

Hsu, Cheng-Che (徐振哲)

Professor

B.S. in Chemical Engineering
National Taiwan University, 1996

M.S. in Chemical Engineering
National Taiwan University, 1998

Ph.D. in Chemical Engineering
University of California at Berkeley, 2006

Research and Professional Interests

Plasma processing techniques
Fabrication and characterization of
nano-scale and thin film materials
Numerical simulation of plasma
processes

Journal Papers

1. P. Y. Wang, T. H. Wu, P. G. Chao, W. H. Kuo, M. J. Wang, **C. C. Hsu**, and W. B. Tsai, "Modulation of Cell Attachment and Collagen Production of Anterior Cruciate Ligament Cells Via Submicron Grooves/Ridges Structures With Different Cell Affinity", *Biotechnology and Bioengineering*, **110**, 327 (2013) (SCI). (合著)
2. S. T. Lien, H. C. Li, Y. J. Yang, **C. C. Hsu**, I. C. Cheng, and J. Z. Chen, "Atmospheric pressure plasma jet annealed ZnO films for MgZnO/ZnO heterojunctions", *J. Phys. D – Appl Phys.*, **46**, 075202 (2013). (SCI)
3. Y. J. Yang and **C. C. Hsu**, "A Flexible Paper-based Microdischarge Array Device for Maskless Patterning on Non-flat Surface", *J. MEMS.*, **22**, 256 (2013) (SCI)
4. H. M. Chang, Y. J. Yang, H. C. Li, **C. C. Hsu**, I. C. Chen, and J. Z. Chen, "Preparation of nanoporous TiO₂ films for DSSC application by a rapid atmospheric pressure plasma jet sintering process", *J. Power Sources*, **234**, 16 (2013). (SCI)
5. A. S. Hsieh, K. C.-W. Wu, **C. C. Hsu**, "Kinetic Study of Acid Orange 7 Degradation Using Plasmas in NaNO₃ Solution Sustained by Pulsed Power", *Journal of the Taiwan Institute of Chemical Engineers*, **45**, 1558 (2014) (合著) (SCI, EI)
6. **C. C. Hsu**, N. Marchack, R.M. Martin, C. Pham, J. Hoang, and J. P. Chang, "Feature profile evolution during shallow trench isolation etching in chlorine-based plasmas. III. The effect of oxygen addition", *J. Vac. Sci. Tech. B.*, **31**, 042201 (2013) (SCI, EI)
7. H. W. Chang and **C. C. Hsu**, "Plasmas in Saline Solution Sustained Using Bipolar Pulsed Power Source – Tailoring the Discharge Behavior Using the Negative Pulses", *Plasma Chem. Plasma Process.*, **33**, 581 (2013). (SCI, EI)
8. H. Y. Chen, T. J. Lin, M. Y. Tsai, C. T. Su, R. H. Yuan, C. C. Hsieh, Y. J. Yang, **C. C. Hsu**, H. M. Hsiao, and Y. C. Hsu, "Vapor-Based Tri-Functional Coatings", *Chem. Comm.* **49**, 4531 (2013). (合著) (SCI)
9. W. Y. Liao, H. M. Chang, Y. J. Yang, **C. C. Hsu**, I. C. Cheng, and J. Z. Chen, "Oxygen-Deficient Indium Tin Oxide Thin Films Annealed by Atmospheric Pressure Plasma Jets With/Without Air-Quenching", *Appl. Surf. Sci.* **292**, 213 (2014). (SCI)
10. H. M. Chang, C. M. Hsu, P. K. Kao, Y. J. Yang, **C. C. Hsu**, I. C. Cheng, and J. Z. Chen, "Dye-sensitized solar cells with nanoporous TiO₂ photoanodes sintered by N₂ and air atmospheric pressure plasma jets with/without air-quenching", *Journal of Power Sources*, **251**, (2014) (SCI, EI)

