

CURRICULUM VITAE



Chi-Hwa Wang

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Department of Chemical and
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Education

<u>Ph.D.</u>	Chemical Engineering	Princeton University	1996
<u>M.A.</u>	Chemical Engineering	Princeton University	1993
<u>M.S.</u>	Biomedical Engineering	Johns Hopkins University	1991
<u>B.S.</u>	Chemical Engineering	National Taiwan University	1987

Experiences

National University of Singapore, Department of Chemical and Biomolecular Engineering,
Lecturer (Assistant Professor), 1995- June 2003; Associate Professor (with tenure), July 2003 - June 2010; Professor, July 2010 - Present.

National Taiwan University, Department of Chemical Engineering
Visiting Assistant Professor, September 1999 – January 2000; January-May 2002.
Visiting Associate Professor, September 2005- January 2006.

Singapore-MIT Alliance, Fellow, 2001-2006.

Kyoto University, Department of Chemical Engineering , JSPS Visiting Fellow, May – June 2003.

Cambridge University, Department of Chemical Engineering , (Sabbatical) Visitor, April – July 2004.

Massachusetts Institute of Technology, Department of Chemical Engineering, Visiting Associate Professor, July –September 2004.

National University of Singapore, Faculty of Engineering,
Assistant Dean for Research, March 2006 – June 2008.

Member, Editorial Board, Journal of Controlled Release, Elsevier, 2009 –
Executive Editor, Advanced Powder Technology, Elsevier, 2009 – 2012
Member, Editorial Board, Powder Technology, Elsevier, 2008 –
Member, Editorial Board, Applied Energy, Elsevier, 2017 -
Chair, Fifth Asia Particle Technology Symposium, Singapore, July 2012.
Chair, Scientific and Technical Program Committee, 14th Asia Pacific Confederation of Chemical Engineering Congress (APCChE Congress), Singapore Feb. 2012.

Executive Guest Editor, Current Pharmaceutical Design, Bentham Science Publishers, 2008-2010.
Guest Editor, APCChE 2012 Special Issue, Industrial & Engineering Chemistry Research, ACS, August 2012.
Guest Editor, Journal of Controlled Release Topic Collection: Central Nervous System Drug Delivery, Elsevier, July 2012
Executive Editor, Chemical Engineering Science, Elsevier, 2013 – 2022

Co-Covenor, Singapore Biochar Standard Work Group, 2021-2023.
Chair, Southeast Asia Regional Work Group, AIChE International Committee, 2014 – 2019.
Deputy Chair, Satellite Meeting Committee, Controlled Release Society, 2014 – 2015.
Chair, The 15th International Conference on Sustainable Energy Technologies (SET2016), Singapore, July 2016.
Chair, Frontiers in Chemical Engineering. The 8th Global Chinese Chemical Engineering Symposium (GCCES2016), Singapore 2016, July 2016.
Guest Editor, Theme issue on '3D-Bioprinting and Micro-/Nano-Technology: Emerging Technologies in Biomedical Science, Advanced Drug Delivery Reviews, 2018.
Chair, E2S2 CREATE and AIChE Waste Management Conference, 11-13 March 2019 (<https://www.aiche.org/ifs/conferences/e2s2-create-and-aiche-waste-management-conference/2019>).
Chair, Fluidization XVI, Guilin, China, 26-31 May 2019 (jointly organized by AIChE and CSP, <https://www.aiche.org/conferences/fluidization/2019>).
Co-Chair, 3rd AIChE Sustainable Waste Management Conference, 4-6 August 2021, Virtual. (jointly organized by AIChE, E2S2 CREATE and APRU Sustainable Waste Management <https://www.aiche.org/ifs/conferences/sustainable-waste-management-conference/2021>).

