

Vladimir Gurau, Ph.D., P.E.

Curriculum Vitae

Work address:

Department of Manufacturing Engineering
Georgia Southern University
Center for Engineering and Research, Office 2020
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EDUCATION

1998 Ph.D. in Mechanical / Aerospace Engineering, University of Miami, Coral Gables, Fl. Dissertation: "Two-

Dimensional Mathematical Model and Numerical Simulation of the Transport Processes and Cell Performance of PEM Fuel Cells".

1987 M.S. in Mechanical / Aerospace Engineering (Propulsion Systems), Polytechnic Institute of Bucharest, Romania. Dissertation: "Numerical Simulation of Ramjet Combustion"

PROFESSIONAL EXPERIENCE

Teaching Appointments

2017-present Assistant professor of Manufacturing Engineering, Georgia Southern University, Statesboro, Georgia
2016-2017 Associate Professor (tenured) of Engineering Technology, Kent State University at Tuscarawas, New Philadelphia, Ohio
2010 -2016 Assistant Professor of Engineering Technology, Kent State University at Tuscarawas, New Philadelphia, Ohio
1995-1998 Teaching Assistant, University of Miami, Coral Gables, Florida
1991-1995 Visiting Professor, Civil Engineering Institute, Bucharest, Romania

Research / Industry Appointments

2003-2010 Senior Research Associate, Case Western Reserve University, Chemical Engineering Department, Cleveland, Ohio
2000-2001 Research Coordinator II, Project Manager, Florida International University, Hemispheric Center for Environmental Engineering, Miami, Florida
1998-2000 Research Specialist / CFD Expert, Energy Partners, LLC, West Palm Beach, Florida
1990-1995 Project/Design Engineer, Turbomecanica SA – Aircraft Engines Society, Bucharest, Romania
1987-1990 Design Engineer, Industria Aeronautica Romana, Brasov – Ghimbav, Romania

Professional Engineering Appointments

2003-2003 Professional Engineer, Florida Engineering Services, Miami, Florida
2002-2003 Professional Engineer, Blue Water Engineering & Design, Key Largo, Florida
2001-2002 Professional Engineer, G.M. Selby & Associates, Miami, Florida

Editorial Experience

- Member of the Editorial Board for *Energies*
- Guest and Academic Editor for *Energies*, Special Issue: *Proton Exchange Membrane Fuel Cells, 2021*
- Guest and Academic Editor for *Energies*, Special Issue: *Polymer Electrolyte Membrane Fuel Cells, 2019*
- Guest and Academic Editor for *Energies*, Special Issue: *Polymer Electrolyte Membrane Fuel Cells, 2017*
- Guest and Academic Editor for *Energies*, Special Issue: *Polymer Electrolyte Membrane Fuel Cells, 2016*

- Guest and Academic Editor for *Energies*, Special Issue: *Polymer Electrolyte Membrane Fuel Cells, 2015*
- Peer reviewer for *Energies*, *Journal of Power Sources*, *International Journal of Hydrogen Energy*, *Journal of the Electrochemical Society*, *SIAM Journal of Applied Mathematics*, *American Society of Engineering Education*, *Engineering Applications of Computational Fluid Mechanics*, *Polymer*, *Entropy*, *Applied Sciences*, *Membranes*, *Sensors*, *Processes*, *Journal of Engineering for the Maritime Environment*

COURSES TAUGHT

Georgia Southern University:

1. Applied Computing in Manufacturing Engineering, MFGE 2534 (2 sections)
2. Design for Manufacturability, Assembly and Sustainability, MFGE 3131 (1 section)
3. Automation and CIMS, MENG 5331 (1 section)
4. Advanced CNC Machining and Programming, MFGE 5531 (3 sections)
5. Industrial Robotics and Automation, MFGE 4533 (2 sections)
6. Advanced Robotics for Manufacturing, MFGE 5331 (3 section)
7. Advanced Materials Processing, MFGE 3531 (3 section)
8. Machine Vision, MFGE 5335 (1 section)
9. Manufacturing Processes Laboratory, MENG 1310 (5 sections)

