Institute of Mexico, Mexico City College of Chemical Engineering and Extractive Industries	**Mexico City, Mexico**

RESEARCH EXPERIENCE

University of Houston

2022 - Present — **Manager of the Core Facility for Electron Microscopy** — **Houston, TX**

I work in the development of this facility for approximately 7 years. I put together a cohort of 50 faculty or more to identify the needs in electron microscopy for the entire university. I instrumented all the microscopes to facilitate the service for the university. I planned the entire protocols for use of the instrumentation and access. I Co-Chair the Core-Facility committee at the University of Houston. The funding for this facility between 2021 and 2022 is approximately $ 8.5 M. The facility is currently equipped with the following instruments:

- *Scanning Electron Microscope,*
- *Plasma Focus Ion Beam,*
- *Transmission Electron Microscope (2023),*
- *Aberration Corrected Transmission Electron Microscope (2023),*

URL: https://uh.edu/research/about/core-facilities/electron-microscopy/index

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2020 - Present	**Professor**	
2018 - Present	**Member, Advanced Manufacturing Institute**	
2017 – Present	**Adjunct Faculty, Electrical and Computer Engineering**	
2017 – Present	**Adjunct Faculty, Materials Science and Engineering**	
2014 – 2019	**Associate Professor**	
2009 – 2014	**Graduate Program Coordinator, Mech. Eng. Technology**	
2008 - 2014	**Assistant Professor**	
	Rice University	
2019 – Present	**Adjunct Faculty, Materials Science and Nanoengineering**	
2021 – 2024	- Professor	
2019 – 2021	- Associate Professor	
2018 - 2019	**Visiting Scholar, Materials Science and Nanoengineering**	
2005 – 2008	**Transportation Technology Center, Inc. (TTCI)** Principal Investigator/Project Manager *TTCI 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. Most developments made at TTCI are adopted by most 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 under the management of the Federal Railroad Administration.* • *A Principal Investigator or Manager at TTCI is considered 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 for materials failure*	**Pueblo, CO**
2000 – 2004	**Natural Sciences and Engineering Research Council of Canada/FORD-NEMAK/University of Windsor Industrial Research Chair** Research Assistant • Root cause failure analysis, mechanical testing, materials characterization, • Casting of light metal alloys • Designed prototype engine block for the V6-FORD engine • Chromatography, metallography, and crystallography	**Windsor, ON Canada**
1997 - 1999	**National Polytechnic Institute of Mexico/Centre for Processing of Minerals and Advanced Materials** Research Assistant	**Mexico City, Mexico**

- Teaching the Transmission Electron Microscopy laboratory for graduate students
- Transmission Electron Microscopy operation and theory
- Scanning Electron Microscopy operation and theory

HONORS AND AWARDS

2017 - 2020	**National System of Researchers, Mexico, Level II** • Honorific assignment equivalent to an Associate Professor	**Mexico**
	Plenary Speaker	**South Africa**
2019	• CoSAAMI, Advanced Materials Initiative Vanderbijlpark	
2012	• The Southern African Instituto of Mining and Metallurgy Magaliesburg	
	Key Note Speaker	
2017	• Congreso Internacional de Metalurgia y Materiales Monclova, Coahuila	**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**
	Grant Funding	
2000 - Present	• Research funding: ~10+M • Scholarships, fellowships, and prizes totaling more than $120K while a student	

NOTABLE EXPERT SERVICES

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

RESEARCH FUNDING

Summary

- Pending Funding: $4.5 M
- Current Funding: $3 M External - *federal and Industrial*

- Internal-UH Current: $8.5 M - *Electron microscope facility*
- Projects Completed: $4.52 M
- Total External funding since 2005: $10 M

Funding record

1. **PI: Francisco C. Robles Hernandez**, "Rail Base Corrosion", National Academy of Science, $75,000, 2005-2006.
2. **PI: Francisco C. Robles Hernandez**, "Advanced Rail Steel", Federal Railroad Administration, $180,000, 2005.
3. **PI: Francisco C. Robles Hernandez**, Advanced Rail Welding, Association of American Railroads, $250,000, 2005.
4. **PI: Francisco C. Robles Hernandez**, "Advanced Rail Welding", Association of the American Railroads, $250,000, 2006.
5. **PI: Francisco C. Robles Hernandez**, "Advanced Rail Steels", Association of American Railroads, $168,000, 2006.
6. **PI: Francisco C. Robles Hernandez**, "Strategies to Prevent Wheel Failure", Association of American Railroads, $250,000, 2006.
7. **PI: Francisco C. Robles Hernandez**, "Advanced Rail Steels", Association of American Railroads, $178,000, 2007.
8. **PI: Francisco C. Robles Hernandez**, "Strategies to Prevent Wheel Failure", Association of American Railroads, $350,000, 2007.
9. **PI: Francisco C. Robles Hernandez**, "Advanced Rail Steels", Association of American Railroads, $190,000, 2008.
10. **PI: Francisco C. Robles Hernandez**, "Strategies to Prevent Wheel Failure", Association of American Railroads, $350,000, 2008.
11. **PI: Francisco C. Robles Hernandez**, "Rail Base Corrosion Phase II", National Academy of Science, $80,000, 2008.
12. 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.
13. **PI: Francisco C. Robles Hernandez**, "Projects with the Transportation Technology Center, Inc.", $26,600, 2008-2009.
14. **PI: Francisco C. Robles Hernandez**, "Heat exchange improvement ideas for Water Heater Trucks", McAda Fluids Heating Services, $68,650, 2011-2012.
15. **PI: Francisco C. Robles Hernandez**, "Laser Cladding of Welds to Improve Railroad Track Safety", National Academies/TRB-Safety IDEA, Grant: SAFETY-22, $168,171, 2013-2014.
16. PI: Dr. Xiaojing Yuan, **Francisco C. Robles Hernandez,** "Succeed in Engineering Technology Scholars (SETS): Identifying and Developing Future Technology Leaders", National Science Foundation, $767,868, 2015-2020, NSF-Grant Number 1458772.