Honors & Awards

Hoechst Celanese Excellence in Teaching Award, Princeton University, 1993.
Hoechst Celanese Excellence in Teaching Award, Princeton University, 1994.
NATO ASI Fellowship, Institut d'Etudes Scientifique de Cargese, Corsica, France, 1994.
E-Council Excellence in Teaching Award, Princeton University, 1995.
Charlotte Elizabeth Procter Honorific Award, Princeton University, 1995.
Teaching Honours List Award, Faculty of Engineering, National University of Singapore, 1997.
Teaching Honours List Award, Faculty of Engineering, National University of Singapore, 1998.
CrayQuest Gold Award, Jointly presented by the Silicon Graphics & Institute of High Performance Computing, 1998.
Outstanding Paper Award, Society of Chemical Engineering Japan, 2000.
HPC Quest Silver Award, Jointly presented by IBM & Institute of High Performance Computing, 2004.
Teaching Commendation List, Faculty of Engineering, National University of Singapore, 2006.
Chemical Engineering Science Most Cited Paper 2003-2006 Award, Elsevier Publisher, 2007
Teaching Commendation List, Faculty of Engineering, National University of Singapore, 2007.
Runner-Up, Mimics Innovation Awards, Washington DC, USA, 2007.
Teaching Commendation List, Faculty of Engineering, National University of Singapore, 2008.
Teaching Commendation List, Faculty of Engineering, National University of Singapore, 2009.
Frontier Award, Fluid & Particle Processing Division, the Society of Chemical Engineers, Japan (SCEJ), 2012.
AIChE Shining Star Award 2016, San Francisco, USA, November 2016.
WSSET (World Society of Sustainable Energy Technologies) Award 2017, Bologna, Italy, July 2017.
Teaching Commendation List, Faculty of Engineering, National University of Singapore, 2017
AIChE Shell Thomas Baron Award, 2018, Pittsburgh, USA, November 2018.
Elected AIChE Fellow, August 2019.
Elected WSSET Fellow, August 2020.
Clarivate Highly Cited Researcher 2023.

Research Interests

Rheology of Granular Material

Flows and Dynamics of Granular Materials; Flow Instabilities in Particulate Systems. Process Tomography. Solid/Liquid Separation. Coal and Biomass Pyrolysis and Gasification for Clean Energy Applications. Waste to Energy and Resource.

Drug Delivery Systems

Transport Modeling for Drug Delivery in Brain, Liver and Bone Tumors; Controlled Release Devices for Chemotherapy & Radiotherapy Applications.

Research Grants

Title: Instabilities in Flows of Granular Materials. (Principal Investigator)
Supported by the NUS Academic Research Fund. Amount: S\$170,500 (1996-1999).
Title: A Three-dimensional Model of Drug Delivery to Brain Tumors. (Principal Investigator)
Supported by the National Medical Research Council. S\$249,100 (1997-2000).
Title: Solid/Liquid Separation. (Chi Tien, Reginald Tan & Chi-Hwa Wang)
Jointly supported by (i) National Science and Technology Board, Singapore, (ii) Ministry of Education, Singapore, and (iii) National University of Singapore. Amount: (S\$998,488 + S\$481,600 + S\$170,000). (1996-2000).