11. S. M. Chang, R. F. Erwin, Y. J. yang, H. C. Li, R. C. Lee, N. L. Wu, and **C. C. Hsu**, “One-Step Fast Synthesis of Li₄Ti₅O₁₂ Particles Using an Atmospheric Pressure Plasma Jet” *Journal of the American Ceramic Society*, **97**, 708 (2014). (SCI, EI) (合著)
12. S. T. Lien, J. Z. Chen, Y. J. Yang, **C. C. Hsu**, and I. C. Cheng, “Sol-gel derived amorphous/nanocrystalline MgZnO thin films annealed by atmospheric pressure plasma jets” *Ceramics International*, **40**, 2707 (2014). (SCI, EI)
13. J. H. Tsai, C. M. Hsu, and **C. C. Hsu**, “Numerical Simulation of Downstream Kinetics of an Atmospheric Pressure Nitrogen Plasma Jet using Laminar, Modified Laminar, and Turbulent Models”, *Plasma Chem. Plasma Process*, **33**, 1121 (2013). (SCI, EI)
14. P. K. Kao and **C. C. Hsu**, “One-step rapid fabrication of paper-based microfluidic devices using fluorocarbon plasma polymerization”, *Microfluidics and Nanofluidics*, **16**, 811 (2014). (SCI, EI)
15. H. W. Liu, S. P. Liang, T. J. Wu, H. M. Chang, P. K. Kao, **C. C. Hsu***, J. Z. Chen*, P. T. Chou*, and I. C. Cheng*, “Rapid Atmospheric Pressure Plasma Jet Processed Reduced Graphene Oxide Counter Electrodes for Dye-Sensitized Solar Cells”, *ACS Applied Materials & Interfaces*, **6**, 15105 (2014). (SCI, EI)
16. P. K. Kao and **C. C. Hsu**, “Battery-Operated, Portable, and Flexible Air Microplasma Generation Device for Fabrication of Microfluidic Paper-based Analytical Devices on Demand”, *Analytical Chemistry*, **86**, 8757 (2014). (SCI, EI)
17. Y. J. Yang, M. Y. Tsai, W. C. Liang, H. Y. Chen*, and **C. C. Hsu***, “Ultra Low Cost and Flexible Paper-based Microplasma Generation Devices for Maskless Patterning of PEO-like Films”, *ACS Applied Materials & Interfaces*, **6**, 12550 (2014). (SCI, EI)
18. K. Y. Yeh, K. H. Cho, Y. H. Yeh, A. Promraksa, C. H. Huang, **C. C. Hsu**, and L. J. Chen*, “Observation of the rose petal effect over single and dual scale roughness surfaces,” *Nanotechnology*, **25**, 345303 (2014). (SCI, EI)
19. Y. J. Yang and **C. C. Hsu***, “A Flexible Paper-based Microdischarge Array Device: A Novel Route to Cost-effective and Simple Set-up Microplasma Generation Device” *IEEE Trans. Plasma Sci.* **42**, 3756 (2014).
20. T. H. Wu, J. Z. Chen, **C. C. Hsu***, and I. C. Cheng, "Electromechanical properties of MgZnO/ZnO heterostructures on flexible polyimide and stainless steel substrates under flexing", *J. Phys. D – Appl Phys.*, **47**, 255102 (2014).
21. H. W. Chang, **C. C. Hsu**, M. Ahmed, S. Y. Liu, Y. G. Fang, J. Seog, G. S. Oehrlein, and D. B. Graves, “Plasma flux-dependent lipid A deactivation”, *J. Phys. D – Appl Phys.*, **47**, 224015 (2014). (SCI, EI)
22. C. M. Hsu, S. T. Lien, Y. J. Yang, J. Z. Chen, I. C. Cheng, and **C. C. Hsu***, “Deposition of transparent and conductive ZnO films by an atmospheric pressure plasma-jet-assisted process”, *Thin Solid Films*, **423**, 570 (2014) (SCI, EI)
23. C. K. Chang, W. A. Chen, C. Y. Sie, S. C. Lin, L. T. Lin, T. H. Lin, **C. C. Hsu***, and S. S.-S. Wang*, “Investigating the effects of plasma pretreatment on the formation of ordered aggregates of lysozyme” *Colloids and Surfaces B: Biointerfaces*, **126**, 154 (2015). (SCI, EI)
24. T.-H. Wu, I. C. Cheng, **C. C. Hsu**, and J. Z. Chen, “UV photocurrent responses of ZnO and MgZnO/ZnO processed by atmospheric pressure plasma jets”, *J. Alloy Compd.*, **628**, 68, (2015). (SCI, EI)