Kent State University, University of Miami, Civil Engineering Institute, Bucharest, Romania

1. Thermodynamics for Engineering Technology, MERT 42000 (Kent State University, 1 section)
2. Fuel Cell Technology, GAE 32000 (Kent State University, 8 sections)
3. Advanced Fuel Cell Technology, GAE 42004 (Kent State University, 2 sections)
4. Introduction to Wind Turbine, Solar Cells and Fuel Cells, EERT 22095 (Kent State University, 1 section)
5. Energy Management Systems, GAE 42002 (Kent State University, 2 sections)
6. Power Technology, TECH 31032 (Kent State University, 2 sections)
7. Green and Alternative Energy (Kent State University for Cyber Clubs Summer Academy, 1 section)
8. Automated Manufacturing, TECH 31020 (Kent State University, 7 sections)
9. Manufacturing Processes, MERT 12004 (Kent State University, 7 sections)
10. Materials and Processes 2, TECH 32002 (Kent State University, 1 section)
11. Properties of Materials, MERT 12005 (Kent State University, 6 sections)
12. Engineering Technology Project, MERT 22009 (Kent State University, 6 sections)
13. Fluid Power, MERT 22012 (Kent State University, 1 section)
14. Computer Aided Tool Design, MERT 22003 (Kent State University, 5 sections)
15. Engineering Drawing, MERT 12000 (Kent State University, 7 sections)
16. Computer Aided Drafting, MERT 12001 (Kent State University, 5 sections)
17. Aircraft Propulsion (University of Miami, Florida, occasionally, when offered by my professor)
18. Thermodynamics of Compressible Fluids (Civil Engineering Institute, Bucharest, Romania, 5 sections)

NEW COURSES DEVELOPED

1. Design for Manufacturability, Assembly and Sustainability, MFGE 3131 (Georgia Southern University)
2. Industrial Robotics and Automation, MFGE 4533 (Georgia Southern University)
3. Advanced Robotics for Manufacturing, MFGE 5331 (Georgia Southern University)
4. Advanced CNC Machining and Programming, MFGE 5531 (Georgia Southern University)
5. Machine Vision, MFGE 5335 (Georgia Southern University)

6. Fuel Cell Technology, GAE 32000 (Kent State University)
7. Advanced Fuel Cell Technology, GAE 42004 (Kent State University)
8. Energy Management Systems, GAE 42002 (Kent State University)
9. Power Technology, TECH 31032 (Kent State University)
10. Introduction to Wind Turbine, Solar Cells and Fuel Cells, EERT 22095 (Kent State University)
11. Engineering Technology Project, MERT 22009 (Kent State University)
12. Thermodynamics for Engineering Technology, MERT 42000 (Kent State University)
13. Green and Alternative Energy (Kent State University)
14. Thermodynamics of Compressible Fluids (Civil Engineering Institute, Bucharest, Romania)

