CURRICULUM VITAE

Po-Ya Abel Chuang, Ph.D.
Professor and Chair, Mechanical and Aerospace Engineering, University of California, Merced
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RESEARCH INTERESTS:

Proton exchange membrane fuel cell and water electrolyzer, alkaline exchange membrane fuel cell and water electrolyzer, CO2 electrolyzer, heat exchanger, thermal management, two-phase heat transfer and fluid flow, loop heat pipe, porous material, and carbon fiber.

EDUCATION:

1. **Executive MBA**, Rochester Institute of Technology **08/08—11/09**
2. **Doctor of Philosophy**, Mechanical Engineering, Penn State University **08/99—12/03**
3. **Master of Science**, Aerospace Engineering, NCKU, Tainan, Taiwan **09/95—06/97**
4. **Bachelor of Science**, Aerospace Engineering, NCKU, Tainan, Taiwan **09/91—06/95**

CURRENT POSITIONS:

1. **Professor and Chair**, Mechanical and Aerospace Engineering, UC Merced, CA **07/26—Present**
   Lead department activities, taught undergraduate and graduate level courses and researched on hydrogen and electrochemical related topics

PREVIOUS PRIMARY POSITIONS HELD:

1. **Professor and Vice Chair**, Mechanical and Aerospace Engineering, UC Merced, CA **07/25—06/26**
2. **Associate Professor**, Mechanical Engineering, University of California Merced, CA **07/21—06/25**
3. **Assistant Professor**, School of Engineering, University of California Merced, CA **07/14—06/21**
4. **Assistant Professor**, Mechanical Engineering Technology, Purdue University, IN **08/12—06/14**
5. **Assistant Professor**, Institute of Energy Engineering, National Central University, Taiwan **08/11—07/12**
6. **Sr. Research Engineer/Team Lead**, General Motors Corp., Honeoye Falls, NY **04/06—07/11**
7. **Sr. Research Engineer**, General Motors Corp., Honeoye Falls, NY **02/05—04/06**
8. **Postdoctoral Scholar,** Penn State University, University Park, PA **01/04—01/05**
9. **Research Assistant,** Penn State University, University Park, PA **08/00—12/03**
10. **Teaching Assistant and Instructor,** Penn State University, University Park, PA **01/00—08/00**
11. **F16 Avionics Technician**, Taiwan Air Force, Chiayi, Taiwan **07/97—06/99**

SECONDARY POSITIONS HELD:

1. **Faculty Committee,** Mirai Zero Emission Research Center, University of Yamanashi, Japan **11/25—3/27**
2. **Invited Visiting Professor**, I2CNER, Kyushu University, Japan **01/25—04/25**
3. **Innovation Campus Future Mobility (ICM) Fellow**, Karlsruhe, Germany **09/23—12/26**
4. **Visiting Professor**, Faculty Mini Sabbatical Program, LLNL, Livermore, CA **05/24—08/24**
5. **KIT International Excellence Fellow**, Ulm, Germany **5/22—1/23**
6. **International Advisory Board member**, Philippine Engineering Journal **1/22—12/23**
7. **Lead consultant**, TECE Technologies, Merced, CA **07/16—Present**
8. **Visiting Professor**, Fuel Cell Research, National Renewable Energy Laboratory, CO **05/16—12/16**
9. **Research Fellow**, Discovery Park, Purdue University, IN **07/12—06/13**
10. **Consultant**, Industrial Technology Research Institute, Tainan, Taiwan **01/12—07/12**
11. **Consultant**, Omega Piezo Technologies, Inc., State College, PA **02/04—05/04**
12. **Research Engineer, TTH Research, Inc., Laurel, MD** **05/01—12/03**

PUBLICATIONS:

1. Tanaka, Akihisa, Joy Marie Mora, Keisuke Nagato, and Po-Ya Abel Chuang. "Static and dynamic rheo-impedance characterization of PEMFC catalyst inks." Electrochemistry Communications (2026): 108165. https://doi.org/10.1016/j.elecom.2026.108165
2. Kakati, Nitul, Ayon Karmakar, Marc Francis Labata, and Po-Ya Abel Chuang. "Reduced Nickel Cobalt Tungstate as an Efficient Electrocatalyst for Urea-Assisted Hydrogen Production." Journal of Composites Science 10, no. 3 (2026): 157. https://doi.org/10.3390/jcs10030157
3. Najafianashrafi, Zabihollah, and Po-Ya Abel Chuang. "CFD simulation of anisotropic heat transfer and water vapor condensation in gas diffusion layer of a fuel cell." International Journal of Heat and Mass Transfer 263 (2026): 128664. https://doi.org/10.1016/j.ijheatmasstransfer.2026.128664
4. Salehian, Shadi, Joy Marie Mora, Haoyu Li, Daniel Esau, Min Hwan Lee, André Weber, and Po-Ya Abel Chuang. "Experimental and Analytical Study of an Anode-Supported Solid Oxide Fuel Cell." Applied Sciences 16, no. 3 (2026): 1497. https://doi.org/10.3390/app16031497
5. Marufu, Michell, Maxwell Goldman, R. Dominic Ross, Jongmin Lee, Jack Davis, Michael Troksa, Eric Krall, Po-Ya Abel Chuang, et al. "Low-frequency electrochemical pulsing to manage flooding and salt precipitation in zero-gap CO 2-to-ethylene electrolyzers." EES Catalysis (2026). https://doi.org/10.1039/D6EY00012F
6. Tesfaye, Robel Mehari, Ayon Karmakar, Joy Marie Mora, Mrittunjoy Sarker, and Po-Ya Abel Chuang. "Ru-Based Supported Catalysts for Oxygen Evolution Reactions: A Mini Review." ACS Applied Energy Materials (2026). https://doi.org/10.1021/acsaem.5c03459
7. Najafianashrafi, Zabihollah, Heng Zhang, Joy Marie Mora, and Po-Ya Abel Chuang. "Transient 2D numerical study of water transport in porous media of a fuel cell using VOF model." Energy Conversion and Management: X (2025): 101484. https://doi.org/10.1016/j.ecmx.2025.101484
8. Karmakar, Ayon, and Po-Ya Abel Chuang. "Semicrystalline Nickel Cobalt Tungstate Solid-Solution for Enhanced Electrocatalytic Oxygen Evolution Activity in Alkaline Media." ACS Applied Energy Materials 8, no. 23 (2025): 17322-17333. https://doi.org/10.1021/acsaem.5c02641
9. Raab, Sebastian, Ayon Karmakar, Po-Ya Abel Chuang, and André Weber. "Effect of Ionomer-to-Carbon Ratio on PEMFC Carbon Corrosion: An Electrochemical Study." Journal of The Electrochemical Society 172, no. 11 (2025): 114508. https://doi.org/10.1149/1945-7111/ae1b3d
10. Labata, Marc Francis, Joy Marie Mora, Guangfu Li, Jim Ciston, and Po-Ya Abel Chuang. "Iridium-cobalt oxide synthesized via surfactant-assisted Adams fusion for efficient oxygen evolution in acidic and alkaline media." Chemical Engineering Journal 524 (2025). https://doi.org/10.1016/j.cej.2025.168970
11. Mora, Joy Marie, Guangfu Li, Joey Ocon, and Po-Ya Abel Chuang. "Unraveling Alkaline Oxygen Evolution Reaction: From Ionomer Binder Materials to Electrode Engineering." ACS Applied Materials & Interfaces (2025). https://doi.org/10.1021/acsami.5c06148
12. Eze, Chika, Jingyuan Zhao, Huaqiang Liu, Yu Shi, Dukhyun Chung, Jiyun Zhao, Guanhua Chen, and Abel Chuang. "Coupled electrochemical-thermal analysis of the novel TESLA-type large format 4680 cylindrical lithium-ion battery under normal and extreme conditions." Journal of Power Sources 645 (2025): 237164. https://doi.org/10.1016/j.jpowsour.2025.237164
13. Hensle, Niklas, Justin Hoffmann, Zabihollah Najafianashrafi, Tom Smolinka, Po-Ya Abel Chuang, and André Weber. "Understanding the use of carbon-based porous transport layers at the cathode in PEM water electrolysis." Journal of Power Sources 642 (2025): 236913. https://doi.org/10.1016/j.jpowsour.2025.236913
14. Sarker, Mrittunjoy, Joy Marie Mora, Felipe Mojica, Ami C. Yang-Neyerlin, Bryan Pivovar, Daniel S. Hussey, David L. Jacobson, Jacob M. LaManna, and Po-Ya Abel Chuang. "Sensitivity study of operating conditions and liquid water transport behavior in an anion exchange membrane fuel cell aided by modeling and neutron radiography." Energy Conversion and Management 333 (2025): 119750. https://doi.org/10.1016/j.enconman.2025.119750
15. Labata, Marc Francis, Nitul Kakati, Guangfu Li, Virginia Altoe, and Po-Ya Abel Chuang. "Exploring the Structure–Function Relationship in Iridium–Cobalt Oxide Catalyst for Oxygen Evolution Reaction across Different Electrolyte Media." ACS Catalysis 15 (2025): 1715-1726. https://doi.org/10.1021/acscatal.4c06814
16. Prado, Desiree Mae S., Guangfu Li, Julie Anne D. del Rosario, Joey D. Ocon, and Po‐Ya Abel Chuang. "Improved Oxygen Reduction Reaction Activity of Graphene via Mechanochemical Activation and Halogen‐Doping." ChemElectroChem 12, no. 1 (2025): e202400494. https://doi.org/10.1002/celc.202400494