25. Y. H. Jiang, I. C. Chiu, P. K. Kao, J. C. He, Y. H. Wu, Y. J. Yang, **C. C. Hsu**, I. C. Cheng, and J. Z. Chen, "Influence of rapid-thermal-annealing temperature on properties of rf-sputtered SnOx thin films", *Applied Surface Science*, **327**, 358, (2015). (SCI,EI)
26. C. M. Hsu, H. C. Li, S. T. Lien, J. Z. Chen, I. C. Chen, and **C. C. Hsu***, "Deposition of ZnO Thin Films by an Atmospheric Pressure Plasma Jet-Assisted Process: the Selection of Precursors" *IEEE Trans. Plasma Sci.* **43**, 670, (2015). (SCI,EI)
27. J. Z. Chen, W. Y. Liao, W. Y. Hsieh, **C. C. Hsu**, and Y. S. Chen, "All-vanadium redox flow batteries with graphite felt electrodes treated by atmospheric pressure plasma jets", *Journal of Power Sources*, **274**, 894 (2015). (SCI, EI)
28. W. Y. Liao, Y. J. Yang, C. M. Hsu, **C. C. Hsu**, I. C. Cheng, and J. Z. Chen, "Atmospheric-pressure-plasma-jet sintered dual-scale porous TiO2 using an economically favorable NaCl solution," *Journal of Power Source*, **281**, 252 (2015). (SCI,EI)
29. T. J. Wu, C. Y. Chou, C. M. Hsu, **C. C. Hsu**, J. Z. Chen, and I. C. Cheng, "Ultrafast synthesis of continuous Au thin films from chloroauric acid solution using an atmospheric pressure plasma jet," *RSC Advances*, **5**, 99654, (2015) (SCI,EI)
30. C. Y. Chou, H. M. Chang, H. W. Liu, Y. J. Yang, **C. C. Hsu**, I. C. Cheng, and J. Z. Chen, "Atmospheric-pressure-plasma-jet processed nanoporous TiO2 photoanodes and Pt counter-electrodes for dye-sensitized solar cells," *RSC Advances*, **5**, 45662, (2015) (SCI,EI)
31. H. T. Chien, M. C. Chen, P. S. Huang, J. Y. Lai, **C. C. Hsu**, and D. Y. Kang, "Reactive Atmospheric Pressure Plasma for Highly Efficient Removal of Structure-Directing Agents from Zeolite Thin Films," *Chemical Communications*, **51**, 13910, (2015). (SCI,EI)
32. Y. H. Jiang, P. K. Kao, J. C. He, I. C. Chiu, Y. J. Yang, Y. H. Wu, **C. C. Hsu**, I. C. Cheng, and J. Z. Chen, "Optoelectronic properties of infrared rapid-thermal-annealed SnOx thin films" *Ceramic International*, **41**, 13502 (2015) (SCI,EI)
33. G. W. Lin, Y. H. Jiang, P. K. Kao, I. C. Chiu, Y. H. Wu, **C. C. Hsu**, I. C. Cheng, and J. Z. Chen, "Nitrogen Atmospheric-Pressure-Plasma-Jet Induced Oxidation of SnOx Thin Films," *Plasma Chemistry and Plasma Processing*, **35**, 979 (2015). (SCI,EI)
34. J. Z. Chen, C. Wang, **C. C. Hsu**, and I. C. Cheng, "Ultrafast synthesis of carbon-nanotube counter electrodes for dye-sensitized solar cells using an atmospheric-pressure plasma jet," *Carbon*, **98**, 34, (2016). (SCI,EI)
35. C. H. Xua, P. W. Shen, Y. F. Chiu, P. W. Yeh, C. C. Chen, L. C. Chen, **C. C. Hsu**, I. C. Cheng, and J. Z. Chen, "Atmospheric pressure plasma jet processed nanoporous Fe2O3/CNT composites for supercapacitor application", *Journal of Alloys and Compounds*, **676**, 469, (2016)
36. T. H. Wan, Y. F. Chiu, C. W. Chen, **C. C. Hsu**, I. C. Cheng, and J. Z. Chen, "Atmospheric-Pressure Plasma Jet Processed Pt-Decorated Reduced Graphene Oxides for Counter-Electrodes of Dye-Sensitized Solar Cells," *Coatings*, **6**, 44, (2016).
37. L. K. Yeh, J. C. Luo, M. C. Chen, C. H. Wu, J. Z. Chen, I. C. Cheng, **C. C. Hsu**, and W. C. Tian, "Photoactivated Gas Detector for Toluene Sensing at Room Temperature Based on New Coral-Like ZnO Nanostructure Arrays", *Sensors* **16**, 1820, (2016).
38. C. H. Yang, F. H. Kuok, C. Y. Liao, T. H. Wan, C. W. Chen, **C. C. Hsu**, I. C. Cheng, J. Z. Chen, "Flexible reduced graphene oxide supercapacitor fabricated using a nitrogen