- Title: Controlled Release of Molecular Drugs from Microspheres of Biodegradable Polymers. (Si-Shen Feng & Chi-Hwa Wang), Supported by the NUS Academic Research Fund. Amount: S\$335,405 (1999-2002).
- Title: Application of Biodegradable Polymeric Microspheres for Delivery of Cell Growth Factors (CGF) in Tissue Engineering of Heart Valves (Si-Shen Feng, Chi-Hwa Wang, D.W. Huttmacher & Go Mei Lin), Supported by the NUS Academic Research Fund. Amount: S\$82,500 (1999-2002).
- Title: Electrical Capacitance Tomography Measurements on Multiphase System.(Principal Investigator)Supported by theNational University of Singapore. S\$324,585, Feb 2002 to Jan 2005.
- Title: Controlled Release Devices for Chemotherapy Applications. (Principal Investigator)
Supported by the Singapore-MIT Alliance. S\$80,000, Oct 2003 to September 2004.
- Title: Micro-and Nano-Particle Fabrication Techniques for Pharmaceutical Applications. (Principal Investigator)
Supported by the *Science and Engineering Research Council*, A*STAR. S\$612,990, Jan. 1, 2006 to December 31, 2008.
- Title: In Vivo Validation of Computational Simulation of Drug Delivery System to Brain Tumors. (Principal Investigator)
Supported by the *Office of Life Science*, National University of Singapore. S\$20,000, Jan. 1, 2006 to March 31, 2007.
- Title: Micro- and Nano- Particle Fabrication Techniques for Pharmaceutical Applications. (Principal Investigator) FRC Matching Fund, S\$30,000, Jan. 1, 2006 to December 31, 2008.
- Title: Evaluation of Biopolymer-based Depot System of RhoA Inhibitor in Promoting Neuronal Regeneration. (Co-Principal Investigator).
Supported by the *Office of Research*, National University of Singapore. S\$35,000, Jan. 1, 2007 to March 31, 2008.
- Title: Functionality Enhancement of Electrical Capacitance Tomography System for Advanced Multiphase Systems Research. (Principal Investigator). Supported by the National University of Singapore. S\$168,646, Feb. 1 2007 to Jan. 31 2010.
- Title: Combined Modality Chemo-antiangiogenic Therapy for Brain Tumor through Functional Sustained-Released Depots and in vivo MicroPET imaging (Principal Investigator). Supported by the *Biomedical Research Council*, A*STAR . S\$541,000, Jan. 1, 2008 to December 31, 2010.
- Title: Application of RNA interference (RNAi) technology in novel controlled release gene/drug delivery systems for synergetic therapy of glioma (Principal Investigator). Supported by the *National Medical Research Council*, S\$200,000, December 2009 to December, 2011.
- Title: Coal Gasification for Clean Energy Research (Principal Investigator). Supported by EDB and M3TC, S\$757,100, Feb. 2010 to Jan., 2013.
- Title: Synergistic cancer treatment using chitosan-p53 nanoparticles and doxorubicin loaded double-walled microspheres (Principal Investigator). Supported by the *National Medical Research Council*, S\$170,000, December 2011 to December, 2013.
- Title: Energy and Environmental Sustainability Solutions for Megacities, NRF E2S2 CREATE Programme. Programme: CSA: Waste to Energy for Clean Energy Applications. August 2012 - August 2017.
- Title: A*STAR-P&G Joint Grant Call on 3D Printing: 3D printing of biomimetic skins for skin care products testing using the electro-hydrodynamic jetting (e-jetting) technique). Supported by the BMRC A*STAR and P&G, \$519,880. May 5 2016 - May 4, 2018.
- Title: Sembcorp Corporate Laboratory: Conversion of Solid Residues from Coal Combustion Facilities and Carbon Soot to High Value Products - Absorbents, Zeolites, and Mesoporous Materials and to recover of vanadium (V) from carbon soot. Supported jointly by NRF (\$831,211 in cash), Sembcorp (Equipment) , and NUS (Ph.D. scholarship). 15 April 2016 – 31 March 2020.
- Title: CROSS Faculty Grant: "Development of Magnetic-sensitive Hydrogel-based Microspheres for Local Delivery of Cholinergic Drugs in Elderly Patients with Dry Mouth Syndrome", \$25,000, 2017-2018 (Co-PI).
- Title: INTRA-CREATE SEED Grant "Additive manufacturing of durable and water-resistant building structures and façade components using novel sustainable building materials", \$240,400 (Co-PI).
- Title: INTRA-CREATE SEED Grant "Understanding and enhancing the integrated gasification – chemical looping combustion process for treating biowaste and mitigating carbon emissions", \$249,960 (Co-PI).
- Title: CRETE E2S2 Phase 2: Waste to Resource: Eco-Energy System towards Environmental Sustainability (Principal Investigator): \$11,724,820. 1 August 2018 – 31 July 2023.
- Title: National Additive Manufacturing Innovation Cluster NOMIC PEP Grant “Fabrication of multi-layered microparticle laden fixed hydrogel wound dressing via 3D printing for the treatment of thermal burns”, (Principal Investigator). 15 February 2019 – 31 March 2021, \$249,600.
- Title: National Park Board Contracted Research: “A circular economy approach in phytoremediation” (Principal Investigator), May 19 2020 – May 19, 2022. \$ 285,600
- Title: A*STAR SINGAPORE FOOD STORY R&D PROGRAMME INDUSTRY ALIGNMENT FUND-PRE POSITIONING (IAF-PP) ON THEME 2 – FUTURE FOODS: ALTERNATIVE PROTEINS (AME DOMAIN): “A Sustainable Bio-platform for High Quality Microbial Protein Production”, 1 May 2021 – 30 April 2024 \$474,000 (Co-PI).
- Title: National Additive Manufacturing Innovation Cluster, “3D Printed Hydrogel Wound Dressing for the Treatment of Chronic Wounds”, 1 September 2023 – August 31 2025, \$279,962.80, (Principal Investigator).