17. Tubalinal, Honesto Ovid S., Michael T. Castro, Myron T. Alcanzare, DJ Donn C. Matienzo, Julie Anne DR Paraggua, **Po-Ya Abel Chuang**, and Joey D. Ocon. "Prospects of green hydrogen production in the Philippines from solar photovoltaic and wind resources: A techno-economic analysis for the present and 2030." *Renewable Energy* 235 (2024): 121286. https://doi.org/10.1016/j.renene.2024.121286
18. Samaniego, Angelo Jacob, Mrittunjoy Sarker, Zabihollah Najafianashrafi, **Po-Ya Abel Chuang**, Magdaleno Vasquez Jr, Joey D. Ocon, Chenxi Xu, and Richard Espiritu. "Dimensionally stable cellulose acetate-chitosan semi-interpenetrating polymer network as fuel cell anion exchange membrane." *ACS Applied Polymer Materials* 6, no. 15 (2024): 9047-9058. https://doi.org/10.1021/acsapm.4c01353
19. Zhu, Jiyong, Anahitha Asadi, Dongxin Kang, Joey Chung-Yen Jung, **Po-Ya Abel Chuang**, and Pang-Chieh Sui. "Bipolar membranes electrodialysis of lithium sulfate solutions from hydrometallurgical recycling of spent lithium-ion batteries." *Separation and Purification Technology* (2024): 128715. https://doi.org/10.1016/j.seppur.2024.128715
20. Yang, Donglei, Nitul Kakati, Mrittunjoy Sarker, Felipe Mojica, and **Po-Ya Abel Chuang**. "The Formation–Structure–Functionality Relationship of Catalyst Layers in Proton Exchange Membrane Fuel Cells." Energies 17, no. 9 (2024): 2093. https://doi.org/10.3390/en17092093
21. Zhang, Heng, Hao Hu, Mrittunjoy Sarker, Xuanyu Shao, Zhigang Zhan, Pang-Chieh Sui, and **Po-Ya Abel Chuang**. "Numerical investigation of effect of mechanical compression on the transport properties of fuel cell microporous layer using a pore-scale model." International Journal of Hydrogen Energy 62 (2024): 591-600. https://doi.org/10.1016/j.ijhydene.2024.03.102
22. Eze, Chika, Jingyuan Zhao, Dukhyun Chung, Mohammad Fakhimi Bonab, Abel Chuang, Andrew F. Burke, and Guanhua Chen. "Numerical heat generation analysis of the tabbed and novel tabless designs of cylindrical-type lithium-ion batteries." Applied Thermal Engineering 246 (2024): 122879. https://doi.org/10.1016/j.applthermaleng.2024.122879
23. Mehrazi, Shirin, Taymaz Homayouni, Nitul Kakati, Mrittunjoy Sarker, Philip Rolfe, and **Po-Ya Abel Chuang**. "A Rheo-Impedance investigation on the interparticle interactions in the catalyst ink and its impact on electrode network formation in a proton exchange membrane fuel cell." Applied Energy 359 (2024): 122680. https://doi.org/10.1016/j.apenergy.2024.122680
24. Kakati, Nitul, Lawrence Anderson, Guangfu Li, Desiree Mae Sua-An, Ayon Karmakar, Joey D. Ocon, and **Po-Ya Abel Chuang**. "Indispensable Nafion Ionomer for High-Efficiency and Stable Oxygen Evolution Reaction in Alkaline Media." *ACS Applied Materials & Interfaces* 15, no. 48 (2023): 55559-55569. https://doi.org/10.1021/acsami.3c08377
25. Acedera, Rose Anne, Alicia Theresse Dumlao, DJ Donn Matienzo, Maricor Divinagracia, Julie Anne Paraggua, **Po-Ya Abel Chuang**, and Joey Ocon. "Templated synthesis of transition metal phosphide electrocatalysts for oxygen and hydrogen evolution reactions." *Journal of Energy Chemistry* (2023). https://doi.org/10.1016/j.jechem.2023.10.044
26. Liu, Cheng, Maji Luo, Roswitha Zeis, **Po-Ya Abel Chuang**, Ruiming Zhang, Shaojie Du, and Pang-Chieh Sui. "Fabrication of catalyst layer for proton exchange membrane water electrolyzer: I. Effects of dispersion on particle size distribution and rheological behavior."*International Journal of Hydrogen Energy* 52 (2024): 1143-1154. https://doi.org/10.1016/j.ijhydene.2023.08.154
27. Mehrazi, Shirin, Mrittunjoy Sarker, and **Po-Ya Abel Chuang**. "Effect of high aspect ratio additives on microstructural and mass transport properties of the microporous layer in a proton exchange membrane fuel cell." *Journal of Power Sources* 580 (2023): 233361. https://doi.org/10.1016/j.jpowsour.2023.233361
28. Zhang, Heng, Mrittunjoy Sarker, Md Azimur Rahman, Zhigang Zhan, Pang-Chieh Sui, and **Po-Ya Abel Chuang**. "Numerical investigation and experimental validation of water condensation in the gas diffusion layer with different properties." *Journal of Cleaner Production* 402 (2023): 136792. https://doi.org/10.1016/j.jclepro.2023.136792
29. Zhang, Heng, Xuanyu Shao, Zhigang Zhan, Mrittunjoy Sarker, Pang-Chieh Sui, **Po-Ya Abel Chuang**, and Mu Pan. "Pore-Scale Modeling of Microporous Layer for Proton Exchange Membrane Fuel Cell: Effective Transport Properties." *Membranes* 13, no. 2 (2023): 219. https://doi.org/10.3390/membranes13020219
30. Mora, Joy Marie, Mrittunjoy Sarker, Zabihollah Najafianashrafi, Md Azimur Rahman, Ami C. Yang-Neyerlin, Bryan Pivovar, and **Po-Ya Abel Chuang**. "Analytical-based simulation approach for an anion exchange membrane fuel cell."*Energy Conversion and Management* 273 (2022): 116382. https://doi.org/10.1016/j.enconman.2022.116382