PUBLICATIONS

Peer-Reviewed Articles

1. V. Gurau, B. Ragland, D. Cox, A. Michaud and L. Busby: “*Robot Operations for Pine Tree Resin Collection*”, submitted to *Applied Sciences* (2021)
2. V. Gurau and E.D. Castro: “*Prediction of Performance Variation Caused by Manufacturing Tolerances and Defects in Gas Diffusion Electrodes of Phosphoric Acid (PA)–Doped Polybenzimidazole (PBI)-Based High-Temperature Proton Exchange Membrane Fuel Cells*”, *Energies*, vol. **13**, pp. 1-14; doi.org/10.3390/en13061345 (2020)
3. V. Gurau, A. Ogunleke and F. Strickland: “*Design of a Methanol Reformer for On-Board Production of Hydrogen as Fuel for a 3kW High-Temperature Proton Exchange Membrane Fuel Cell Power System*”, *International Journal of Hydrogen Energy*, vol. **45**, pp. 31745-31759; doi.org/10.1016/j.ijhydene.2020.08.179 (2020)
4. V. Gurau, D. Fowler, D. Cox, M. Carter and A. Ogunleke: “*Design and Demonstration of Automated Technologies for the Fabrication and Testing of PEM Fuel Cell Systems*”, *International Journal of Mechanical Engineering and Robotics Research*, vol. **9** (5), pp. 640-645; doi: 10.18178/ijmerr.9.5.640-645 (2020)
5. D. Fowler, V. Gurau and D. Cox: “*Bridging the Gap between Automated Manufacturing of Fuel Cell Components and Robotic Assembly of Fuel Cell Stacks*”, *Energies*, vol. **12**, pp. 3604; doi:10.3390/en12193604 (2019)
6. V. Gurau, D. Fowler and D. Cox: “*Robotic Technologies for Proton Exchange Membrane Fuel Cell Assembly*”, in *Proton Exchange Membrane Fuel Cell*, T. Taner editor. Chapter 3, IntechOpen, London; doi.org/10.5772/intechopen.71470 (2018)
7. V. Gurau and T. Armstrong-Koch: “*Further Improvements of an End-Effector for Robotic Assembly of Polymer Electrolyte Membrane Fuel Cells*”, *Energies*, Vol.8, (9), pp. 9452-9463; doi: 10.3390/en8099452 (2015)

8. M. Williams, K. Tignor, L. Sigler, C. Rajagopal and V. Gurau: “*Robotic Arm for Automated Assembly of Proton Exchange Membrane Fuel Cell Stacks*”, *The Journal of Fuel Cell Science and Technology*, vol. **11** (5), 054501, doi:10.1115/1.4027392 (2014)
9. V. Gurau: “*Demonstration of an Automated Assembly Process for Proton Exchange Membrane Fuel Cells Using Robotic Technology*”, *American Society of Engineering Education*, paper ID: #9865, (2014)
10. V. Gurau: “*Investigation of a Manufacturing Process for Intermediate to Mass Production of Polymer Graphite Based Bipolar Plates for Proton Exchange Membrane Fuel Cells*”, *American Society of Engineering Education*, paper ID: #9868, (2014)
11. V. Gurau and J.A. Mann: “*Technique for Characterization of the Wettability Properties of thin Gas Diffusion Media for Proton Exchange Membrane Fuel Cells*”, *The Journal of Colloid and Interface Science*, vol. **350** (2) pp.577-580 (2010)
12. V. Gurau and J.A. Mann: “*Effect of Interfacial Phenomena at the Gas Diffusion Layer-Channel Interface on the Water Evolution in a PEM Fuel Cell*”, *Journal of the Electrochemical Society*, vol. **157**, pp. B512-B521 (2010)
13. V. Gurau and J.A. Mann: “*A Continuum Model for Water Transport in the Ionomer-Phase of Catalyst Coated Membranes for PEMFCs*”, Special Issue on Micro/Nanotransport Phenomena in Renewable Energy and Energy Efficiency, *Advances in Mechanical Engineering*, vol. **2010**, Article ID **372795**, doi:10.1155/2010/372795 (2010)
14. V. Gurau and J.A. Mann: “*A Critical Overview of Computational Fluid Dynamics Multiphase Models for Proton Exchange Membrane Fuel Cells*”, Special Issue on Fuel Cells: Modeling, Analysis, and Computation, *SIAM Journal of Applied Mathematics*, vol. **70**, pp. 410-454 (2009)
15. V. Gurau, T.A. Zawodzinski Jr., J. A. Mann: “*Spatiotemporal Behavior of Water and Two-Phase Transport in the Porous Electrodes for PEM Fuel Cells*”, *215th ECS Transactions, Characterization of Porous Materials 2*, vol. **19**, pp. 29-38 (2009)
16. V. Gurau: “*Response to “Comment on ‘A Look at the Multiphase Mixture Model for PEM Fuel Cell Simulations’”*”, *Electrochemical and Solid-State Letters* vol. **12**, pp. S4-S6 (2008)
17. V. Gurau, Edwards R.V., J. A. Mann, T.A. Zawodzinski Jr.: “*A Look at the Multiphase Mixture Model for PEM Fuel Cell Simulations*”, *Electrochemical and Solid-State Letters* vol. **11**, pp. B132-B135 (2008)
18. V. Gurau, T.A. Zawodzinski Jr., J. A. Mann: “*Two-Phase Transport In PEM Fuel Cell Cathodes*”, Special Issue on Modeling and Simulation of PEM Fuel Cells, *Journal of Fuel Cell Science and Technology*, vol. **5**, pp. 021009-1-12 (2008)
19. V. Gurau, T. Zawodzinski and R.J. Wayne: “*In-Situ Characterization of GRAFCELL® Flexible Graphite Film as Gas Diffusion Layers for PEMFCs*”, *214th ECS Transactions*, vol. **16**, No. 2, pp. 1651-1659, (2008)
20. V. Gurau, M. Bluemle, E. S. De Castro, Y. M. Tsou, T. A. Zawodzinski Jr., J. A. Mann: “*Characterization of Transport Properties in Gas Diffusion Layers for Proton Exchange Membrane Fuel Cells; 2. Absolute Permeability*”, *Journal of Power Sources* vol. **165** pp. 793–802 (2007)
21. M. Hoorfar, H. Najjaran, V. Gurau and J. A. Mann: “*Measurement of Surface Properties of Gas Diffusion Layers to Improve Water management in PEM Fuel Cells*”, *Proceedings of the Second European Fuel Cell Technology and Applications Conference EFC 2007, Rome, Italy, Dec. 11-14* (2007)
22. V. Gurau, M. Bluemle, E. S. De Castro, Y. M. Tsou, J. A. Mann, T. A. Zawodzinski Jr.: “*Characterization of Transport Properties in Gas Diffusion Layers for Proton Exchange Membrane Fuel Cells; 1. Wettability (Internal Contact Angle to Water and Surface Energy of GDL Fibers)*”, *Journal of Power Sources* vol. **160**, pp.1156–1162 (2006)
23. V. Gurau, T.A. Zawodzinski Jr., J. A. Mann: “*Numerical Investigation of Water Transport in the PEMFC Components*”, *ECS Transactions*, vol. **3**, No.1, pp. 1095-1104, (2006)