Teaching and Administrative Activities

National University of Singapore (1996-2023)

CN2102 Fluid Mechanics; CN2112 Fluid Mechanics; CN2106 Reactor Systems I; EV2102 Reactor Systems;

CN6143 Transport and Reaction in Heterogeneous Media; CN2115, CN2125 & TCN2125 Heat and Mass Transfer. CN3124E & TCN3124 Particle Technology. CN3124 Fluid Particle Systems. CN4218 Particle Technology Fundamentals and Applications. CN2106 Fluid Mechanics and Heat Transfer. CN5195 Biomass and Energy.

Singapore-MIT Alliance (2001-2006)

SMA5412 Transport and Reaction processes

National Taiwan University (1999-2000; 2002; 2005)

Transport and Reaction in Heterogeneous Systems; Chemical Process Design; Engineering Mathematics II

Transport and Reaction in Heterogeneous Systems: From Fundamentals to Biomedical Applications

Coordinator, International Student Exchange Programme, ChBE Department, NUS, 1996 – present.

Coordinator, Undergraduate Research Opportunity Programme; ChBE Department, NUS, 1996 – 2007.

Advisor, Chemical Engineering Student Society, NUS, 1996 – 1998.

Member, Postgraduate Committee, ChBE Department, NUS, 2004 – 2007.

Liaison Officer, Industrial Attachment Programme, NUS, 1996 – present.

(Aspen Tech.; GlaxoSmithKline Manufacturing Pte Ltd; The Polyolefin Company; Stork Comprimo Pte Ltd; Natsteel Chemicals Ltd; Merck, Sharp & Dohme; Criterion Asia Pacific; Croda Singapore, Institute of Chemical Engineering Science, Exxon Mobil, Singapore; Nestle R&D Center Pte Ltd; 3M Technologies (S) Pte Ltd; Kellogg Brown & Root Asia Pacific Pte Ltd; Infineum Singapore Pte. Ltd; Singapore Refining Company; Infineum Singapore Pte. Ltd; CTI Chemicals Asia Pacific Pte Ltd; Nipsea Technology Pte Lt; Nipsea Technologies; Sembcorp Industries Ltd.; Abbott Laboratories Pte Ltd. (S.); Seagate International; Air Liquide Singapore Pte Ltd; Pride-Chem Industries Pte Ltd. Thermo Fisher Scientific; TPSC Asia Pte Ltd., Asia Pacific Breweries (Singapore) Pte Ltd, Novartis Singapore Pharmaceutical Manufacturing Pte Ltd; GlaxoSmithKline / Glaxo Wellcome Manufacturing Pte Ltd.

Reviewer Services: *AICHE Journal; Chemical Engineering Science; Journal of Fluid Mechanics; Physics of Fluids; Journal of Colloid and Interface Science; Industrial and Engineering Chemistry Research; Journal of Controlled Release; Biomaterials; Biomacromolecules; Advanced Materials; Biotechnology and Bioengineering; Journal of Pharmaceutical Sciences; Clinical Pharmacokinetics; Computers and Chemical Engineering; Canadian Journal of Chemical Engineering; Chemical Engineering Communications; Chemical Engineering Journal; Aerosol Science & Technology; Small; Progress in Polymer Science; International Journal of Heat and Fluid Flow; Journal of Theoretical Biology; Annals of Biomedical Engineering; Biochemical Engineering Journal; Journal of the Royal Society Interface; Separation Science and Technology; Separation and Purification Technology; Journal of Membrane Science; Journal of Applied Polymer Sciences; Powder Technology; Experimental Thermal and Fluid Science; Drug Development and Industrial Pharmacy; Journal of Biomaterials Science Polymer Edition; Macromolecular Bioscience; Colloids and Surfaces A; International Journal of Pharmaceutics; Current Drug Delivery; Biotechnology Progress; Macromolecular Materials & Engineering; International Journal of Radiation Biology; Chemical Engineering & Processing; Acta Orthopaedica; Applied Mathematical Modeling; Medical and Biological Engineering and Computing; Journal of Process Control; Korean Journal of Chemical Engineering; Journal of Drug Delivery Science and Technology; Particle and Particle System Characterization; Acta Biomaterialia; Acta Pharmacologica Sinica; Expert Opinion on Drug Delivery; Recent Patents on Drug Delivery and Formulation. Recent Patents on Nanotechnology; BMC Cancer Research; Biomicrofluidics; Journal of Pharmacy and Pharmacology; European Journal of Pharmaceutics and Biopharmaceutics. Applied Energy; Energy, Journal of Cleaner Production; Chemical Engineering Journal; Science of the Total Environment; Journal of Hazardous Materials; Bioresource Technology.*
Grant Proposal Reviewer for National Science Foundation, USA; Israel Science Foundation; Genesis Oncology Trust, New Zealand.; HRB Research Training Fellowships for Healthcare Professionals, Ireland; John Wiley and Sons Publisher New York; FCT Project Grant, Portugal; INSERM TRANSFERT, France .Samantha Dickson Brain Tumor Trust, UK. European Research Council Executive Agency. HRB Ireland. Cambridge-Africa ALBORADA Research Fund. Natural Sciences and Engineering Research Council of Canada. Czech Science Foundation. NWO/DST Netherlands. Royal Society London University Research Fellowship. Swiss National Science Foundation.