31. Castro, Michael T., **Po-Ya Abel Chuang**, and Joey D. Ocon. "Multiphysics Modeling of a Low Voltage Acid-Alkaline Electrolyzer."*Chemical Engineering Transactions* 94 (2022): 247-252. https://doi.org/10.3303/CET2294041
32. Castro, Michael T., Joy Marie Mora, Nitul Kakati, **Po-Ya Abel Chuang**, and Joey D. Ocon. "A multiphysics model of a proton exchange membrane acid-alkaline electrolyzer. "*Energy Conversion and Management* 267 (2022): 115829. https://doi.org/10.1016/j.enconman.2022.115829
33. Rahman, Md Azimur, Mrittunjoy Sarker, Felipe Mojica and **Po-Ya Abel Chuang**. "A physics-based 1-D PEMFC model for simulating two-phase water transport in the electrode and gas diffusion media." *Applied Energy* 316 (2022): 119101 https://doi.org/10.1016/j.apenergy.2022.119101
34. Naranjani, Benyamin, Zabihollah Najafianashrafi, Christopher Pascual, Ireneo Agulto, and **Po-Ya Abel Chuang**. "Computational analysis of the environment in an indoor vertical farming system." *International Journal of Heat and Mass Transfer* 186 (2022): 122460. https://doi.org/10.1016/j.ijheatmasstransfer.2021.122460
35. Du, Shaojie, Shumeng Guan, Shirin Mehrazi, Fen Zhou, Mu Pan, Ruiming Zhang, **Po-Ya Abel Chuang**, and Pang-Chieh Sui. "Effect of dispersion method and catalyst on the crack morphology and performance of catalyst layer of PEMFC." *Journal of The Electrochemical Society* 168, no. 11 (2021): 114506. https://iopscience.iop.org/article/10.1149/1945-7111/ac3598
36. Sarker, Mrittunjoy, Md Azimur Rahman, Felipe Mojica, Shirin Mehrazi, Wilton JM Kort-Kamp, and **Po-Ya Abel Chuang.** "Experimental and computational study of the microporous layer and hydrophobic treatment in the gas diffusion layer of a proton exchange membrane fuel cell." *Journal of Power Sources* 509 (2021): 230350. https://doi.org/10.1016/j.jpowsour.2021.230350
37. Castro, Michael T., Julie Anne D. Del Rosario, Meng Nan Chong, **Po-Ya Abel Chuang**, Jaeyoung Lee, and Joey D. Ocon. "Multiphysics modeling of lithium-ion, lead-acid, and vanadium redox flow batteries." *Journal of Energy Storage* 42 (2021): 102982. https://doi.org/10.1016/j.est.2021.102982
38. Mehrazi, Shirin, Mrittunjoy Sarker, Felipe Mojica, Philip Rolfe, and **Po-Ya Abel Chuang**. "A rheological approach to studying process-induced structural evolution of the microporous layer in a proton exchange membrane fuel cell." *Electrochimica Acta* 389 (2021): 138690. https://doi.org/10.1016/j.electacta.2021.138690
39. Zhang, Heng, Lijun Zhu, Hesam Bazargan Harandi, Kangjun Duan, Roswitha Zeis, Pang-Chieh Sui, and **Po-Ya Abel Chuang**. "Microstructure reconstruction of the gas diffusion layer and analyses of the anisotropic transport properties." *Energy Conversion and Management* 241 (2021): 114293. https://doi.org/10.1016/j.enconman.2021.114293
40. Zhang, Heng, Md Azimur Rahman, Felipe Mojica, Pang-Chieh Sui, and **Po-Ya Abel Chuang**. "A comprehensive two-phase proton exchange membrane fuel cell model coupled with anisotropic properties and mechanical deformation of the gas diffusion layer." *Electrochimica acta* 382 (2021): 138273. https://doi.org/10.1016/j.electacta.2021.138273
41. Mojica, Felipe, Md Azimur Rahman, Mrittunjoy Sarker, Daniel S. Hussey, David L. Jacobson, Jacob M. LaManna, and **Po-Ya Abel Chuang**. "Study of converging-diverging channel induced convective mass transport in a proton exchange membrane fuel cell." *Energy Conversion and Management* 237 (2021): 114095. https://doi.org/10.1016/j.enconman.2021.114095
42. Moosavi, Rouhollah, Mehdi Banihashemi, Cheng-Xian Lin, and **Po-Ya Abel Chuang**. "Combined effects of a microchannel with porous media and transverse vortex generators (TVG) on convective heat transfer performance." *International Journal of Thermal Sciences* 166 (2021): 106961. https://doi.org/10.1016/j.ijthermalsci.2021.106961
43. Kakati, Nitul, Guangfu Li, and **Po-Ya Abel Chuang**. "Insights into the Ni/C-based thin-film catalyst layer design for urea oxidation reaction in a three-electrode system." *ACS Applied Energy Materials* 4, no. 4 (2021): 4224-4233. https://doi.org/10.1021/acsaem.1c00607
44. del Rosario, Julie Anne D., Guangfu Li, Marc Francis M. Labata, Joey D. Ocon, and **Po-Ya Abel Chuang**. "Unravelling the roles of alkali-metal cations for the enhanced oxygen evolution reaction in alkaline media." *Applied Catalysis B: Environmental* 288 (2021): 119981. https://doi.org/10.1016/j.apcatb.2021.119981
45. Hsieh, Wen Lan, Adriana Signorini, **Po-Ya Abel Chuang**, and Wei Fan Chen. "Investigating students' experiences and perceptions of a flipped and adaptive online engineering thermodynamics class." *International Journal of Engineering Education* 37, no. 2 (2021): 362-375.