17. **PI**: **Francisco C. Robles Hernandez**, "International Agreement between the University of Houston and CONACyT: 2016-2021", funding +$500,000.
    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 opportunity is granted only to the top 100 universities in the world, based on the QS World University Ranking Report. the University of Houston is in the 600-750 category*[†]*. Therefore, it required a lot of extra voluntary work and dedication to convince CONACyT's former director (Dr. Enrique Cabrero Mendoza) to grant the University of Houston such prestigious award. I conducted all this work under voluntary basis and acted as the PI/Liaison for five years attracting over 25 graduate students fully funded by the government of Mexico, in addition to other support such as Post-doctoral fellows, sabbaticals, research exchange, etc.*
    - In the press
        - UH Expands Global Footprint: New Partnerships with Mexico, UH News
        - Mexico partnership creates opportunities for post-graduates, The Daily Cougar
        - University of Houston Establishes Partnership with Mexico's National Science and Technology Council (CONACyT), UH Office of the Provost News Release
18. **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, $151,500, Grant: SAFETY-38, 2019-2022.
19. **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, Grant: 66334, period 2020-2021.
20. PI: W. Zhu, Co-PI Augustina Reyes, Senior Personnel: **Francisco C. Roble Hernandez**, "RET Site: High School Teacher Experience in Engineering Design and Manufacturing", NSF, $603,490, Award: 1855147, 2019-2022.
21. **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.
22. 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, Grant: 2020-PK-2953, 2020-2022.
    - In the press
        - https://www.egr.uh.edu/news/202212/eces-brankovic-earns-300k-grant-ferromagnetic-alloy-research
23. **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, Grant: G0506199, 2019-2021.

[†] https://www.topuniversities.com/university-rankings/world-university-rankings/2022

24. **PI: Francisco C. Robles Hernandez**, Particle Size Analysis for Zeolites, Navan Global, $9,000, 2021-2022.
25. **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 stablish 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.*
26. **PI: Francisco C. Robles Hernandez**, Co-PI: Shelton R. Taylor, Federal Railroad Administration (FRA) An In-Track Apparatus to Improve Thermite Weld and Rail Integrity, Federal Railroad Administration, $527,424 + $121,271 match.
27. 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, Grant: 111387, $1,383,000, 2021-2022 additional $497,000 in 2023-2024.
28.

Internal Awards

29. 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.
30. **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.
31. **PI: Francisco C. Robles Hernandez**, "UH-internal funding, minor grants": $23,500, 2009-2014.
32. **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, 2016-2018.
33. 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.

Pending Funding

34. PI: J. Rimer, **Co-PI's: Francisco C. Robles Hernandez**, Oomman Varghese, Boris Makarenko, Jiming Bao, Core Facility: Advanced Materials, University of Houston, $4.5M *Pending*.

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TEACHING AND STUDENT LEARNING

Graduate Student Supervision

- Graduate supervisor
  - 17 M.S.
  - 5 Ph.D. graduated, 6 more in progress

Selected Student Awards

- Best Ph.D. Thesis in the Materials Science and Engineering Program (University of Houston), W. Yang, Low Temperature Synthesis Sapphire and Ruby and Their Optical Applications, 2019.
  - Supervisors: Drs. **F.C. Robles Hernandez** and S. Brankovic
  - In the press
    - Graduate Student Researchers Receive Dissertation and Poster Awards
    - Cullen College Celebrates Excellence with Outstanding Service Awards
- First Place, Spring Poster Competition, UH Electrochemical Society Student Chapter, K. Ahmadi, 2019
  - Supervisors: Drs. S. Brankovich and **F.C. Robles Hernandez**
  - In the press
    - Graduate Student Researchers Receive Dissertation and Poster Awards
    - ECS Spring 2019 Poster Competition

Course	Subject	Years	Student Evaluations (out of 5)
MECT 4372	**Materials Technology***	**2008-2021**	**3.5-4.6**
Teaching Evaluations: Overall teaching effectiveness (question 11) ratio to college average			
Year	Spring	Summer	Fall
2008			0.65
2009	0.95		0.82
2010	0.90		
2011			0.84
2012			0.88
2014		0.81	0.83
2015	0.81	0.92	0.78
2016	0.81	1.02	0.81
2017	0.86	0.78	
2018		0.95	0.79
2019	0.75	0.79	0.79
2020	0.75		
2021	0.67 – COVID 19		

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Course	Subject	Years	Student Evaluations (out of 5)
MECT 4172	**Materials Technology Lab***	**2008-2019**	**N/A**
Teaching Evaluations: Overall teaching effectiveness (question 11) ratio to college average			
Year	Spring	Summer	Fall
2009	1.11		0.78
2011	1.31		
2014		0.94	
2015	1.11	1.03	0.90
2016	1.08	1.10	1.03
2017	1.10	0.99	1.12
2018		0.92	1.01
2019	0.87	0.89	0.96
2020	0.92		COVID 19
2021			

Course	Subject	Years	Student Evaluations (out of 5)
MECT 4341	**Materials Selection and Management***	**2009-2021**	**4-4.5**
Teaching Evaluations: Overall teaching effectiveness (question 11) ratio to college average			
Year	Spring	Summer	Fall
2009			1.14
2011			1.00
2012			1.00
2020			1.00
2021			

Course	Subject	Years	Student Evaluations (out of 5)
MECT 4398	**Special Problems (Independent Study)***	**2008-2021**	**5**
Teaching Evaluations: Overall teaching effectiveness (question 11) ratio to college average			
Year	Spring	Summer	Fall
2014			1.3
2016			1.23

Course	Subject	Years	Student Evaluations (out of 5)
MECT 4343	**Thermomechanical Processing of Materials***	**2013-2021**	**3.5-4.5**
Teaching Evaluations: Overall teaching effectiveness (question 11) ratio to college average			
Year	Spring	Summer	Fall
2011	1.2		1.0
2012			1.0
2021	0.67 - COVID		

Course	Subject	Years	Student Evaluations (out of 5)
MECT 6340	**Materials Selection for Energy Applications**	**2012-2021**	**4-5**
Teaching Evaluations: Overall teaching effectiveness (question 11) ratio to college average			
Year	Spring	Summer	Fall
2009			1.3
2011			1.2
2012			1.2
2016			0.85
2018			1.24
2011			1.00