Selected Publications: Journal – International Refereed

[Google Scholar Citation Records](#)

1. C. H. Wang, R. Jackson, and S. Sundaresan, "Stability of Bounded Rapid Shear Flows of a Granular Material", *J. Fluid Mechanics*, 308, 31-62 (1996).
2. C.H. Wang, R. Jackson, and S. Sundaresan, "Instabilities of Fully Developed Rapid Flow of a Granular Material in a Channel", *J. Fluid Mechanics*, 342, 179-197 (1997).
3. C.H. Wang and Z. Tong, "Transient Development of Instabilities in Bounded Shear Flow of Granular Materials", *Chem. Eng. Sci.*, 53(22), 3803-3819 (1998).
4. J. S. Hua and C. H. Wang, "Electrical Capacitance Tomography Measurements of Gravity-driven Granular Flows", *Ind. Eng. Chem. Res.*, 38, 621-630 (1999).
5. D. J. Lee and C. H. Wang, "Theories of Cake Filtration and Consolidation and Implications to Sludge Dewatering", *Water Research*, 34, 1-20 (2000).
6. J. S. Hua and C. H. Wang, "Numerical Simulation of Bubble-driven Liquid Flows", *Chem. Eng. Sci.*, 55(19) 261-275 (2000).

7. R. M. Wu, D. J. Lee, C. H. Wang, J. Zhao, and R. B. H. Tan, "Discrepancy in Cake Characteristic Measurement: Compression-Permeability Cell", *J. Chem. Eng. Japan*, 33(6), 869-878 (2000).
8. R. M. Wu, D. J. Lee, C. H. Wang, J.P. Chen, and R. B. H. Tan, "Novel Cake Characteristics of Waste-Activated Sludge", *Water Research*, 35(5) 1358-1362 (2001).
9. C. H. Wang and Z. Tong, "On the Density Waves Developed in Gravity Channel Flows of Granular Materials", *J. Fluid Mech.*, 435, 217-246 (2001).
10. S.M. Rao, K. Zhu, C.H. Wang, and S. Sundaresan, "Electrical Capacitance Tomography Measurements on the Pneumatic Conveying of Solids", *Ind. Eng. Chem. Res.* 40(20) 4216-4226 (2001).
11. C. H. Wang and A. S. Popel, "The Effect of Red Blood Cell Shape on Oxygen Transport in Capillaries", *Mathematical Biosciences* 116, 89-110 (1993).
12. C. H. Wang and J. Li, "Three Dimensional Simulation of IgG Delivery to Tumors", *Chem. Eng. Sci.*, 53(20), 3579-3600 (1998).
13. C. H. Wang, K. Sengothi and T. Lee, "Controlled Release of Human Immunoglobulin G – I. Release Kinetic Studies", *J. Pharm. Sci.* 88(2) 215-220 (1999).
14. C. H. Wang, K. Sengothi, H. M. Wong and T. Lee, "Controlled Release of Human Immunoglobulin G – II Morphological Characterization", *J. Pharm. Sci.* 88(2) 221-228 (1999).
15. C. H. Wang, Y. Q. Dong, K. Sengothi, K. L. Tan and E. T. Kang, "In-vivo Tissue Response to Polyaniline", *Synthetic Metals*, 102 (1-3), 1313-1314 (1999).
16. C. H. Wang, J. Li, C. S. Teo and T. Lee, "On the Delivery of BCNU to Brain Tumors", *J. Controlled Release*, 61 21-41 (1999).
17. K. Sengothi, P. C. Tan, J. Wang, T. Lee, E. T. Kang and C. H. Wang, "Biocompatibility of Electroactive Polymers in Tissues", *J. Biomedical Materials Research*, 52(3), 467-478(2000).
18. H. M. Wong, J. Wang, and C. H. Wang, "In Vitro Sustained Release of Immunoglobulin G from Biodegradable Microspheres", *Ind. Eng. Chem. Res.* 40, 933-948 (2001).
19. F.Y.M. Goh, H.L. Kong, and C. H. Wang, "On the Delivery of Doxorubicin to Hepatoma", *Pharmaceutical Research*, 18(6) 761-770 (2001).
20. F.J. Wang, T.K.Y. Lee and C.H. Wang, "PEG Modulated Release of Etanidazole from Implantable PLGA/PDLA Discs", *Biomaterials*, 23, 3555-3566 (2002).