46. Serraon, Ace Christian F., Julie Anne D. Del Rosario, **Po-Ya Abel Chuang**, Meng Nan Chong, Yoshitada Morikawa, Allan Abraham B. Padama, and Joey D. Ocon. "Alkaline earth atom doping-induced changes in the electronic and magnetic properties of graphene: a density functional theory study." *RSC advances* 11, no. 11 (2021): 6268-6283. https://doi.org/10.1039/D0RA08115A
47. Labata, Marc Francis, Guangfu Li, Joey Ocon, and **Po-Ya Abel Chuang**. "Insights on platinum-carbon catalyst degradation mechanism for oxygen reduction reaction in acidic and alkaline media." *Journal of Power Sources* 487 (2021): 229356. https://doi.org/10.1016/j.jpowsour.2020.229356
48. Moosavi, Rouhollah, Reza Moltafet, Cheng-Xian Lin, and **Po-Ya Abel Chuang**. "Numerical modeling of fractional viscoelastic non-Newtonian fluids over a backward facing step–Buoyancy driven flow and heat transfer." *Thermal Science and Engineering Progress* 21 (2021): 100767. https://doi.org/10.1016/j.tsep.2020.100767
49. **Chuang, Po-Ya Abel**, Md Azimur Rahman, Felipe Mojica, Daniel S. Hussey, David L. Jacobson, and Jacob M. LaManna. "The interactive effect of heat and mass transport on water condensation in the gas diffusion layer of a proton exchange membrane fuel cell." *Journal of Power Sources* 480 (2020): 229121. https://doi.org/10.1016/j.jpowsour.2020.229121
50. Samaniego, Angelo Jacob, Allison Kaye Arabelo, Mrittunjoy Sarker, Felipe Mojica, Jordan Madrid, **Po-Ya Abel Chuang**, Joey Ocon, and Richard Espiritu. "Fabrication of cellulose acetate-based radiation grafted anion exchange membranes for fuel cell application." *Journal of Applied Polymer Science* 138, no. 10 (2021): 49947. https://doi.org/10.1002/app.49947
51. Mendoza, Rose Marie, Joy Marie Mora, Rinlee Butch Cervera, and **Po-Ya Abel Chuang**. "Experimental and Analytical Study of an Anode-Supported Solid Oxide Electrolysis Cell."*Chemical Engineering & Technology* 43, no. 12 (2020): 2350-2358. https://doi.org/10.1002/ceat.202000204
52. Du, Shaojie, Wenkang Li, Han Wu, **Po-Ya Abel Chuang**, Mu Pan, and Pang-Chieh Sui. "Effects of ionomer and dispersion methods on rheological behavior of proton exchange membrane fuel cell catalyst layer ink." *International Journal of Hydrogen Energy* 45, no. 53 (2020): 29430-29441. https://doi.org/10.1016/j.ijhydene.2020.07.241
53. Mojica, F., Md A. Rahman, J. M. Mora, J. D. Ocon, and **Po-Ya Abel Chuang**. "Experimental study of three channel designs with model comparison in a PEM fuel cell." *Fuel Cells* 20, no. 5 (2020): 547-557. https://doi.org/10.1002/fuce.202000002
54. Na, Woonki, Bei Gou, Jonghoon Kim, Felipe Mojica, and **Po-Ya Abel Chuang**. "Complementary cooperation dynamic characteristics analysis and modeling based on multiple-input multiple-output methodology combined with nonlinear control strategy for a polymer electrolyte membrane fuel cell." *Renewable Energy* 149 (2020): 273-286. https://doi.org/10.1016/j.renene.2019.12.059
55. Nazari, Morteza, **Po-Ya Abel Chuang**, Javad Abolfazli Esfahani, and Saman Rashidi. "A comprehensive geometrical study on an induced-charge electrokinetic micromixer equipped with electrically conductive plates." *International Journal of Heat and Mass Transfer* 146 (2020): 118892. https://doi.org/10.1016/j.ijheatmasstransfer.2019.118892
56. Li, Guang-Fu, Maricor Divinagracia, Marc Francis Labata, Joey D. Ocon, and **Po-Ya Abel Chuang**. "Electrolyte-dependent oxygen evolution reactions in alkaline media: electrical double layer and interfacial interactions." *ACS applied materials & interfaces* 11, no. 37 (2019): 33748-33758. https://doi.org/10.1021/acsami.9b06889
57. Rahman, Md Azimur, Felipe Mojica, Mrittunjoy Sarker, and **Po-Ya Abel Chuang**. "Development of 1-D multiphysics PEMFC model with dry limiting current experimental validation." *Electrochimica Acta* 320 (2019): 134601. https://doi.org/10.1016/j.electacta.2019.134601
58. Musico, Yvonne Ligaya F., Nitul Kakati, Marc Francis M. Labata, Joey D. Ocon, and **Po-Ya Abel Chuang**. "One-pot hydrothermal synthesis of heteroatom co-doped with fluorine on reduced graphene oxide for enhanced ORR activity and stability in alkaline media." *Materials Chemistry and Physics* 236 (2019): 121804. https://doi.org/10.1016/j.matchemphys.2019.121804
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60. Li, Guang-Fu, Donglei Yang, and **Po-Ya Abel Chuang**. "Defining nafion ionomer roles for enhancing alkaline oxygen evolution electrocatalysis." *ACS Catalysis* 8, no. 12 (2018): 11688-11698. http://dx.doi.org/10.1021/acscatal.8b02217

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62. Li, Guangfu, and **Po-Ya Abel Chuang**. "Identifying the forefront of electrocatalytic oxygen evolution reaction: Electronic double layer." *Applied Catalysis B: Environmental* 239 (2018): 425-432. https://doi.org/10.1016/j.apcatb.2018.08.037
63. Li, Guangfu, Lawrence Anderson, Yanan Chen, Mu Pan, and **Po-Ya Abel Chuang**. "New insights into evaluating catalyst activity and stability for oxygen evolution reactions in alkaline media." *Sustainable Energy & Fuels* 2, no. 1 (2018): 237-251. https://doi.org/10.1039/C7SE00337D
64. Mojica, Felipe Euyoqui, **Po-Ya Abel Chuang**, and Uriel Ruiz. "Solar regenerative hydrogen fuel cell charging system." In *2017 ASEE Annual Conference & Exposition*. 2017. https://peer.asee.org/28833
65. Rahman, M. A., J. M. Mora, and **P. A. Chuang**. "A computational study of flow sensitivity of a PEM fuel cell with multi-parallel flow channels." In *COMSOL Conference in Boston*. 2017.
66. Chen, Yanan, Felipe Mojica, Guangfu Li, and **Po-Ya Abel Chuang**. "Experimental study and analytical modeling of an alkaline water electrolysis cell." *International Journal of Energy Research* 41, no. 14 (2017): 2365-2373. https://doi.org/10.1002/er.3806
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73. **Chuang, P. A**., A. Turhan, A. K. Heller, J. S. Brenizer, T. A. Trabold, and M. M. Mench. "The nature of flooding and drying in polymer electrolyte fuel cells." In *International Conference on Fuel Cell Science, Engineering and Technology*, vol. 37645, pp. 31-37. 2005. https://doi.org/10.1115/FUELCELL2005-74051
74. Cimbala, John M., Jack S. Brenizer, **Abel Po-Ya Chuang**, Shane Hanna, C. Thomas Conroy, A. A. El-Ganayni, and David R. Riley. "Study of a loop heat pipe using neutron radiography." *Applied radiation and isotopes* 61, no. 4 (2004): 701-705 https://doi.org/10.1016/j.apradiso.2004.03.104
75. **Chuang, Po-Ya Abel**, John M. Cimbala, Jack S. Brenizer, and C. Thomas Conroy. "Theoretical and Experimental Study of a Loop Heat Pipe at Positive Elevation." In *ASME International Mechanical Engineering Congress and Exposition*, vol. 4711, pp. 67-74. 2004. https://doi.org/10.1115/IMECE2004-60925
76. **Chuang, Po-Ya Abel**, John M. Cimbala, Jack S. Brenizer Jr, and C. Thomas Conroy. "Analytical Modeling of a Loop Heat Pipe at Positive Elevation." In *ASME International Mechanical Engineering Congress and Exposition*, vol. 4711, pp. 629-635. 2004. https://doi.org/10.1115/IMECE2004-61171
77. **Chuang, Po-Ya Abel**, John M. Cimbala, Jack S. Brenizer Jr, C. Thomas Conroy, A. A. El-Ganayni, and David R. Riley. "Comparison of experiments and 1-D steady-state model of a loop heat pipe." In *ASME International Mechanical Engineering Congress and Exposition*, vol. 36355, pp. 87-94. 2002. https://doi.org/10.1115/IMECE2002-33542