- dc-pulse atmospheric-pressure plasma jet." *Materials Research Express*, **4** 025504 (2017).
39. Kuok, F.-H., K.-Y. Kan, I.-S. Yu, C.-W. Chen, **C.-C. Hsu**, I. C. Cheng and J.-Z. Chen, "Application of atmospheric-pressure plasma jet processed carbon nanotubes to liquid and quasi-solid-state gel electrolyte supercapacitors." *Applied Surface Science* **425**(Supplement C): 321 (2017).
 40. Liao, C.-Y., F.-H. Kuok, C.-W. Chen, **C.-C. Hsu** and J.-Z. Chen, "Flexible quasi-solid-state SnO₂/CNT supercapacitor processed by a dc-pulse nitrogen atmospheric-pressure plasma jet." *Journal of Energy Storage* **11**(Supplement C): 237 (2017).
 41. Wan, T.-H., C.-C. Lee, C.-W. Chen, **C.-C. Hsu**, I.-C. Cheng and J.-Z. Chen, "A Comparison Study of Furnace and Atmospheric-Pressure-Plasma Jet Calcined Pt-Decorated Reduced Graphene Oxides for Dye-Sensitized Solar Cell Application." *Journal of The Electrochemical Society* **164**, H931 (2017).
 42. Yang, C.-H., C.-W. Chen, Y.-K. Lin, Y.-C. Yeh, **C.-C. Hsu**, Y.-J. Fan, I.-S. Yu and J.-Z. Chen, "Atmospheric-Pressure Plasma Jet Processed Carbon-Based Electrochemical Sensor Integrated with a 3D-Printed Microfluidic Channel." *Journal of The Electrochemical Society* **164**, B534 (2017).
 43. J. H. Tsai, I. C. Cheng, **C. C. Hsu**, and J. Z. Chen, "DC-pulse atmospheric-pressure plasma jet and dielectric barrier discharge surface treatments on fluorine-doped tin oxide for perovskite solar cell application." *Journal of Physics D: Applied Physics* **51**, 025502 (2018).
 44. Chien, H.-H., C.-Y. Liao, Y.-C. Hao, **C.-C. Hsu**, I. C. Cheng, I.-S. Yu and J.-Z. Chen, "Improved performance of polyaniline/reduced-graphene-oxide supercapacitor using atmospheric-pressure-plasma-jet surface treatment of carbon cloth." *Electrochimica Acta* **260**, 391 (2018).
 45. Lee, C.-C., T.-H. Wan, **C.-C. Hsu**, I. C. Cheng and J.-Z. Chen, "Atmospheric-pressure plasma jet processed Pt/ZnO composites and its application as counter-electrodes for dye-sensitized solar cells." *Applied Surface Science* **436**, 690, (2018).
 46. K. Y. Huang, H.-Y. Chi, P.-K. Kao, F.-H. Huang, Q.-M. Jian, I. C. Cheng, W.-Y. Lee, **C.-C. Hsu**, and D.-Y. Kang, "Atmospheric Pressure Plasma Jet-Assisted Synthesis of Zeolite-Based Low-k Thin Films." *ACS Applied Materials & Interfaces*, in press.