Course	Subject	Years	Student Evaluations (out of 5)
MECT 6342	**Thermomechanical Processing of Materials‡**	**2012-2021**	**5**
Teaching Evaluations: Overall teaching effectiveness (question 11) ratio to college average			
Year	Spring	Summer	Fall
2011	1.2		
2012	0.89		
2013	1.2		
2021	1.00 - COVID		

MECT 6397	**Selected Topics in Manufacturing Systems Technology‡**	**2012-2014**	**5**

MECT 6396	**Master's Project‡**	**2008-2021**	**5**
Teaching Evaluations: Overall teaching effectiveness (question 11) ratio to college average			
Year	Spring	Summer	Fall
2017	1.22		

MECT 6399	**Thesis‡**	**2008-2021**	**5**
Teaching Evaluations: Overall teaching effectiveness (question 11) ratio to college average			
Year	Spring	Summer	Fall
2011			1.3
2012			1.0

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MECT 3355	**Strength of Materials‡**	**2020-2021**	**5**
Teaching Evaluations: Overall teaching effectiveness (question 11) ratio to college average			
Year	Spring	Summer	Fall
2020	0.62[†]		
[†] *the access to blackboard was deny for almost a month (IT issues), students were unhappy about it and COVID 19 pandemic and lockdown forced the class to move virtual in the middle of the semester.*			

Visiting Lecturer	Advanced Methods of Characterization and Analysis: *30 hours* Graduate Program Universidad Michoacana de San Nicolas de Hidalgo, Morelia Michoacán, México, 2016
Visiting Lecturer	Advanced Methods of Characterization and Analysis for Steel: *40 hours* M.S. Graduate Program Altos Hornos de México, Monclova Coahuila, México, 2015
* Undergraduate course ‡ Graduate course	

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Graduate Students, Sabbatical, Postdoctoral Fellows

Student (Origin)	Thesis Title	Degree	Year
A.D.K.P. Savio*‡ India	Characterization Protocol for Titanium Dioxide (Anatase:Rutile) Use for Photocatalytic Applications	M.S.	2011
D.A. Barber*‡ USA	*Dual master's degree* Mechanical Engineering Technology: Cost-Effective Thermomechanical Synthesis and Characterization of Complex Carbon Nanostructures for Structural Applications	M.S.	2013
	Project Management: Categorizing the Process that Produced Particular Structures	M.S.	2013
O. Eyitayo M.*‡ Nigeria	*Dual master's degree* Mechanical Engineering Technology: Growth and Synthesis of Carbon Nanotubes by Chemical Vapor Distribution on Alumina Substrates and their Reinforcing Effect for Structural Composites	M.S.	2013
	Project Management: A Comparison of Different Sintering Methods in the Development of Al_2O_3 Nanostructured Composites Reinforced with Carbon Nanostructures	M.S.	2014
A. Okonkwo*‡ Nigeria	*Dual master's degree* Mechanical Engineering Technology: Engineering Carbon Nanostructures in Solid State	M.S.	2014
	Project Management: Laser Processing to Improve Track Safety, Ridership Safety and Efficiency	M.S.	2014
O.A. Herrera Sanchez†‡¥ Mexico	Synthesis of Al6061-Carbon Fibers and its Numerical and Experimental Analysis	M.S.	2015
J. Nguyen*†‡ Vietnam	Prevalence of Carbon Nanotubes in Irradiated Foods and the Potential Impact on Health	M.S.	2015
A. Reddy Erra†‡ India	Carbon Nanostructures for Highly Efficient Rechargeable Batteries	M.S.	2015
A. Tejada Ochoa†‡¥ Mexico	Synthesis of Silicate from Soils Rich in SiO_2 for Applications as Geopolymers	M.S.	2015
I. Estrada Guel‡¥ Mexico	Synthesis and Characterization of Nanostructured Particles and its Dispersion as Effective Reinforcements for Composites	Post-Doc	2015
Dr. J.M. Herrera Ramirez‡¥ Mexico	Synthesis and Analysis of Chitosan Composites with Carbon Nanostructures by Means of Mechanical Milling and Sintering	Sabbatical Scholar	2016
O.I. Perez Ordonez†‡¥ Mexico	Synthesis and Structural and Mechanical Analysis of a Geopolymeric Paste	M.S.	2016

O. Velazquez Meraz†‡¥ Mexico	Synthesis and Characterization of Chitosan Composites Reinforced with Carbon Nanostructures	M.S.	2016
F. Cortes Vega†‡¥ Mexico	Synthesis and Characterization of Doped Alumina with Cr^{+3} Ions and Reinforced Using sp2 Bonded Carbon Nanostructures	Ph.D.	2017
M. Singh*‡ India	Water Remediation by Means of Co-Ti-O Photoactive Composites Having Enhanced Sunlight Activity	M.S.	2018
W. Yang*‡ China	Low Temperature Synthesis Sapphire and Ruby and Their Optical Applications ***Best Thesis Award: Materials Science and Engineering Program at the University of Houston***	Ph.D.	2019
K. Ahmadi†‡ Iran	Electrochemical Synthesis of Functional Films and Coatings	Ph.D.	2020
A. Raghatate*†‡ India	Developing Chitosan-Morphed Graphene based Functional Materials by Compression Molding and Laser Lithography	M.S.	2020
N.A. Castañeda Quintero*†‡ Colombia	Inline Scanning Raman Spectroscopy for Quality Control and Process Feedback for Reel-to-Reel Manufacturing	M.S.	2021
N. Chaudhari* India	Electrochemical Characterization of Negative Lead Electrode in Lead-Acid Battery	Ph.D.	2021
M. Shirazi† Iran	IR Spectroscopy Application in Studies of Electrochemical Adsorption of Hydrogen on Monolayer Catalyst	Ph.D.	2021
F. Cortes Vega Mexico	Development of protocols to transform carbon waste to graphite, graphene and morphed graphene for energy and structural applications	Post-Doct	2021
Dhaivat Solanki India	Electrodeposition of CoNiFeX magnetic thin films with low magnetic losses for power application	Ph.D.	2022
N.A. Castañeda Quintero*†‡ Colombia	Reel-to-Reel Manufacturing quality control tool for electronic tapes	Ph.D.	2024
Adama Quaye, Peter Ghana	N/A	Ph.D.	2024
Arti Rani India	Circular Chemistry of Carbon waste into graphite, graphene and morphed graphene for energy and structural applications	Post-Doct	2022

*Direct supervisor
‡Degree completed
†Supervised in collaboration with other faculty
¥Students/professionals from Mexico were supported by the Mexican Government-CONACyT.