CONFERENCE PRESENTATIONS:

1. 246th ECS PRiME Meeting, October 6-11, 2024, Honolulu, Hawaii, USA **10/9/2024**

2. 245th ECS Meeting, May 26-30, 2024, San Francisco, USA **5/26/24**
3. 8th International Symposium on Advanced Ceramics and Technology for Sustainable Engineering Applications (ACTSEA), May 9-11, 2024, Taipei, Taiwan **5/9/24**
4. Advanced Energy Storage & Conversion Technologies, International Workshop and Symposium, November 27-December 1, 2023, Taal Vista Hotel, Tagaytay City, Philippines **11/27/23**
5. International Scientific Forum on Sustainable and Green Energy Technology, November 25, 2023, Quezon City, Philippines **11/25/23**
6. 244th ECS Meeting, October 8-12, 2023, Gothenburg, Sweden **10/8/23**
7. European Electrolyzer and Fuel Cell Forum (EFCF) 27th, July 4-7, 2023, Luzern, Switzerland **7/4/23**
8. European Materials Research Society (EMRS) 2023 Spring Meeting, May 29-June 2, 2023, Strasbourg, France **5/29/23**
9. 2022 World Fuel Cell Conference (WFCC), December 12-15, 2022, Irvine, USA **12/12/22**
10. International Conference on Materials Science and Engineering in the Philippines (ICMSEP2022), November 25-26, 2022, Quezon City, Philippines **11/25/22**
11. 7th Ertl Symposium on Catalysis in Electrochemistry, October 25-28, 2022, Gwangju, Korea **10/25/22**
12. FIRA USA 2023, October 18-20, 2022, Fresno, California, USA **10/18/22**
13. 25th Conference on Process Integration for Energy Saving and pollution Reduction – PRES'22, September 5-8, 2022, Split, Croatia **9/5/22**
14. 2022 Gordon Research Conference on Fuel Cells, July 24-29, 2022, Smithfield, RI, USA **7/26/22**
15. The 5th international symposium on 'Elucidation of Next Generation Functional Materials Surface and Interface Properties', October 7, 2021, Osaka University (Virtual Conference) **10/7/21**
16. 2021 Molecular Foundry User Meeting, August 19-20, 2021, Virtual Conference **8/21/21**
17. 2021 World Fuel Cell Conference, August 17-20, 2021, Waterloo, Canada **8/17/21**
18. 239th ECS Meeting, May 30-June 3, 2021, Digital Meeting **5/30/21**
19. 238th ECS Meeting (PRiME), October 4-9, 2020, Digital Meeting **10/6/20**
20. 2020 Molecular Foundry User Meeting, August 20-21, 2020, Virtual Conference **8/21/20**
21. 2020 World Fuel Cell Conference (WFCC), August 11-14, 2020, Toronto, Canada (abstracts accepted, **conferences cancelled due to COVID-19**) **8/13/20**
22. 2020 Gordon Research Conference on Fuel Cells, July 26-31, 2020, Smithfield, RI (abstracts accepted, **conferences cancelled due to COVID-19**) **7/29/20**
23. The 4th Edition of Catalysis and Chemical Engineering (CCE 2020), February 24-26, 2020, Los Angeles, USA (abstract accepted, **didn't attend due to COVID-19**) **2/25/20**
24. 16th International Conference on Environmental Science and Technology (CEST), September 4 – September 7, 2019, Rhodes, Greece **9/6/19**
25. The 9th International Conference on Engineering and Applied Science (ICEAS 2019), August 6-8, 2019, Hawaii, USA **8/7/19**
26. 2nd International Conference on Electrolysis, June 9-13, 2019, Loen, Norway **6/10/19**
27. 235th ECS Meeting, May 26-31, 2019, Dallas, Texas **5/27/19**
28. 1st 1st International Conference on Materials Science and Engineering in the Philippines (ICMSEP2018), October 25-27, 2018, Tagaytay City, Philippines **10/25/18**
29. 69th International Society of Electrochemistry Annual Meeting, September 2-7, 2018, Bologna, Italy **9/5/18**
30. 2018 Gordon Research Conference on Fuel Cells, July 29-August 3, 2018, Smithfield, RI **7/29/18**
31. 233rd ECS Meeting, May 13-17, 2018, Seattle, Washington **5/15/18**
32. 38th PAASE Annual Meeting and Symposium (APAMS), April 6-7, 2018, Tucson, Arizona **4/6/18**
33. European Fuel Cell Conference and Exhibition, December 12-15, 2017, Naples, Italy **12/12/17**
34. American Physical Society – 2017 Annual Meeting of the Far West Section, November 3-4, 2017, Merced, CA **11/4/17**
35. COMSOL Conference 2017, October 4-6, 2017, Boston, MA **10/4/17**
36. 232nd Meeting of the Electrochemical Society, October 1-5, 2017, National Harbor, MD **10/1/17**
37. 15th International Conference on Environmental Science and Technology (CEST), August 31 – September 2, 2017, Rhodes, Greece **8/31/17**
38. The 7th World Hydrogen Technology Convention (WHTC), July 9-12, 2017, Prague, Czech Republic **7/9/17**
39. 2017 ASEE Annual Conference & Exposition, June 25-28, 2017, Columbus, Ohio **6/25/17**

40. Polymers for Fuel Cells, Energy Storage, and Conversion, Asilomar Conference Grounds, February 26-March 1, 2017, Pacific Grove, CA **2/27/17**
41. 2nd Institute of Materials Engineers of the Philippines (IMEP) Conference, October 27-28, 2016, Quezon City, Philippines **10/27/16**
42. National Electrochemical Energy Storage Workshop (NEESW), October 20-22, 2016, Quezon City, Philippines **10/22/16**
43. 2016 Gordon Research Conference on Fuel Cells, August 7-12, 2016, Easton, MA **8/10/16**
44. 46th Power Sources Conference, June 9-12, 2014, Orlando, FL **6/10/14**
45. 10th Int'l Hydrogen & Fuel Cell Expo, February 26-28, 2014, Tokyo, Japan **2/27/14**
46. 2010 Materials Research Society Fall Meeting, November 29-December 2, 2010, Boston, MA **11/29/10**
47. 2010 Fuel Cell Seminar & Exposition, October 18-22, 2010, San Antonio, TX **10/19/10**
48. 218th Meeting of the Electrochemical Society, October 10-15, 2010, Las Vegas, NV **10/14/10**
49. ASME 8th International Conference on Fuel Cell Science, June 14-16, 2010, Brooklyn, NY **6/14/10**
50. 2009 International Mechanical Engineering Congress and Exposition (IMECE), ASME, November 13-19, 2009, Lake Buena Vista, FL **11/19/09**
51. Materials Science & Technology 2009 Conference & Exhibition, October 25-29, 2009, Pittsburgh, PA **10/29/09**
52. ASME 7th International Conference on Fuel Cell Science, June 8-10, 2009, Newport Beach, CA **6/10/09**
53. 2008 Gordon Research Conference on Fuel Cells, July 20-25, 2008, Smithfield, RI **7/23/07**
54. ASME 5th International Conference on Fuel Cell Science, June 18-20, 2007, New York, NY **6/20/07**
55. ASME 3rd International Conference on Fuel Cell Science, May 23-25, 2005, Ypsilanti, MI **5/24/05**
56. 208th Meeting of the Electrochemical Society, October 16-21, 2005, Los Angeles, CA, USA **10/16/05**
57. Spring 2005 Meeting of the Electrochemical Society, May 15-20, 2005, Quebec, CANADA **5/16/05**
58. 2004 International Mechanical Engineering Congress and Exposition (IMECE), ASME, November 13-19, 2004, Anaheim, CA **11/14/04**
59. 2002 International Mechanical Engineering Congress and Exposition (IMECE), ASME, November 17-22, 2002, New Orleans, LA **11/19/02**