Conference Papers

1. **C. C. Hsu**, "Recent Progress on the Development of Paper-based Microplasma Generation Devices", 12th Asia Pacific Physics Conference, Chiba, Japan, July, 2013. **(Invited talk)**
2. P. K. Kao and **C. C. Hsu**, "Fluorocarbon Films Deposited by c-C₄F₈/N₂/Ar Plasmas: The Effect of N₂-addition on Gas Phase Kinetics and Surface Chemistry" (Poster), AVS 60th International Symposium, Long Beach, CA, USA, Oct, 2013.AVS
3. T. H. Lin, C.C. Wang, Y.J. Yang and **C.C. Hsu**, "Plasma Polymerization of the Inner Wall of a Long, Narrow Tube under Atmospheric Pressure"(Poster), AVS 60th International Symposium, Long Beach, CA, USA, Nov, 2013

4. C. M. Hsu, S. T. Lien, Y. J. Yang, J. Z. Chen, I. C. Chen, and **C. C. Hsu**, "Deposition the Transparent and Conductive ZnO Film by an Atmospheric Pressure Plasma Jet" (Poster), AVS 60th International Symposium, Long Beach, CA, USA, Oct, 2013.
5. Y. J. Yang, M. Y. Tsai, W. C. Liang, H. Y. Chen, and **C. C. Hsu**, "A Flexible Paper-based Microdischarge Array Device for Maskless Patterning on Nonflat Surfaces", AVS 60th International Symposium, Long Beach, CA, USA, Oct., 2013.AVS
6. H. W. Chang, S. C. Lin, C. Y. Chou, F. H. Huang, and **C. C. Hsu**, "Strategies to Tailor Discharge Behavior of Solution Plasma via Different Power Types", 8th Asia Pacific International Symposium on the Basics and Applications of Plasma Technology, Hsinchu, Taiwan, Dec. 2013 (**Program co-chair**)
7. P. K. Kao and **C. C. Hsu**, "One Step Fabrication of Paper-based Microfluidic Devices using Fluorocarbon Plasma Polymerization" (Poster), 8th Asia-Pacific International Symposium on the Basics and Applications of Plasma Technology (APSPT-8), Hsinchu, Taiwan, Dec, 2013.
8. T. H. Lin, C.C. Wang, Y.J. Yang and **C.C. Hsu**, "Plasma Polymerization of the Inner Wall of a Long, Narrow Tube under Atmospheric Pressure"(Poster), APSPT 8th International Symposium, Hsinchu, Taiwan, Dec, 2013.
9. C. M. Hsu, S. T. Lien, Y. J. Yang, J. Z. Chen, I. C. Chen, and **C. C. Hsu**, "Deposition the Transparent and Conductive ZnO Film by an Atmospheric Pressure Plasma Jet" (Poster), 8th Asia-Pacific International Symposium on the Basics and Applications of Plasma Technology (APSPT-8), Hsinchu, Taiwan, Dec, 2013.
10. Y. J. Yang, M. Y. Tsai, W. C. Liang, H. Y. Chen, and **C. C. Hsu**, "A Flexible Paper-based Microdischarge Array Device for Maskless Patterning on Nonflat Surfaces", The 8th Asia-Pacific International Symposium on the Basics and Applications of Plasma Technology, Hsinchu, Taiwan, Dec. 2013.
11. **C. C. Hsu**, "Recent Progress in the Development of Portable Microplasma Generation Devices -- Plasmas Beyond Imagination?" 1st Taiwan-Japan Workshop on Plasma Life Science and Technology, Hsinchu, Taiwan, Dec. 2014. (**Invited Talk**)
12. **C. C. Hsu**, "From Atmospheric-Pressure Plasma Jet to Portable Plasma Generation Devices – Plasmas Beyond Imagination," International Conference on New Materials, Nanotechnology and New Green Energy 2014 (EITA-New Materials 2014), Tainan, Taiwan, Nov. 2014. (**Invited Talk**)
13. Y. J. Yang, P. K. Kao and **C. C. Hsu**, "A Low Cost and Flexible Microplasma Generation Device to Create Hydrophobic/Hydrophilic Contrast on Nonflat Surfaces" (Poster), TJPL 1st Taiwan-Japan Workshop on Plasma Life Science and Technology, Hsinchu, Taiwan, Dec, 2014.
14. F. H. Huang, C. Y. Chou, H. W. Chang and **C. C. Hsu**, "Control of Plasma in Solution Using Bipolar Pulsed Voltage" (Poster), TJPL 1st Taiwan-Japan Workshop on Plasma Life Science and Technology, Hsinchu, Taiwan, Dec, 2014.
15. C. M. Wang, T. H. Lin, Y. J. Yang and **C. C. Hsu**, "Development of Low Cost and Flexible Microplasma Generation Devices Operated under Atmospheric Pressure" (Poster), TJPL 1st Taiwan-Japan Workshop on Plasma Life Science and Technology, Hsinchu, Taiwan, Dec, 2014.