21. F.J. Wang and C.H. Wang, "Effects of Fabrication Conditions on the Release Characteristics of Etanidazole from Spray Dried Microspheres", *J. Microencapsulation*, 19(4), 495-510 (2002).
22. F.J. Wang and C.H. Wang, "Sustained Release of Etanidazole from Spray Dried Microspheres Prepared by Non-halogenated Solvents", *J. Controlled Release*, 81 263-280 (2002).
23. T.H. Lee, J.J. Wang and C.H. Wang, "Double-walled Microspheres for Sustained Release of Highly Water Soluble Drugs: Characterization and Irradiation Studies", *J. Controlled Release*, 83, 437-452 (2002).
24. K.H. Tan, F.J. Wang, T. Lee and C.H. Wang, "Delivery of Etanidazole to Brain Tumor from PLGA Wafers: A Double Burst Release System", *Biotechnology and Bioengineering* 82(3), 278-288 (2003).
25. E.Y. Yip, J.J. Wang, and C.H. Wang. "Sustained Release System for Highly Water-soluble Radiosensitizer Drug Etanidazole: Irradiation and Degradation Studies", *Biomaterials*, 24, 1977-1987 (2003).
26. J.C. Reigenga, H. Siepe, L.E. Yu, and C. H. Wang, "Collaborative Learning and Cyber-Cooperation in Multidisciplinary Projects", *Chem. Eng. Education*, 37(2), 114-119 (2003).
27. J.J. Wang, C.W. Ng, Y.W. Khin, P. Shoemakers, T. Lee, S.S. Feng, and C.H. Wang, "Controlled Release of Paclitaxel from Polylactide-co-glycolide (PLGA) Microparticles and Discs under Irradiation", *J. Microencapsulation* 20 317-327 (2003).
28. S. J. Lee, C. P. Chu, R. B. H. Tan, C. H. Wang, and D. J. Lee, "Consolidation Dewatering and Centrifugal Sedimentation of Flocculated Suspension of Activated Sludge", *Chem. Eng. Sci.* 58(9) 1687-1701 (2003).
29. J. Zhao, C.H. Wang, D.J. Lee, and C. Tien, "Cake Consolidation in a Compression-permeability Cell: the Effect of Cell Wall Friction", *J. Colloid & Interface Sci.* 262, 60-72 (2003).
30. J. Zhao, C.H. Wang, D.J. Lee, and C. Tien, "Plastic Deformation in Cake Consolidation", *J. Colloid & Interface Sci.* 261, 133-145 (2003).
31. K.H. Tan, T. Lee, and C.H. Wang, "Simulation of Intra-tumoral Release of Etanidazole: Effects of the Size of Surgical Opening", *J. Pharm. Sci.* 92(4) 773-789 (2003).
32. F.J. Wang and C.H. Wang, "Etanidazole-loaded Microspheres Fabricated by Spray Drying Different Poly(lactide/glycolide) Polymers: Effects on Microsphere Properties", *Journal of Biomaterials Science. Polymer Edition*, 14(2) 157-183 (2003).
33. M. Zhang, Z. Yang, L. L. Chow, and C. H. Wang, "Simulation of Drug Release from Biodegradable Microspheres Undergoing Bulk and Surface Erosions", *J. Pharm. Sci.* 92 (10) 2040-2056 (2003).
34. R.S. Deng and C.H. Wang, "Instabilities of Granular Materials under Vertical Vibrations", *J. Fluid Mechanics*, 492, 381-410 (2003).
35. K. Zhu, S.M. Rao, C.H. Wang, and S. Sundaresan "Electrical Capacitance Tomography Measurements on the Vertical and Inclined Pneumatic Conveying of Granular Solids", *Chem. Eng. Sci.* 58(18) 4225-4245 (2003).
36. J.J. Wang, K.M. Chua, and C.H. Wang. "Stabilization and Encapsulation of Human Immunoglobulin G in Biodegradable Microspheres", *J. Colloid & Interface Sci.* 271 92-101 (2004).
37. R.S. Deng and C.H. Wang, "Particle Image Velocimetry Study on the Pattern Formation in a Vertically Vibrated Granular Bed", *Phys. Fluids*, 15(12) 3718-3729 (2003).