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Undergraduate Research

Student	Race/Ethnicity	Degree/ Graduation Year	Publications	Currently at
U. Aldea	Hispanic	BS/2011	1 article 1 conference	General Manager at Icoalcha sac
A. Abana	African American	BS/2011	1 acknowledgement in article	Halliburton
C. Brysch A. Ulmet E. Wold	White White White	BS/2012 BS/2014 BS/2014	1 proceeding 1 conference 1 article	PTS Advance Medicinal Chemistry and Pharmacology
S. Daley[1]	White	BS/2011		Nolato Contour
J. Fletcher	Mixed Race	BS/2011	2 articles 1 conference	Western States Fire Protection
C. Mandival	Hispanic	BS/2014	2 conferences 2 articles[3]	Technip FMC
F. Perez	Hispanic	BS/2014	2 conferences 2 articles[3]	Radiac Abrasives
O. Hecht	Hispanic	BS/2014	2 conferences 2 articles[3]	Johnson Controls
A. Fals	Hispanic	M.S./2012	6 conferences (2 invited) 3 articles **2nd place at COT Research Day**	Kobelco Compressors America inc.
M. Mohamed[2]	Arab	BS/2012	1 poster **Best Paper Award**	Ph.D. student at Texas A&M
T. Obiri	African American	M.S./2015	3 conferences[3] 2 articles[3]	ExxonMobile
A.O. Okonkwo	Nigerian	M.S./2014	7 conferences 4 articles, **2nd place at COT Research Day**	US Army
J. Nguyen[3]	Vietnamese	M.S./2014	2 conferences 2 articles[3]	Third Coast Terminals, Inc
D. Pepe	White	BS/2012	2 articles	Special Aerospace Services, LLC
J. Quintero	Hispanic	BS/2011	3 articles (1 invited), 4 conferences (2 invited)	Baker Hughes
A.P.D. Savio	Indian	M.S./2011	2 articles 4 conferences	Saipem
M. Singh	Indian	M.S./2017	5 conferences 2 articles accepted **1st place at COT Research Day**	NuStar Energy, L.P.

T.K. Yelamarthi	India	M.S./2012		Schamberger

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

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-present
    - Advances Structural Materials
    - Transmission Electron Microscopy
    - In-situ/In-operando methods
    - Advanced Catalytic Materials
- International Agreement between University of Houston and the Consejo National de Ciencia y Technología (CONACyT), ~$500K, 2016-2021.
    - CONACyT is the Mexican equivalent to NSF
    - 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 Expands Global Footprint: New Partnerships with Mexico, UH News
  - Mexico partnership creates opportunities for post-graduates, The Daily Cougar
  - University of Houston Establishes Partnership with Mexico's National Science and Technology Council (CONACyT), UH Office of the Provost News Release
- 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
- Radiation Safety Committee
  - Co-Chair 2018 – Present
  - Committee member 2013 - present.

Reviewer

	Proposals	
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**
2013 - 2015	• **National Science Foundation, Federal Government**	**USA**
2015	• **Partnership Social Sciences and Technology foundation (STW) and Netherlands Organization for Scientific Research (NOW) ProRail**	**Netherlands**
2018 - 2019	• **Oak Ridge National Laboratory**	**USA**
	Books	
2015	• **Metallurgical Design from Prehistory to the Space Age, B. Kaufman and C. L. Briant (Eds.), Springer Nature**	**USA**
	Journals (>30)	
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,**	**International**

Proceedings of the Institute of Mechanical Engineers, Science Advances, Surface and Coatings Technology, Thermomechanical Acta, Wear

2011

- **American Society of Engineering Education Gulf-Southwest Section (ASEE GSW) Annual Conference, 2011**

PROFESSIONAL ASSOCIATIONS

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

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.***
- 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.***

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.***

Invited Lectures and Talks

- **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 2009, **Invited Talk.**
- **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**, H.A. Calderon, Composites Reinforced with Carbon Nanostructures an Overview, International Materials Research Congress, Cancun, Quintana Roo Mexico, 2011, **Invited Talk.**
- **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 2010, **Invited Talk.**
- A.E. Fals, J. Quintero, **F.C. Robles Hernandez**, "Manufacturing of Hybrid Composites and Novel Methods to Synthesize Carbon Nano-Particles", International Materials Research Congress, Advanced Structural Materials, Cancun, Quintana Roo, Mexico 2011, **Invited Talk.**
- **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,** D. Barber, J. Quintero, A.E. Fals, "Conjugated-Carbon Nanostructures: Molecular Topology, Tunable Properties and Applications", Southwest Regional ACS Meeting, Baton Rouge, Louisiana 2012, **Invited Talk.**
- 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 2013, **Invited Talk.**
- **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", Congreso Internacional de Metalurgia y Materiales, Monclova, Coahuila, Mexico 2014, **Invited Talk.**