24. M. Bluemle, V. Gurau, J. A. Mann, T. A. Zawodzinski Jr., E. S. De Castro, Y. M. Tsou: “*Characterization of transport properties in gas diffusion layers for PEMFCs*”, *Electrochemical Society Proceedings*, vol. **PV 2004-21**, pp. 442-450 (2004)
25. V. Gurau, T. Greszler, T. A. Zawodzinski Jr.: “*CFD Model for Reformate Operating Fuel Cell*”, *2004 Fuel Cell Seminar*. San Antonio, TX, November 1-5 (2004)
26. M. Bluemle, V. Gurau, J. A. Mann, T. A. Zawodzinski Jr., E. S. De Castro, Y. M. Tsou: “*Permeability and Wettability Measurements for Gas Diffusion Layers for PEM Fuel Cells*”, *2004 Fuel Cell Seminar*, San Antonio, TX, November 1-5, (2004)
27. V. Gurau, F. Barbir, H. T. Liu: “*An Analytical Solution of a Half-Cell Model for PEM Fuel Cells*”, *Journal of the Electrochemical Society*, vol. **147**, pp. 2468-2477 (2000)
28. V. Gurau, H. T. Liu, S. Kakaç: “*Two Dimensional Mathematical Model for Proton Exchange Membrane Fuel Cells*”, *AIChE Journal* vol. **44** (1998), pp. 2410-2422 (1998)
29. V. Gurau, F. Barbir, H. T. Liu: “*Two-Dimensional Model for the Entire Sandwich of a PEM Fuel Cell*”, *Proceedings of the 194th Meeting of the Electrochemical Society*, the Second International Symposium on Proton Conducting Membrane Fuel Cell Systems, Boston, MA, November 1-6, (1999)
30. V. Gurau, S. Kakaç, H. Liu: “*Mathematical Model for Proton Exchange Membrane Fuel Cells*”, *Proceedings of the ASME Advanced Energy Systems Division*, AES vol. **38**, pp. 205–214, (1998)