ISSUED PATENTS:

1. Lai, Y. H., Rapaport, P. A., **Chuang, P. A.**, Gu, W. (2017), "Fuel cell stack with improved end cell performance provided by higher modulus of elasticity." U.S. Patent No. 9,853,307. 26 Dec. 2017
2. Lai, Y. H., Rapaport, P. A., **Chuang, P. A.**, Gu, W. (2017) "Fuel cell stack with improved end cell performance through a diffusion media having lower compressibility." U.S. Patent No. 9,831,511. 28 Nov. 2017
3. **Chuang, P. A.**, Gu, W., Smith, S. G. (2012) "Fuel cell with anode and cathode plate temperature difference." U.S. Patent No. 8,323,842. 4 Dec. 2012.
4. **Chuang, P. A.**, Gu, W. (2012) "Optimized gas diffusion media to improve fuel cell performance." U.S. Patent No. 8,178,259. 15 May 2012.
5. Berning, T., Wieser, C., **Chuang, P. A.**, Trabold, T. A. (2010) "Method for optimizing diffusion media with spatially varying mass transport resistance." U.S. Patent No. 7,829,230. 9 Nov. 2010.

PATENT APPLICATIONS:

1. Li, G., **Chuang, P. A.** (Provisional Application No.: 62939869), "Iridium-based Amorphous Electrocatalyst for Oxygen Evolution Reaction and Surfactant-Assisted Adams Fusion Synthesis of same." U.S. Patent Application (January 5, 2023 Publication of US20230001402A1)
2. Fultz, D. W., Nicotera, P. D., Trabold, T. A., Dadheech, G. V., **Chuang, P. A.** (Publication number: US20110143262), "Gas diffusion media made from electrically conductive coatings on non-conductive fibers." U.S. Patent Application 12/635,352. (Filed on December 10, 2009)
3. Lai, Y. H., **Chuang, P. A**., Fowler, S., Lakshmanan, B., Miller, D. (Publication number: US 20070141405), "Method of making a membrane electrode assembly comprising a vapor barrier layer, a gas diffusion layer, or both." U.S. Patent Application 11/560,454. (Filed on November 16, 2006)

INVITED TALKS & KEYNOTE SPEECHES:

1. **"Diagnostics and Characterization of Materials and Design in Electrochemical Devices,"** Laboratory for Energy Applications for the Future (LEAF) Lecture, Lawrence Livermore National Laboratory (LLNL), June 10, 2024, Livermore, California (Invited by Dr. Christopher Hahn)
2. **"Diagnostics and Characterization of Materials and Design in Electrochemical Devices,"** Electrolysis and Hydrogen Infrastructure, Fraunhofer ISE, March 27, 2024, Freiburg, Germany (Invited by Mr. Niklas Hensle)
3. **"Diagnostics and Characterization of Materials and Design in Electrochemical Devices,"** Electrochemical Laboratory, Paul Scherrer Institute (PSI), December 20, 2023, Villigen, Switzerland (Invited by Dr. Jong Min Lee)
4. **"Diagnostics and Characterization of Materials and Design in Electrochemical Devices,"** Electrochemical Energy Technology Department, German Aerospace Center (DLR), December 15, 2023, Stuttgart, Germany (Invited by Prof. Andreas Friedrich)
5. **"Fuel Cell and Hydrogen Energy Research in the US/California,"** Plenary Talk, Advanced Energy Storage & Conversion Technologies, International Workshop and Symposium, November 27, 2023, Tagaytay City, Philippines (Invited by Prof. Joey Ocon)
6. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** Sustainable and Green Energy Technology Forum, University of the Philippines, Diliman, November 25, 2023, Quezon City, Philippines (Invited by Prof. Rinlee Butch Cervera)
7. **"Fuel Cell and Hydrogen Energy Research in the US/California,"** Plenary Talk, Mindana Clean Energy Forum 2023 & Renewable Energy Congress, November 21, 2023, Davao, Philippines (Invited by Mr. Christian Mark P. Labiano)
8. **"Diagnostics and Characterization of Materials and Design in Electrochemical Devices,"** Graduate Seminar, Chemical and Biomolecular Engineering, University of California, Irvine, November 17, 2023, Irvine, California, USA (Invited by Prof. Plamen Atanassov)
9. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** Seminar, Institute for Applied Materials – Electrochemical Technologies (IAM-ET), Karlsruhe Institute of Technology, September 8, 2023, Karlsruhe, Germany (Invited by Prof. Andre Weber)
10. **"Introduction of Fuel Cell and Water Electrolysis,"** Seminar, Fuel Cell and Water Electrolysis Workshop, Fuel Cell Center, Yuan Ze University, August 30, 2023, Taoyuan, Taiwan (Invited by Prof. Fangbor Weng)
11. **"Introduction of Electrolysis and Fuel Cell Research at UC Merced,"** Seminar, Hydrogen and Fuel Cell Nanomaterials Center, University of Yamanashi, July 31, 2023, Kofu City, Yamanashi, Japan (Invited by Prof. Donald Tryk)
12. **"Introduction of Electrochemical Research at UC Merced,"** Seminar, International Institute for Carbon-Neutral Energy Research (I2CNER), Kyushu University, July 26, 2023, Fukuoka, Japan (Invited by Prof. Tatsumi Ishihara)
13. **"Introduction of Electrolysis and Catalyst Research at UC Merced,"** *Seminar*, Green Energy and Environment Research Laboratories, Industrial Technology Research Institute (ITRI), July 11, 2023, Tainan, Taiwan (Invited by Dr. Wen-Sheng Chang)
14. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** Seminar, Mechanical Engineering, University of Miami, May 19, 2023, Miami, Florida (Invited by Prof. Hongtan Liu)
15. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** Seminar, Electrical Engineering, Florida International University, May 19, 2023, Miami, Florida (Invited by Prof. Shekhar Bhansali)
16. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** EgyE 297 - Special topic class on energy storage and conversion technologies, University of the Philippines, Diliman, May 4, 2023, Quezon City, Philippines (Invited by Prof. Rinlee Butch Cervera)
17. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** International Excellence Talk, International Office, Karlsruhe Institute of Technology, February 9, 2023, Karlsruhe, Germany (Invited by Ms. Elena Pfeifer)
18. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** Seminar, Institute for Applied Materials – Electrochemical Technologies (IAM-ET), Karlsruhe Institute of Technology, December 15, 2022, Karlsruhe, Germany (Invited by Prof. Ulrike Krewer)

19. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** Keynote, International Conference on Materials Science and Engineering in the Philippines (ICMSEP2022), November 25, 2022, Quezon City, Philippines (Invited by Prof. Rinlee Butch Cervera)
20. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** *Seminar*, Green Energy and Environment Research Laboratories, Industrial Technology Research Institute (ITRI), November 17, 2022, Tainan, Taiwan (Invited by Dr. Feng-Chia Hsu)
21. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** University of the Philippines, Diliman, October 10, 2022, Quezon City, Philippines (Invited by Prof. Joey Ocon)
22. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** Lawrence Livermore National Laboratory (LLNL), August 4, 2022, Livermore, California (Invited by Dr. Marcus Worsley)
23. **"Flipped Classroom/Online Education and Fuel Cell Research,"** National Taipei University of Technology, July 15, 2022, Taipei, Taiwan (Invited by President Sea-fue Wang)
24. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** Karlsruhe Institute of Technology (KIT), June 23, 2022, Karlsruhe, Germany (Invited by Prof. Thomas Hirth)
25. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** Helmholtz-Institute Ulm (HIU), May 24, 2022, Ulm, Germany (Invited by Prof. Roswitha Zeis)
26. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** *Online Seminar*, University of the Philippines, Diliman, May 2, 2022, Quezon City, Philippines (Invited by Prof. Rinlee Butch Cervera)
27. **"Applying Rheology to Study Catalyst Ink in a Proton Exchange Membrane Fuel Cell,"** *Online Seminar*, National Renewable Energy Laboratory (NREL), April 7, 2022, Golden, Colorado USA (Invited by Dr. Michael Ulsh)
28. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** *Online Graduate Seminar*, University of Colorado, Colorado Springs, November 18, 2021, Colorado Springs, Colorado USA (Invited by Prof. Hui Wan)
29. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** *Graduate Seminar*, University of California Merced, November 12, 2021, Merced, CA USA
30. **"Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** *Online Seminar*, University of Tehran, September 20, 2021, Tehran, Iran (Invited by Dean Reza Zarghami)
31. **"Power Electrocatalytic Materials and Design: towards Hydrogen Energy Sustainability,"** *Seminar*, **Hawai'i Natural Energy Institute (HNEI)**, **University of Hawai'i at Mānoa**, Honolulu, Hawaii, July 28, 2021, Honolulu, Hawaii (Invited by Dr. Jean St-Pierre)
32. **"Electrocatalytic Materials and Design: towards Fuel Cells Processing and Integration,"** *Online Seminar*, Amirkabir University of Technology, May 31, 2021, Tehran, Iran (Invited by Dr. Sajjad Habibzadeh)
33. **"Fuel Cell Development in the Industry,"** *Online Seminar*, University of the Philippines, Diliman, April 15, 2021, Quezon City, Philippines (Invited by Prof. Joey Ocon)
34. **"Introduction of Fuel Cell and Electrolysis Research at UC Merced,"** *Online Seminar*, Semnan University, March 8, 2021, Semnan, Iran (Invited by Dr. Saman Rashidi)
35. **"Training-Workshop on the Packaging of Collaborative Research Proposal,"** *Online Invited Talk*, Philippine-California Advanced Research Institute (PCARI), November 19, 2020, Quezon City, Philippines (Invited by Ms. Kristianne Aireen P. Peralta-Maturana)
36. **"Introduction of Fuel Cell and Electrolysis Research at UC Merced,"** *Keynote*, 8th International Seminar on Green Energy Conversion, October 24, 2019, Kofu City, Yamanashi, Japan (Invited by Prof. Donald Tryk)
37. **"Power management for an Indoor Vertical Farming System,"** *Seminar*, Commission on Higher Education, Philippines, July 19, 2019, Quezon City, Philippines (Invited by Dr. Willy Padolina)
38. **"Introduction of Fuel Cell and Electrolysis Research at UC Merced,"** *Seminar*, Technical University of Denmark, June 17, 2019, Lyngby, Denmark (Invited by Prof. Qingfeng Li)
39. **"Interactive Transport and Water Management in a PEM Fuel Cell,"** *Keynote*, 1st International Conference on Materials Science and Engineering in the Philippines (ICMSEP2018), October 25, 2018, Tagaytay City, Philippines (Invited by Prof. Rinlee Butch Cervera)

40. **"Interactive Transport and Water Management in a PEM Fuel Cell,"** *Keynote*, 2018 International Symposium of Automotive Fuel Cell Power System, September 18, 2018, Wuhan, China (Invited by Prof. Mu Pan)
41. **"Fuel Cell and Hydrogen Economy for Future Energy Solution,"** *Keynote*, e3-STArt 2018, International Academic R&D Festival, September 6, 2018, Central Luzon State University, Philippines (Invited by Dean Ireneo C. Agulto)
42. **"Design Consideration of High Power and Energy Density Fuel Cell Stack,"** *Seminar*, Green Energy and Environment Research Laboratories, Industrial Technology Research Institute (ITRI), July 17, 2018, Tainan, Taiwan (Invited by Dr. Chien-Chung Huang)
43. **"Introduction of Fuel Cell Research and Development,"** *Keynote*, Innovating and Engineering for a Sustainable Future, Advanced Engineering Colloquium 2017, Monash University Malaysia, November 27, 2017, Selangor, Malaysia (Invited by Prof. A/PROF. Meng Han Chong and Chang Jang Sen)
44. **"Fuel Cell Technology at UC Merced,"** *Graduate Seminar*, State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, September 9, 2017, Wuhan, China (Invited by Prof. Mu Pan)
45. **"Investigation of Interactive Electron, Gas, Liquid, and Heat Transport to Enhance Electrochemical Reaction,"** *Graduate Seminar*, Department of Chemistry, Technical University of Munich, July 13, 2017, Garching, Germany (Invited by Prof. Hubert A. Gasteiger)
46. **"Going Green and Getting Clean: Fuel Cells and the Future,"** *Seminar*, School of Engineering, Morgan State University, February 20, 2017, Baltimore, MD (Invited by Prof. Anthony A. Saka, Chair)
47. **"PEM Fuel Cell Introduction and Current Research and Development,"** *Keynote*, 2nd Institute of Materials Engineers of the Philippines (IMEP) Conference, October 27, 2016, Quezon City, Philippines (Invited by Prof. Rinlee Cervera)
48. **"Introduction of Fuel Cell Research at University of California, Merced,"** *Graduate Seminar*, Institute of Fuel Cell, Shanghai Jian Tong University, October 24, 2016, Shanghai, China (Invited by Prof. Junliang Zhang)
49. **"Introduction to Fuel Cells, FC Types, Hydrogen Economy,**" National Electrochemical Energy Storage Workshop (NEESW), University of the Philippines, Diliman, October 22, 2016, Quezon City, Philippines (Invited by Prof. Joey Ocon)
50. **"Introduction of Fuel Cell Technology,"** *Seminar*, Wuhan Marine Electric Propulsion Research Institute, July 21, 2016, Wuhan, China (Invited by Dr. Donghao Ye)
51. **"Fuel Cell Research at UC Merced,"** *Seminar*, University of the Philippines, Diliman, July 12, 2016, Quezon City, Philippines (Invited by Prof. Rinlee Cervera and Prof. Joey Ocon)
52. **"Research, Development, Intellectual Properties, and Technopreneurship,"** *Workshop*, Central Luzon State University, July 4-11, 2016, Science City of Muñoz, Philippines (Invited by PhilDev Chairman Dado Banatao and Dean Ireneo Agulto)
53. **"Introduction of Electrochemical Research at UC Merced,"** *Seminar*, National Renewable Energy Laboratory (NREL), April 15, 2016, Golden, CO (Invited by Dr. Kenneth Neyerlin)
54. **"PEM Fuel Cell for Automotive and Marine Application"** *Graduate Seminar*, Wuhan Institute of Marine Electric Propulsion, January 4-6, 2016, Wuhan, China (Invited by Dr. Donghao Ye)
55. **"Introduction of Fuel Cell Research at UC Merced,"** *Graduate Seminar*, State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, January 6, 2016, Wuhan, China (Invited by Prof. Mu Pan)
56. **"In-Depth Discussion of Fuel Cell Technology for Automotive Application,"** *Graduate Seminar*, State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, July 20, 2015, Wuhan, China (Invited by Prof. Mu Pan)
57. **"Introduction of Thermal and Electrochemical Energy Research at UC Merced,"** *Seminar*, NASA Goddard Space Flight Center, June 9, 2015, Greenbelt, MD, USA (Invited by Dr. Jentung Ku)
58. **"Introduction of Fuel Cell Research Laboratory at UC Merced,"** *Seminar*, Army Research Laboratory, January 12, 2015, Adelphi, MD, USA (Invited by Dr. Xiaoming Ren)
59. **"Study of Interactive Transport in Fuel Cells,"** *Graduate Seminar*, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, December 29, 2014, Dalian, China (Invited by Dr. Hongmei Yu)
60. **"Introduction of Fuel Cell Technology,"** *Graduate Seminar*, Department of Chemical Engineering, Dalian University of Technology, December 29, 2014, Dalian, China (Invited by Prof. Xuemei Wu)