- **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.**
- 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 2015, **Invited Talk**
- **F.C. Robles Hernandez**, "Manufacturing of Advanced Materials for Structural and Energy Related Applications", Faculty Hiring Committee, Mechanical Engineering Department, University of Alberta 2015, **Invited Talk.**
- P. Jagadale, **F.C. Robles Hernandez**, D. Demarchi, A. Tagliaferro, "Improving Composite Properties and Biosensor Sensitivity Using Low-Cost Nanostructured Carbons", International Microprocesses and Nanotechnology Conference, Toyama, Japan 2015, **Invited Talk**
- **F.C. Robles Hernandez**, A.K.P.D. Savio, J. Fletcher, R. Iyer, J. Bao, "Overview of the Synthesis and Catalytic Activity of TiO_2", Conference in Artificial Photosynthesis, Cocoyoc, Morelos, Mexico 2016, **Invited Talk.**
- J. Bao, S. Baldelli, **F.C. Robles Hernandez**, R. Zhifeng, "Efficient Solar Water-Splitting using a Nanocrystalline CoO Photocatalyst", Conference in Artificial Photosynthesis, Cocoyoc, Morelos, Mexico 2016, **Invited Talk.**
- **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.**
- **F.C. Robles Hernandez**, H.A. Calderon, J. Bao, L. Echegoyen, Y. Yao, A. Genc, "Characterization of Advanced Materials by Means of Aberration Corrected Transmission Electron Microscopy", PANANO, Guaruja, Brazil 2017, **Invited Talk.**
- 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 2018, **Invited Talk.**
- **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 2018, **Invited Talk.**
- **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
- 2018, **Invited Talk.**
- A. Reyes, J. Ortiz, **F.C. Robles Hernandez**. "Strategies to Promote Materials Science and Engineering for Graduate", Undergraduate and K12 Students, American Association of Physics Teachers (AAPT), Houston, TX 2019, **Invited Talk.**

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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

Visiting Lecturer

2014	Advanced Methods for Characterization and Testing of Steels Graduate program in Siderurgy Universidad Autónoma de Coahuila and Altos Hornos de Mexico 20 Lectures, 2 h each	Monclova, Coahuila, Mexico
2015	Advanced Methods for Characterization and Testing Graduate program in Materials Science and Metallurgy Universidad Michoacana de San Nicolás de Hidalgo 20 lectures 1.5 h each	Morelia, Michoacan, Mexico

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PUBLICATIONS

Summary

- Patents: 4 full and provisional patents: 3
- Authored Books: 2
- Edited books: 3
- Journal editorials: 4
- Peer Review Articles: 122
- Peer-Reviewed Conference Proceedings: 27
- Non-Peer review publications (e.g. *Arχive*): 5
- Conference presentations: 147
- Technical reports: 19

Summary of Citations

- Google Scholar: 186 documents with 3,600 citations, h-index = 30, i10-index = 56
- Scopus: 113 documents with 2,816 citations, h-index = 26

Editing and Reviewing

- Reviewer for 30+ journals
- Edited three books of proceedings for the International Materials Research Congress
- Reviewer for domestic and international government agencies
    - Canada, Mexico, Netherlands, Romania, Russia and USA

Note: § indicates students, ‡ indicates group leader, † indicates main contributor

Patents

1. **F.C. Robles Hernandez**‡†, A. Okonkwo§, H.A. Calderon, "Synthesis of Effective Carbon Nanoreinforcements for Structural Applications", US Patent US10688695B2, 2020.
2. **F.C. Robles Hernandez**‡†, A. Okonkwo§, H.A. Calderon, "Synthesis of Effective Carbon Nanoreinforcements for Structural Applications", WO2015148781A1, 2015.
3. **F.C. Robles Hernandez**‡†, D.H. Stone, "Railroad Steel Having Improved Resistance to Rolling Contact Fatigue", US Patent Number: US7559999, 2009.
4. **F.C. Robles Hernandez**‡†, D.H. Stone, "Railroad Wheel Steel Having Improved Resistance to Rolling Contact Fatigue", US Patent Number: US7591909, 2009.

Record of Invention and Provisional Patent

5. **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
6. **F.C. Robles Hernandez**‡†, R.S. Taylor, M. Yarali, "Thermite Welding Improvements by Means of Vibration for Railway Applications and Elsewhere", 2019.

7. 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

8. **F.C. Robles Hernandez**‡†, K. Koch, G. Plascencia-Barrera, Rail Base Corrosion Analysis, National Academy of Science, National Academy of Science/Transportation Research Board, ISBN: 978-0-309-43182-8, http://www.trb.org/Publications/Blurbs/159033.aspx.
9. **F.C. Robles Hernandez**, J.M.H. Ramírez, R. Mackay, "Al-Si Alloys: Automotive, Aeronautical, and Aerospace Applications", ISBN 3319583808, Springer, 2017.
10. 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.
11. 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

12. 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, DOI: https://doi.org/10.1007/978-3-030-25993-8_9.
13. 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", ISSN 1516-1439, Materials Research, 2016
14. 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

Invited Editor

15. 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 2021, Part A, January 2022.
16. 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.
17. 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.

18. **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.

Journal Articles Published or Accepted for Publication

1. 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.
   In the press:
   a. UH Professor, Graduate Think Soot Can Help with the Energy Transition | UH Cullen College of Engineering
2. C. Madhusha, 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. IF: 8.3
3. 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*, *In Press*. IF: 1.7
4. X. Xing, C. Wu, G. Yang, T. Tong, Y. Wang, D. Wang, **F.C. Robles Hernandez**, Z. Ren, Z. Wang, J. Bao FeSe2/CoSe nanosheets for efficient overall water splitting under low cell voltages, *Materials Today Chemistry*, 2022, **26**, 101110. IF: 8.3
5. R. Goul, A. Marshall, S. Seacat, H. Peelaers, **F. C. Robles Hernandez**, J. Z. Wu, Atomic-scale tuning of ultrathin memristors, *Communications Physics*, 2022, **5**, 1-11. IF: 6.5
6. W. Yang, F. D. Cortés-Vega, K. Ahmadi, N. Castaneda, M. Paidpilli, G. Majkic, V. Selvamanickam, S. R. Brankovic, **F.C. Robles-Hernandez**, Accurate Ruby Sensor for Stress Analysis in Electronics, *ACS Applied Electronic Materials*, 2022, **4(9)**, 4332-4339. IF: 4.2
7. H. A. Calderon, J. Bao, **F.C. Robles Hernandez**, V.G. Hadjiev, Z. Wang, Z. Qin, The Electron Microscopy of Heterostructures Made of Perovskite Phases in Light Emitting Crystals, *Microscopy and Microanalysis*, 2022, **28(S1)**, 2252-2255. IF: 3.4
8. H. A. Calderon, J. D. Rimer, **F.C. Robles Hernandez**, CF Kisielowski, Crystalline Arrangement of Organic Molecules in Ammonium Urates as Determined by Electron Microscopy, *Microscopy and Microanalysis*, 2022, **28(S1)**, 2238-2241. IF: 3.4
9. M. de Silva, C. Sandaruwan, **F.C. Robles Hernandez**, O. Sahin, M. Ashokkumar, P. M. Ajayan, V. Karunaratne, G. A. J. Amaratunga, N. Kottegoda, A Greener Mechanochemical Approach to the Synthesis of Urea-Hydroxyapatite Nanohybrids for Slow Release of Plant Nutrients, *Research Square*, 2022, **5(2)**, 1-23.
10. A. Chawla, A. Mallette, Adam, R. Jain, N. Le, **F. C. Robles Hernandez**, J. D. Rimer, Crystallization of Potassium-Zeolites in Organic-Free Media, *Microporous and Mesoporous Materials*, 2022, **341**, 112026. IF: 5.5