Patents

1. V. Gurau, L. Busby: 17/331,124: *Autonomous Robotic Forest Rover for Automated Resin Collection* (2021)
2. V. Gurau: US 2015/0158179 A1: *Robotic Fuel Cell Assembly System*.
3. R.K. Wynne, J.K. Neutzler, F. Barbir, V. Gurau, W.E. Pierce: US 6,207,312 (United States); EP 1,116,297 (Europe) *Self-Humidifying Fuel Cell*
4. V. Gurau, F. Barbir, J.K. Neutzler: US 3,6,551,736 (United States); WO 0,237,592 (Europe) *Fuel Cell Collector Plate with Improved Mass Transfer Channels*
5. V. Gurau, C. Zawodzinski, T. Zawodzinski, J. Wainright: 2005/019,1541 A1 (United States): *Fuel Cell System with Flow Field Capable of Removing Liquid Water from the High-Pressure Channels*

Conference Presentations

1. V. Gurau: “*Design and Demonstration of Automated Technologies for the Fabrication and Testing of PEM Fuel Cell Systems*” *International Conference on Mechanical, Materials and Manufacturing*, 12-14 Oct. 2019, Boston, MA.
2. V. Gurau: “*Investigation of a Manufacturing Process for Intermediate to Mass Production of Polymer Graphite Based Bipolar Plates for Proton Exchange Membrane Fuel Cells*”, *121st ASEE Annual Conference and Exposition*, Indianapolis, IN, June 15, 2014
3. V. Gurau: “*Demonstration of an Automated Assembly Process for Proton Exchange Membrane Fuel Cells Using Robotic Technology*”, *121st ASEE Annual Conference and Exposition*, Indianapolis, IN, June 16, 2014
4. J. Miller, J. Ripple, J. Rippl, J. Baker and V. Gurau: “*Compression Molding of Graphite-Based Bipolar Plates for Proton Exchange Membrane Fuel Cells*” *2013 Ohio Fuel Cell Symposium*, May 1-2, Elyria, OH (2013)