16. C. W. Chen, Y. J. Yang and **C. C. Hsu**, “Development of a Low Cost and Portable Needle Type DBD Jet Operated under Atmospheric Pressure” (Poster), TJPL 1st Taiwan-Japan Workshop on Plasma Life Science and Technology, Hsinchu, Taiwan, Dec, 2014.
17. S. C. Lin and **C. C. Hsu**, “The Effect of the Electrode Diameter on the Behavior of Plasmas in Saline Solution” (Poster), TJPL 1st Taiwan-Japan Workshop on Plasma Life Science and Technology, Hsinchu, Taiwan, Dec, 2014.
18. Y. Y. Kuo, W. S. Zseng, C. M. Wang and **C. C. Hsu**, “Surface Treatment Using Portable Dielectric Barrier Discharge Device” (Poster), TJPL 1st Taiwan-Japan Workshop on Plasma Life Science and Technology, Hsinchu, Taiwan, Dec, 2014.
19. Y. J. Yang, P. K. Kao and **C. C. Hsu**, “A Low Cost and Flexible Microplasma Generation Device to Create Hydrophobic/Hydrophilic Contrast on Nonflat Surfaces” (Poster), AVS 61st International Symposium and Exhibition, Baltimore, MD, USA, Nov, 2014.
20. F. H. Huang, C. Y. Chou, H. W. Chang and **C. C. Hsu**, “Control of Plasma in Solution Using Bipolar Pulsed Voltage” (Poster), AVS 61st International Symposium and Exhibition, Baltimore, MD, USA, Nov, 2014.
21. C. M. Wang, T. H. Lin, Y. J. Yang and **C. C. Hsu**, “Development of Low Cost and Flexible Microplasma Generation Devices Operated under Atmospheric Pressure” (Poster), AVS 61st International Symposium and Exhibition, Baltimore, MD, USA, Nov, 2014.
22. C. W. Chen, Y. J. Yang and **C. C. Hsu**, “Development of a Low Cost and Portable Needle Type DBD Jet Operated under Atmospheric Pressure” (Poster), AVS 61st International Symposium and Exhibition, Baltimore, MD, USA, Nov, 2014.
23. S. C. Lin and **C. C. Hsu**, “The Effect of the Electrode Diameter on the Behavior of Plasmas in Saline Solution” (Poster), AVS 61st International Symposium and Exhibition, Baltimore, MD, USA, Nov, 2014.
24. Y. Y. Kuo, W. S. Zseng, C. M. Wang and **C. C. Hsu**, “Surface Treatment Using Portable Dielectric Barrier Discharge Device” (Poster), AVS 61st International Symposium and Exhibition, Baltimore, MD, USA, Nov, 2014.
25. **C. C. Hsu**, “Development of Portable Microplasma Sources and Their Applications”, 7th Vacuum and Surface Sciences Conference of Asia and Australia (VASSCAA-7), Hsinchu, Taiwan, Oct. 2014 (**Invited Talk**)
26. **C. C. Hsu**, “Development and Application of Microplasma Generation Devices Fabricated on Foldable Substrates”, International Union of Materials Research Societies, International Conference in Asia (IUMRS-ICA), Fukuoka, Japan, Aug. 2014 (**Invited Talk**)
27. **C. C. Hsu**, “Recent Progress in the Development of Microplasmas”, 8th International Conference on Reactive Plasmas/31st Symposium on Plasma Processing (ICRP-8/SPP-31), Fukuoka, Japan, Feb. 2014 (**Invited Talk**)
28. **C. C. Hsu**, “Recent Progress in the Development of Portable Microplasma Generation Devices -- A New Route?” The 75th IUSTA Workshop on Sheath Phenomena in Plasma Processing of Advanced Materials, Slovenia, Jan. 2015. (**Invited Talk**)