11. **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 Research, *FIA Magazine*, 2022, **4**, , 77-79.
12. W. Yang, F. D. Cortés-Vega, K. Ahmadi, A. Rani, V. G. Hadjiev, H. A. Calderon, S. R. Brankovic, **F. C. Robles Hernandez,** Bandgap tuning of pseudoboehmite nanoparticles induced by Quantum Confinement, *Ceramics International*, 2022, **48(15)**, 21934-21938. IF: 4.5
13. 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, 2022, **8(23)**, 1-11.
14. A. Raghatate, F. D. Cortes Vega, O. Velazquez Meraz, K. Ahmadi, Ni. M. Chaudhari, D. Solanki, A. B. Puthirath, N. Castaneda, P. M. Ajayan, J. M. Herrera Ramirez, V. Balan, **F. C. Robles Hernández**, Sustainable Biocomposites for Structural Applications with Environmental Affinity, ACS Appl. Mater. Interfaces 2022, **14(15)**, 17837-17848. IF: 9.23
15. T. Chen, C. Wang, Xi. Xing, Z. Qin, F. Qin, Y. Wang, Md Kamrul Alam, V. G. Hadjiev, G. Yang, S. Ye, J. Yang, R. Wang, S. Yue, D. Zhang, Z. Shang, **F. C. Robles Hernandez**, H. A. Calderon, H. Wang, Z. Wang, J. Bao, Integration of Highly Luminescent Lead Halide Perovskite Nanocrystals on Transparent Lead Halide Nanowire Waveguides through Morphological Transformation and Spontaneous Growth in Water, *Small*, 2022, **18(3)**, 2105009. IF: 15.2
16. M. A. Zafar, O. K. Varghese, **F. C. Robles Hernandez**, Y. Liu, M. V. Jacob, Single-Step Synthesis of Nitrogen-Doped Graphene Oxide from Aniline at Ambient Conditions, *ACS Appl. Mater. Interfaces* 2022, **14(4)**, 5797–5806. IF: 9.23
17. L. B. López-Sosa, J. Zárate-Medina, M, González-Avilés, H. Servín-Campuzano, H. A. Calderón-Benavides, **F. C. Robles Hernández**, Into the net zero emissions and climate change control: From solid carbon waste to effective solar convertors, *Carbon*, **191**, 2022, 362-373, IF: 9.59

    In the press:

    - UH Professor, Graduate Think Soot Can Help with the Energy Transition | UH Cullen College of Engineering
    - Researchers Think Soot Can Help with the Energy Transition - University of Houston (uh.edu)
    - Researchers think soot can help with the energy transition (techxplore.com)
18. K. Ahmadi, N. Dole, D. Wu, T. Salavati-Fard, L. C. Grabow, **F. C. Robles Hernandez**, S. R. Brankovic, Electroless Pb Monolayer Deposition—Prelude for Further Advances in Catalyst Monolayer Synthesis via Surface Limited Redox Replacement Reaction, *ACS Catalysis*, 2021, **11(8)**, 4650-4659. IF: 12.4.
19. F. Yuan, D. Salpekar, A. Baburaj, A, B. Puthirath, S. Hassan, **F. C. Robles-Hernandez**, H, Robatjazi, M.A.S.R. Saadi, S. Roy, D. Sun, N. A. Kotov, M. M. Rahman, P, M. Ajayan, Fiber-reinforced Monolithic Supercapacitor with Interdigitated Interfaces, *Journal of Materials Chemistry A*, 2021, **9**, 11033-11041. IF: 12.73
20. L.H. Gracioso, J. Peña-Bahamonde, B. Karolski, E. Aquino Perpetuo, C.A. Oller do Nascimento, H. Hashiguchi, J. Thalles Lacerda, M. Aparecida Juliano, **F.C. Robles Hernandez**, D. Frigi Rodrigues, Copper Mining Bacteria: Converting Toxic Copper Ions into a Stable Single Atom Copper Sustainable Synthesis of Monoatomic Copper, *Science Advances*, 2021, **7(17)**, eabd9210, 1-6. IF:14.14

- In the press

- https://www.reddit.com/r/science/comments/mxi0e4/scientists_discover_bacteria_that_transforms/, Reddit: 66.4K visits in a week.
- https://academictimes.com/bacteria-from-a-brazilian-copper-mine-work-a-striking-transformation-on-an-essential-metal/
- BBC-London: https://www.thenakedscientists.com/articles/interviews/microbes-make-metallic-copper
- https://uh.edu/news-events/stories/2021/april-2021/04232021-single-atom-copper.php
- https://www.sciencedaily.com/releases/2021/04/210423210744.htm
- https://www.mining.com/bacteria-may-be-used-to-source-high-grade-copper-study/
- https://newatlas.com/materials/mining-bacteria-toxic-copper-metal/
- https://www.insidescience.org/news/rare-microbes-turn-toxic-sludge-usable-copper
- https://www.inverse.com/innovation/copper-transforming-microbes-found-in-mine