38. K. Zhu, C.K. Wong, S.M. Rao, and C. H. Wang. "Pneumatic Conveying of Granular Solids in Horizontal and Inclined Pipes", *AIChE Journal*, 50(8)1729-1745 (2004).
39. K. Zhu, S.M. Rao, Q.H. Huang, C.H. Wang, S Matsusaka, and H. Masuda, "On the Electrostatics of Pneumatic Conveying of Granular Materials Using Electrical Capacitance Tomography", *Chem. Eng. Sci.*, 59(15) 3201-3213(2004).
40. L.Y. Lee, T.Y. Quek, R. Deng, M. B. Ray, C.H. Wang, "Pneumatic Transport of Granular Materials through a 90° Sharp Bend", *Chem. Eng. Sci.* 59, 4635-4649(2004).
41. J. Yao, Y. Zhang, C.H. Wang, S. Matsusaka, H. Masuda, "Electrostatics of the Granular Flow in a Pneumatic Conveying System", *Ind. Eng. Chem. Res.*, 43, 7181-7199 (2004).
42. L. Ding, T. Lee, C.H. Wang, "Fabrication of Mono-Dispersed Taxol Loaded Particles Using Electrohydrodynamic Atomization", *Journal of Controlled Release*, 102, 395-413 (2005).
43. P.K. Naraharisetti, D.N. Lew, Y.C. Fu, D.J. Lee, and C.H. Wang "Gentamicin Loaded Discs and Microspheres and Their Modifications: Characterization and In Vitro Release", *Journal of Controlled Release*, 102, 345-359 (2005).
44. R. Lin, L. Ng., and C.H. Wang, "In Vitro Study of Anticancer Drug Doxorubicin in PLGA-Based Microparticles", *Biomaterials*, 26, 4476-4485(2005).
45. T.Y. Quek, M.B. Ray, and C.H. Wang. "Dilute Gas-Solid Flows in Horizontal and Vertical Bends", *Ind. Eng. Chem. Res.* 44, 2301-2315(2005).
46. C.G. Lee, YC Fu, and C.H. Wang, "Simulation of Gentamicin Delivery for the Local Treatment of Osteomyelitis", *Biotechnology and Bioengineering*, 91, 622-635 (2005).
47. C.S. Teo, K.H. Tan, T. Lee, and C.H. Wang, "Simulation of Drug Delivery to Brain Tumors, Effects of Transient Interstitial Fluid Flow", *Chem. Eng. Sci.*, 60, 4803-4821 (2005).
48. E. C. Tan, R. Lin, and C.H. Wang, "Fabrication of Double-Walled Microspheres For the Sustained Release of Doxorubicin", *J. Colloid & Interface Sci.*, 291, 135-143 (2005).
49. P.K. Naraharisetti, C.G. Lee, Y.C. Fu, D.J. Lee, and C.H. Wang "In Vitro and In Vivo Release of Gentamicin from Biodegradable Discs", *Journal of Biomedical Materials Research: Part B: Applied Biomaterials*, 77B, 329-337, (2006).
50. W.C. Lim, C.H. Wang, and A.B. Yu, "Discrete Element Simulation for Pneumatic Conveying of Granular Material" *AIChE Journal*, 52, 496-509 (2006).
51. J. Xie and C. H. Wang, "Self-Assembled Biodegradable Nanoparticles Developed by Direct Dialysis Method for the Delivery of Paclitaxel", *Pharmaceutical Research*, 22(12) 2079-2090 (2005).
52. K.T. May, C.H. Wang, and R.B.H. Tan "Experimental Studies of Hydrodynamics and Regime Transition in Bubble Columns", *Canadian Journal of Chemical Engineering*, 84, 63-72, (2006).
53. J. Yao, C.H. Wang, W.C. Lim, J. Bridgwater, "Granular Attrition in a Rotary Valve: Attrition Product Size and Shape", *Chemical Engineering Science*, 61, 3435 – 3451, (2006).