29. **C. C. Hsu**, “Development of Portable Plasma Systems – Why and How?”, 3rd Taiwan-Japan Workshop on Plasma Life Science and Technology, New Taipei City, Taiwan, Dec. 2016 (**Invited Talk**)
30. F.H. Huang and **C.C. Hsu**, “Development of a Sensing Device with an Integrated Plasmas Generation Unit” (Poster), 2016 AIChE annual meeting, San Francisco, CA, USA, Nov. 2016
31. J.C. Lin and **C.C. Hsu**, “Water Acidification by Atmospheric Pressure Microplasmas Operated in Air” (Poster), 2016 AIChE annual meeting, San Francisco, CA, USA, Nov. 2016
32. Ching-Yu Wang, Po-Wei Yeh, Chan-Cheng Lin and **Cheng-Che (Jerry) Hsu**, “Development of a Portable and Low Cost Atmospheric Pressure Microplasma Generation Device Driven by MobilePower Pack” (Poster), 2016 AIChE annual meeting, San Francisco, CA, USA, Nov. 2016.
33. C.W. Chen, W. Y. Chung, Y. C. Liao and **C.C. Hsu**, “A Surface Treatment on Polyimide by an Atmospheric Pressure Plasma Jet for Electroless Copper Plating” (Poster), 30th European Colloid and Interface Society (ECIS) Conference, Rome, Italy, Sep. 2016
34. Y. Y. Lin, **C. C. Hsu**, and P. W. Yeh, “Development of a Cellphone-Based Optical Emission Spectrometer for Analysis of Plasma Optical Emission” (Poster), 2016 AIChE annual meeting, San Francisco, CA, USA, Nov. 2016
35. T.K Yuan and **C.C. Hsu**, "The Development of a Portable High Voltage Module for Microplasma Generation Devices" (Poster), APSPT10, Taoyuan, Taiwan, Dec, 2017.
36. Q.M. Jian, P.W. Yeh and **C.C. Hsu**, "The Development of a Cellphone-Based Spectrometer for Acquisition of Plasma Optical Emission Spectroscopy" (Poster), APSPT10, Taoyuan, Taiwan, Dec, 2017.
37. F.Y. Yang and **C.C. Hsu**, "The Design and Development of a Portable Microplasma Generation Device for Detection of Metallic Ions in Aqueous Solutions"(Poster), APSPT10, Taoyuan, Taiwan, Dec, 2017.
38. S.Y. Lin, F.H. Huang, **C.C. Hsu**, “Development of a Low-Cost Zinc Oxide-Based Gas Sensor with an Integrated Microplasmas Generation Unit”(Poster), APSPT10, Taoyuan, Taiwan, Dec, 2017.
39. **C.C. Hsu**, “Moving from Atmospheric Pressure Plasma Jets to Portable Plasma Generation Devices – Novelty and Challenges” (**Tutorial Lecture**), 2017 APSPT10, Taoyuan, Taiwan, Dec, 2017.
40. **C.C. Hsu**, “The Development of a Portable Device for Detection of Heavy Metal Ions in Water using a Microplasma Generation Device Integrated with a Cellphone-based Spectrometer”, 2017 APSPT10, Taoyuan, Taiwan, Dec, 2017. (**Program Chair**)
41. C.Y. Wang and **C.C. Hsu**, “Development of Needle Type Electrostatic Precipitator for Airborne Particulate Matter Removal”, APSPT10, Taoyuan, Taiwan, Dec, 2017.
42. **C. C. Hsu**, “Recent Progress on Atmospheric Pressure Plasma Development: From Ultra-Rapid Processing to Portable Plasma Generation Devices – A New Route?” (**Invited Talk**) Army Research Labs, Baltimore, MD, USA, Dec. 2017.
43. T.K Yuan and **C.C. Hsu**, "The Development of a Portable High Voltage Module for