21. C. Wu, S. Xue, Z. Qin, M. Nazari, G. Yang, S. Yue, T. Tong, H. Ghasemi, **F. C Robles Hernandez**, S. Xue, D. Zhang, H. Wang, Z. M Wang, S. Pu, J. Bao, Making g-C3N4 ultra-thin nanosheets active for photocatalytic overall water splitting, *Applied Catalysis B: Environmental*, 2021, **282(3)**, 119557. IF: 19.5
22. N. Castaneda, G. Majkic, **F. C. Robles Hernandez**, Scanning Raman spectroscopy for inline characterization of 2G-HTS conductors, Superconductor Science and Technology, 2021, **34(3)**, 035032. IF: 3.1
23. Z. Wang, H. Kannan, T. Su, J. Swaminathan, S. N Shirodkar, **F. C. Robles Hernandez**, H. A. Calderon, R. Vajtai, B. I. Yakobson, A. Meiyazhagan, P. M. Ajayan, Substitution of Copper Atoms into Defect-Rich Molybdenum Sulfides and their Electrocatalytic Activity, *Nanoscale Advances*, 2021, **3**, 1747-1757. IF: 7.2
24. G. Chilkoor, N. Shrestha, A. Kutana, M. Tripathi, **F. C. Robles Hernandez**, B. I. Yakobson, M. Meyyappan, A. B. Dalton, P. M. Ajayan, Muhammad M Rahman, Venkataramana Gadhamshetty, Atomic Layers of Graphene for Microbial Corrosion Prevention, *ACS Nano*, 2021, **15(1)**, 447-454. IF: 14.6.
25. G. Majkic, J. S. Jeong, H. Yun, **F. C. Robles Hernandez**, E. Galstyan, R, Pratap, H. Cheng, A. Stokes, A. Mkhoyan, V. Selvamanickam, New Insight into Strain and Composition of BaZrO3 Nanorods in REBCO Superconductor, *Superconductor Science and Technology,* 2021, **34(11)**, 115002. IF: 3.1.
26. A. B. Puthirath, A. P. Balan, E. F Oliveira, V. Sreepal, **F. C. Robles Hernandez**, G. Gao, N. Chakingal, L. M. Sassi, P. Thibeorchews, G. Costin, R. Vajtai, D. S. Galvao, R. R Nair, P. M. Ajayan, Apparent Ferromagnetism in Exfoliated Ultrathin Pyrite Sheets, *The Journal of Physical Chemistry C*, 2021, **125(34)**, 18927-18935. IF: 4.2
27. H. Calderon, C. Kisielowski, **F. C. Robles Hernandez**, V. Hadjiev, Electron Microscopy of TiO_2-$CoTiO_3$ based Materials for Photocatalysis, *Microscopy and Microanalysis,* 2021, **27(S1)**, 2444-2446. IP: 3.4
28. N. Castaneda, D. J. Solanki, J. K. Meen, G. Majkic, **F. C. Robles Hernandez**, Advanced quality control scanning system for electronic materials, *Microscopy and Microanalysis,* 2021, **27(S1)**, 794-795. IF: 3.5
29. N. Fernando, J. Swaminathan, **F. C. Robles Hernandez**, G. Priyadarshana, C. Sandaruwan, W. Yang, V. Karunaratne, Z. Wang, G. AJ Amaratunga, N. Kottegoda, A. Meiyazhagan, P. M. Ajayan,

Pseudobrookite based heterostructures for efficient electrocatalytic hydrogen evolution, *Materials Reports: Energy*, 2021, **2(1)**, 100020. *IF: Not yet Indexed*

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41. 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, 2018
42. A. Reyes, J. Ortiz, ***F. C. Robles Hernandez***‡†, Strategies to Promote Materials Science and Engineering for Graduate, Undergraduate and K12 Students, XXVII International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2018
43. ***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, 2018

44. ***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, 2017
45. ***F.C. Robles Hernandez*‡†**, O. Velazques Meraz, L.A. Echegoyen, HRTEM Characterization of Graphene – Fullerene Composites, International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2017
46. ***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, 2017
47. ***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, 2017
48. *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, 2017
49. *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, 2017
50. *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, 2017
51. ***F.C. Robles Hernandez*‡†**, J. Ortiz, The University of Houston – Mexico Partnership, Universidad Michoacana de San Nicholas of Hidalgo, Morelia, Michoacán, Mexico, 2017
52. ***F.C. Robles Hernandez*‡†**, The Materials and the Science of Advanced Ceramics, Universidad Michoacana de San Nicholas of Hidalgo, Morelia, Michoacán, Mexico, 2017, ***Keynote Speaker***
53. ***F.C. Robles Hernandez*‡†**, The Materials and the Science of the Railways, Universidad Michoacana de San Nicholas of Hidalgo, Morelia, Michoacán, Mexico, 2017, ***Keynote Speaker***
54. *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, 2016
55. *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, 2016
56. 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, 2016
57. ***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, 2016

58. ***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, 2016
59. ***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, 2016
60. *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, 2016
61. *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, 2016
62. *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, ***First Prize***
63. *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, 2016
64. *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, 2016
65. *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, 2015, ***Invited Talk***
66. ***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 Sp2 “Cross-Linked” Bonding, Euromat, Warsaw, Poland, 2015
67. ***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, 2015
68. *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, 2015
69. *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 Sp2 “Cross-Linked” Bonding, International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2015
70. 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, 2015

71. *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, 2015
72. *I. Estrada-Guel*, A. Okonkwo§, E. Obiri§, A. Guloy, **F.C. Robles Hernandez**‡†, Rapid Induction Pressure-Less Sintering of Graphitic Nanostructures with Cross-Link SP2 Bonding, International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2015
73. *A. Tejeda-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, 2015
74. *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, 2015
75. *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, 2015, ***Invited Talk***
76. *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, 2015
77. *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, 2015
78. *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, OR, 2015
79. *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, 2014. ***Invited Talk***
80. ***F.C. Robles Hernandez***‡†, A.K.P.D. Savio§, J. Fletcher§, R. Iyer, J. Bao, Overview of the Synthesis and Catalytic Activity of TiO_2, Conference in Artificial Photosynthesis, Cocoyoc, Mexico, Morelos, Mexico, 2014 ***Invited Talk***
81. ***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, 2014
82. *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, 2014
83. *I. Estrada-Guel*, **F.C. Robles Hernandez**, R. Martínez-Sánchez, A Green Method for Graphite Exfoliation, Effect of Milling Intensity, Microscopy and Microanalysis Conference, Hartford, CT, 2014
84. *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, 2014
85. *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, 2014