61. **"Introduction of Fuel Cell Technology,"** *Graduate Seminar,* Institute of Aeronautics and Astronautics, National Cheng-Kung University, December 22, 2014, Tainan, Taiwan (Invited by Prof. Wei-Hsiang Lai)
62. **"Study of Interactive Transport Phenomena in Fuel Cells,"** *Graduate Seminar,* State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, November 7, 2014, Wuhan, China (Invited by Prof. Mu Pan)
63. **"Study of Interactive Transport Phenomena in Fuel Cells,"** *Graduate Seminar,* Clean Energy Automotive Engineering Center, TongJi University, November 6, 2014, Shanghai, China
64. **"The Impact of Diffusion Media and Water Management on Fuel Cell Stack Performance and Durability,"** *2014 International Symposium on Electrochemical Energy,* Jiao Tong University, July 14, 2014, Shanghai, CHINA
65. **"Limiting Current as a Screening Tool for Diffusion Media and Micro-Porous Layers,"** *2010 International Fuel Cell Workshop,* Fuel Cell Center, Yuan Ze University, December 6, 2010, Taoyuan, TAIWAN
66. **"Fuel Cell Vehicle Commercial Applications,"** *Low Emission Light Vehicle Technical Standards and Validation International Forum,* Taiwan Institute of Economic Research, December 1, 2010, Taipei, TAIWAN
67. **"Current Challenges in Fuel Cell Stack Research and Commercialization,"** *AIST FC-Cubic Mass Transfer Workshop,* Polymer Electrolyte Fuel Cell Cutting-Edge Research Center, Advanced Industrial Science and Technology, January 8, 2010, Tokyo, JAPAN
68. **"Challenges and Opportunities of PEM Fuel Cell Research,"** *Tianda International Fuel Cell Workshop,* State Key Laboratory of Engines, Tianjin University, December 23-23, 2009, Tianjin, CHINA
69. **"Challenges of Current Fuel Cell Stack Technology," Canada-US Fuel Cell Modeling and** *Characterization Workshop,* Institute of Fuel Cell Innovation, National Research Council, November 12-13, 2009, Vancouver, CANADA
70. **"Challenges and Opportunities of PEM Fuel Cell for Automotive Application,"** *Graduate Seminar,* Chemistry Department, Chung-Yuan Christian University, December 29, 2008, Chung-Li, TAIWAN
71. **"PEM Fuel Cell for Automotive Application,"** *Graduate Seminar,* Mechanical Engineering, Michigan Tech University, December 11, 2008, Houghton, Michigan, USA
72. **"Impact of Diffusion Media on Fuel Cell Operation,"** *2008 Gordon Research Conference on Fuel Cells,* July 20-25, 2008, Smithfield, Rhode Island, USA
73. **"Study of Water Management in a Polymer Electrolyte Fuel Cell,"** Energy and Environment Research Laboratories, Industrial Technology Research Institute, September 29, 2004, Hsin-Chu, TAIWAN
74. **"Study of a Loop Heat Pipe using Neutron Radiography,"** *Graduate Seminar,* Nuclear Engineering, The Pennsylvania State University, December 11, 2003, University Park, Pennsylvania, USA
75. **"Fundamental Studies of Loop Heat Pipes,"** Thermal Division, U.S. Naval Research Laboratory, July 23, 2003, Washington D.C., USA

AWARDS:

1. Awardee for **2025 ICM Future Mobility Grant, Baden-Wurttemberg, Germany** **08/25**
   Nominated by Dr. Andre Weber at KIT and elected by ICM committee.
2. Awardee for **2024 ICM Future Mobility Grant, Baden-Wurttemberg, Germany** **05/24**
   Nominated by Dr. Andre Weber at KIT and elected by ICM committee.
3. Awardee for **2023 ICM Future Mobility Grant, Baden-Wurttemberg, Germany** **08/23**
   Nominated by Dr. Andre Weber at KIT and elected by ICM committee.
4. Awardee for **Senate Faculty Distinguished Graduate Teaching/Mentoring Award**, UCM **05/23**
   Elected by Graduate Council for excellence in teaching at the graduate level and mentorship of graduate students.
5. Awardee for **2022 KIT International Excellence Fellow Award** **05/22**
   Nominated by Dr. Roswitha Zeis and elected by KIT committee.
6. Advisor of Best **Student Poster Award**, 1st place **05/19**
   235th ECS Meeting, May 26-31, 2019, Dallas, Texas
7. Awardee for **2017 Hellman Fellow Award** **05/17**
   Elected by Vice Provost for the Faculty and Committee on Research (COR).
8. Awardee for **Senate Faculty Distinguished Undergraduate Teaching Award**, UCM **05/16**

Elected by Undergraduate Council for excellence in teaching at the undergraduate level.

9. Awardee of **Discovery Park Research Fellow**, Purdue University **07/13-06/14**
   Elected by Discovery Park Research Centers, Purdue University.
10. **Honorary Member of Beta Gamma Sigma Honor Society** **04/10**
    Elected by The E. Philip Saunders College of Business, Rochester Institute of Technology.
11. **Honorary Member of The Phi-Tau-Phi Scholastic Honor Society** **01/97**
    Elected by The National Cheng-Kung University for excellent academic achievement.
12. **Outstanding Fellowship of IAA, NCKU, Tainan, Taiwan** **07/96**
    Awarded by IAA, NCKU for Excellent Academic Performance.