- Microplasma Generation Devices" (Poster), 2017 MRS, Boston, MA, USA, Nov, 2017.
44. Q.M. Jian, P.W. Yeh and C.C. Hsu, "The Development of a Cellphone-Based Spectrometer for Acquisition of Plasma Optical Emission Spectroscopy" (Poster), 2017 MRS, Boston, MA, USA, Nov, 2017.
 45. F.Y. Yang and C.C. Hsu, "The Design and Development of a Portable Microplasma Generation Device for Detection of Metallic Ions in Aqueous Solutions"(Poster), 2017 MRS, Boston, MA, USA, Nov, 2017.
 46. C.C. Hsu, "The Development of a Portable Device for Detection of Heavy Metal Ions in Water using a Microplasma Generation Device Integrated with a Cellphone-based Spectrometer", 2017 MRS, Boston, MA, USA, Nov, 2017. (Symposium Co-organizer)
 47. C.Y. Wang and C.C. Hsu, "Development of Needle Type Electrostatic Precipitator for Airborne Particulate Matter Removal" (Poster), 2017 MRS, Boston, MA, USA, Nov, 2017.

Honors and Others

1. 楊曜禎/指導教授徐振哲教授, Coburn and Winter Student Award Finalist American Vacuum Society, Plasma Science and Technology Division, American Vacuum Society 60th annual symposium, Long Beach USA, 2013/10/27-2013/11/1.
2. 楊曜禎/指導教授徐振哲教授, 最佳海報, 2013 台灣化學工程學會 60 週年年會暨國科會化學工程學門成果發表會, 2013/11/22-23.
3. 高鵬凱/指導教授徐振哲教授, 最佳海報, 2013 台灣化學工程學會 60 週年年會暨國科會化學工程學門成果發表會, 2013/11/22-23.
4. 楊曜禎/指導教授徐振哲教授, Best Oral Paper Award, 2013, 8th Asia Pacific International Symposium on the Basics and Applications of Plasma Technology, Hsinchu, Taiwan, Dec. 2013
5. 台灣大學「教學優良獎」2013
6. 臺灣大學 103 學年度教學傑出獎 2015
7. 研究團隊獲第十五屆「光寶創新獎」銀賞 2015