86. *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, 2014
87. *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, 2014
88. E. Obiry§, A.O. Okonkwo§, A. Guloy, ***F.C. Robles Hernandez‡†***, A Comparison of Different Sintering Methods in the Development of Al_2O_3 Nanostructured Composites Reinforced with Carbon Nanostructures, International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2014
89. *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, 2014
90. 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, 2013
91. J.F. Eberth, C.N. Brysch§, M. Paterson§, R. Ordoñes Olivares, ***F.C. Robles Hernandez***‡†**,** Chitosan and Chitosan Composites Reinforced with Carbon Nanostructures, International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2013
92. A.K.P.D. Savio§, J. Fletcher§, R. Iyer, ***F.C. Robles Hernandez***, Photodegradation of Paraoxon using Doped Sonosynthesized TiO_2, International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2013
93. 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, 2013
94. A. Okonkwo§, D. Gutscher, ***F.C. Robles Hernandez***‡†, Laser Cladding of Welds to Improve Railroad Track Safety, ISMANAM, Turin, Italy, 2013
95. C.N. Brysch§, M. Paterson§, R. Ordoñes Olivares, J.F. Eberth, ***F.C. Robles Hernandez***, Chitosan and Chitosan Composites Reinforced with Carbon Nanostructures, ISMANAM, Turin, Italy, 2013
96. *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, 2013
97. *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, 2013
98. 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, 2013
99. *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, 2013

100. *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., 2013
101. *N. Badi*, R. Mekala§, **F.C. Robles Hernandez**, Synthesis of Al-Al_2O_3/PVDF Core-Shell Nanodielectrics for Energy Storage Applications, Nanotech Conference and Expo, Washington D.C., 2013
102. *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, 2012, ***Invited Presentation***
103. ***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 2012, ***Invited Speaker***
104. 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, 2012, ***Keynote Speaker***
105. 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, 2012
106. ***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, 2012
107. A.E. Fals§, ***F.C. Robles Hernandez*‡†**, Multi-Functional Fullerene Soot/Alumina Composites, ASME Conference, Houston, TX, 2012
108. D. Barber, H.A. Calderon, ***F.C. Robles Hernandez***, Synthesis of Carbon Nanostructures by Thermo-Mechanical Means, ASME Conference, Houston, TX, 2012
109. 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, 2012
110. *C. Brysch*, **F.C. Robles Hernandez**, J.F. Eberth, Sintering of Chitosan and Chitosan Composites, ASME Conference, Houston, TX, 2012
111. 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***
112. ***F.C. Robles Hernandez*‡†**, H.A. Calderon, Composites Reinforced with Carbon Nanostructures an Overview, International Materials Research Congress, Cancun, Quintana Roo, Mexico, 2011, ***Invited Presentation***
113. 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
114. *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 Poster Award***

115. *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
116. 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, 2011
117. A.K.P.D. Savio§, ***F.C. Robles Hernandez‡†***, New Methodology to Characterize TiO_2 (Anatase:Rutile) for Photo Catalytic Applications, MS&T, Houston, TX, 2010
118. A. Fals§, ***F.C. Robles Hernandez‡†***, Development of Hybrid Nanostructured Alumina-Shape Memory-Carbon Nanoparticles Composites, MS&T, Houston, TX, 2010
119. ***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, 2010, ***Invited Presentation***
120. A.E. Fals§, J. Quintero§, ***F.C. Robles Hernandez‡†***, Manufacturing of Hybrid Composites and Novel Methods to Synthesize Carbon Nanoparticles.
121. *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
122. ***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, 2009, ***Invited Presentation***
123. ***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, 2009
124. ***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, 2009
125. *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, 2009
126. *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, 2009
127. *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 USA 2008
128. *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 USA 2008
129. ***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, 2007
130. ***F.C. Robles Hernandez‡†*,** G. Plascencia-Barrera, Rail Base Corrosion, TMS Annual Meeting, Orlando, FL, 2007

131. ***F.C. Robles Hernandez*‡†,** D. Stone, Strategies to Prevent HAL Wheel Failures and Steel Development for Railroad Applications, BNSF Wheel Shelling and Failure Prevention Meting, Topeka, KS, 2007
132. ***F.C. Robles Hernandez*‡†,** Strategies to Prevent HAL Wheel Failures, Annual Research Review, Association of American Railroads-TTCI, Pueblo, CO, 2007
133. ***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
134. ***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, 2007
135. ***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, 2006
136. ***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, 2006
137. ***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
138. ***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
139. ***F.C. Robles Hernandez*‡†**, Strategies to Prevent Wheel Failures, Vehicle Track Systems-Mechanical Research Committee-TTCI Meeting, Chicago, IL, 2006
140. ***F.C. Robles Hernandez*‡†**, J. H. Sokolowski, W. Kasprzak, Electromagnetic Refinement of the 319 Aluminum Structure, Science Forum, Light Metals, 2004
141. ***F.C. Robles Hernandez*‡†,** J.H. Sokolowski, W. Kasprzak, Electromagnetic Refinement of the 319 Aluminum Structure, Annual Conference of Metallurgists, Hamilton, Ontario, Canada, 2004
142. ***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, 2003
143. ***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, 2002, ***Invited Presentation***
144. *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, 2000
145. ***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, 1999

146. ***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

147. ***F.C. Robles Hernandez*,** H. Calderon, N. Mota, L. Calzado, Caracterización de Materiales Nanocristallinos Producidos por Aleado Mecánico, Reunión Nacional de Difractometría, Morelia, Mexico, 1996

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Selected Industrial and Technical Reports

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