5. K. Tignor, W. Newton, A. Milarcik, G. Williamson, G. Bales, A. Swick, K. Fox, L. Siegler, C. Sayre, M. Williams, V. Gurau and C. Rajagopal: "*Robotic Arm for PEM Fuel Cell Assembly*" *2011 Ohio Fuel Cell Symposium*, April 18, North Canton, OH (2011)
6. V. Gurau and J.A. Mann: "*Water Transport in the Ionomer-Phase and Across its Interfaces in Catalyst Coated Membranes for Proton Exchange Membrane Fuel Cells*" *217th Electrochemical Society Meeting*, April 25-30, Vancouver, (2010)
7. V. Gurau, T.A. Zawodzinski Jr., J. A. Mann: "*Spatiotemporal Behavior and Two-Phase Transport in Porous Electrodes of PEM Fuel Cells*", *215th Meeting of the Electrochemical Society*, San Francisco, CA, May 24-29, (2009)
8. V. Gurau, J.A. Mann, T.A. Zawodzinski Jr., J.M. Larson and M.T. Hicks: "*Effect of the GDL Degradation on its Transport Properties*", *213th ECS Meeting*, Phoenix, AZ, May 18-22 (2008)
9. V. Gurau: "*In-Situ Characterization of GrafTech Materials for Cathode GDLs of PEMFCs*", *3rd MEA Manufacturing Symposium*, Dayton, OH, August 21-23, (2007)
10. V. Gurau, T.A. Zawodzinski Jr., J. A. Mann: "*Two-Phase Transport In PEM Fuel Cell Cathodes*", *Workshop on Modeling and Simulation of PEM Fuel Cells*, Berlin, Germany, September, 18-20, (2006)
11. V. Gurau, T.A. Zawodzinski Jr., J. A. Mann: "*Characterization, Test and Evaluation of Gas Diffusion Layers for PEM Fuel Cells*", *2nd MEA Manufacturing Symposium*, Dayton, OH, August 22-24, (2006)
12. V. Gurau, J.A. Mann, T.A. Zawodzinski Jr.: "*Numerical Investigation of Water Transport in the PEMFC Components*", *210th ECS Meeting*, Cancun, Mexico, Oct 29-Nov 3 (2006)
13. M. J. Bluemle, V. Gurau, J. A. Mann, Jr., T. A. Zawodzinski Jr., E. S. De Castro, Y.M. Tsou: "*Characterization of Transport Properties in Gas Diffusion Layers for PEMFCs*" *206th ECS Meeting*, Honolulu, HI, Oct 3-8 (2004)
14. V. Gurau, R. Srivastava, D. Roelant, A. Ebadian: "*Proton Exchange Membrane Fuel Cell Technology Development at FIU-HCET*" *DARPA Palm Power Workshop*, Fort Lauderdale, FL, November 14-15, (2000)
15. V. Gurau, H. T. Liu, S Kakaç: "*Mathematical Model for Proton Exchange Membrane Fuel Cells*", *ASME International Mechanical Engineering Congress and Exposition*, Anaheim, CA, November 15-20, (1998)
16. V. Gurau, H. T. Liu, A. Kazim: "*2-D, Non-Isothermal Mathematical Model and Performance Analysis of an Oxygen-Hydrogen PEM Fuel Cell*", *Second Trabzon International Energy and Environment Symposium*, Trabzon, Turkey, 26-29 July (1998)

GRANTS AWARDED AND PRINCIPAL INVESTIGATOR

Georgia Southern University

1. USDA-NIFA-SBIR, 2019-33610-29797 (granted \$99,518) "*Unmanned, Fully-Autonomous, Long-Endurance Robotic Forest Rover for Automated Pine Resin Collection - Phase I*"
2. GSU-CEC-Seed Grant (granted \$6,500) "*Design and Fabrication of Innovative Surgical Implant for Spinal Stabilization*"

Kent State University, Case Western Reserve University

3. Ohio Third Frontier Technology Validation and Start-Up Fund (granted: \$53,232) "*End Effector and Robot Workcell for Automated Assembly of Fuel Cell Stacks using Robotic Technology*"
4. Dominion East Ohio Grant (granted \$30,000): "*Development of an Educational Program in Green and Alternative Energy at College Level*"

5. Rosenberg Foundation Grant (granted \$19,748): *“Acquisition of Laboratory Equipment for Green and Alternative Energy”*
6. 21st Century Grant for STEM Initiatives (applied jointly with Dover High School). The fund supported the offering of two credit hours in Green and alternative Energy for high school students.
7. Department of Energy, DE-PS36-07GO97012: *“Numerical Simulations of Phosphoric Acid-Doped Polybenzimidazole Fuel Cells”* (granted \$99,000). Collaboration with BASF Fuel Cell, Inc.
8. General Motors: *“Gas Diffusion Medium Internal Contact Angle Measurement”*. Collaboration with General Motors Company, Electrochemical Energy Research Laboratory.
9. Ohio Third Frontier: *“In-situ characterization of GrafTech materials for cathode gas diffusion layers of proton exchange membrane fuel cells”* (\$30,000). Collaboration with GrafTech, Inc.

RESEARCH AWARDS

Faculty Excellence Award for Research, 2014 (Kent State University)

STUDENT ADVISING

Georgia Southern University

- Devin Fowler. Thesis Dissertation: *“Hydrogen Fuel Cell Gasket Handling and Sorting with Machine Vision Integrated Dual Arm Robot”*
- Matthew Carter. *“Robotic Workcell for Automated Fabrication of Graphite Plates”*
- Matthew Jones, Peyton McGaha, Nicholas Anthony, Hank Frazer, Jaelin Hakim, Connor O’Neil, Joseph Putnal and Dalvin Andrews. Student Research Colloquium: *“Design, Fabrication and Testing of Peristaltic Pump for Methanol Reformer”*
- Jakeb Burkes, Jonathan Pardo. *“Design and Fabrication of Innovative Surgical Implant for Spinal Stabilization”*
- Frances Strickland. *“Robotic Workcell for Automated Fabrication of Graphite Plates”*
- Frances Strickland. *“Fabrication of Methanol Reformer for on-board Production of Hydrogen”*
- Beau Ragland, Charles Ginn, Frances Strickland, Jakeb Burkes. *“Unmanned, Fully Autonomous Robotic Forest Rover”*
- Alejandro Porcella Chame. *“Design, Optimization and Integration of Hybrid Electric Powertrain of 250 W Proton Exchange Membrane Fuel Cell and 40 Ah Lithium Iron Phosphate (LiFePO₄) Battery for Extended Autonomy of Field Robots”*
- Ryan Kent. *“Flexible Manufacturing System for Robotic Machining of Fuel Cell Flow Field Graphite Plates”*

SERVICE ACTIVITIES

Georgia Southern University

Service to Profession

- Member of the Society of Manufacturing Engineering (SME)
- Member of the Editorial Board for *Energies*
- Guest and Academic Editor for *Energies*, Special Issue: Proton Exchange Membrane Fuel Cells, 2021
- Guest and Academic Editor for *Energies*, Special Issue: *Polymer Electrolyte Membrane Fuel Cells*, 2019
- Guest and Academic Editor for *Energies*, Special Issue: *Polymer Electrolyte Membrane Fuel Cells*, 2017
- Guest and Academic Editor for *Energies*, Special Issue: *Polymer Electrolyte Membrane Fuel Cells*, 2016
- Guest and Academic Editor for *Energies*, Special Issue: *Polymer Electrolyte Membrane Fuel Cells*, 2015
- Peer reviewer for *Energies*, *Journal of Power Sources*, *International Journal of Hydrogen Energy*, *Journal of the Electrochemical Society*, *SIAM Journal of Applied Mathematics*, *American Society of Engineering Education*, *Engineering Applications of Computational Fluid Mechanics*, *Polymer*, *Entropy*, *Applied Sciences*, *Membranes*, *Sensors*, *Processes*, *Journal of Engineering for the Maritime Environment*.
- Session Chair for “*Engineering Material Design and Intelligent Manufacturing Technology*”, 2019, 6th International Conference on Mechanical, Materials and Manufacturing (ICMMM 2019)

Service to College of Engineering and Computing

- Member of the *Governance Committee*. I participated in discussions, proposed and voted modifications for amended by-Laws and Policies and Procedures Manuals of the College of Engineering and Information Technology.

Service to the Department of Manufacturing Engineering

- *Student Laboratory Safety Committee* – Chair. Called for safety meetings; prepared safety documentations and Standard Operating Procedures for laboratory equipment.
- *ABET Committee* – member. Participated in discussions and prepared documents for 2019 ABET accreditation including course assessment forms, student learning outcomes, performance indicators and course rubrics.
- *Undergraduate Program Committee* – member. Participated in discussions and voted modifications for the undergraduate program.
- *FMS and Robotics Committee* – member. Run the FMS system, monitor the production and fill Production Run Logs.
- *Outreach to K-12 Committee* – member. Promote the Department of Manufacturing Engineering to grade school and high school students during visits to schools or student visits to the campus.
- Attend the department weekly meetings.
- Promote the department to visitors and prospective students by participating in laboratory tours.

Service to Students

- Provide mentorship and advising to students
- Write letters of recommendation for employment

Service to Community

- Served as project mentor for the High Schools Design Challenge. My role was to oversee high school students’ project planning and the design process, making recommendations where appropriate; to ensure that safety protocol for manufacture and assembly is communicated to students; to approve major design choices made by students.