54. J. Yao and C.H. Wang,, "Granular Size and Shape Effect on Electrostatics in Pneumatic Conveying Systems", *Chemical Engineering Science*, 61, 3858 – 3874 (2006).
55. W.C. Lim and C.H. Wang, "Granular Attrition as a Diffusion Phenomenon" *Ind.Eng. Chem. Res.* 45, 2077-2083(2006).
56. A. Blank, J.H. Freed, P.K. Naraharisetti, C.H. Wang, "Electron Spin Resonance Microscopy Applied to the Study of Controlled Drug Release", *Journal of Controlled Release*, 111, 174-184 (2006).
57. J. Xie, J.C.M. Marijnissen, C.H. Wang, "Microparticles Developed by Electrohydrodynamic Atomization for The Local Delivery of Anticancer Drug to Treat C6 Glioma In Vitro", *Biomaterials*, 27, 3321-3332 (2006).
58. R.S. Deng, C.H. Wang, and K. A. Smith, "Bubble Behavior in a Taylor Vortex", *Physical Review E*, 73, 036306 (2006).
59. Y.S. Wong, C.H. Gan, C.H. Wang, A. Ingram, X. Fan, Parker, D.J., and J.P.K. Seville. "Instabilities in Vertically Vibrated Granular Beds at the Single Particle Scale", *Physics of Fluids*, 18, 043302 (2006).
60. J. Xie, C.H. Wang, "Electrospun Micro- and Nanofibers for Sustained Delivery of Paclitaxel to Treat C6 Glioma In Vitro" *Pharmaceutical Research*, 23, 1817-1826 (2006).
61. J. Xie, L.K. Lim, Y. Phua, J. Hua, C.H. Wang "Electrohydrodynamic Atomization for Biodegradable Polymeric Particle Production", *J. Colloid & Interface Sci.*, 302, 103-112(2006).
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376. K.Y. Tang, C.Y. Chan, C.H.T. Chai, B.Q.L. Low, Z.Y. Toh, B.W.L. Wong, J.Z.X. Heng, Z. Li, C.L.K. Lee, X.J. Loh, C.H. Wang, E. Ye, “Thermochemical Valorization of Waste Plastic for Production of Synthetic Fuels, Fine Chemicals, and Carbon Nanotubes”, *CS Sustainable Chem. Eng.* 2024, 12, 5, 1769–1796.

PCT: “Activated Carbon and Method of Fabrication Thereof”. International Publication Number: WO 2021/201778 A1.

SG provisional patent (Application No. 10202008411T). PCT: “HYDROGELS AND METHODS OF FABRICATION THEREOF”,

SG Non-Provisional Application No. 10202102558W “Conversion of Ash to Value-Added Products (adsorbent for removal of specific heavy metals from waste water and other solutions) using Green Technology”. PCT: “A Method of Treating An Ash Composition” PCT/SG2022/050122 on 11 March 2022 claiming priority from Singapore Patent Application No. 10202102558W filed on 12 March 2021 (“Patent Applications”).

Invited Lectures/Seminars/Service

Delft University of Technology, Faculty of Chemical Technology, The Netherlands, 1999.

National Taiwan University, Chemical Engineering Department, Taipei, Taiwan, 1998 & 1999.

Massachusetts Institute of Technology, Department of Chemical Engineering, Cambridge, Massachusetts, USA, July 2001.

Kyoto University, Department of Chemical Engineering, Kyoto, Japan, May 2003.

Princeton University, Department of Chemical Engineering, Princeton, NJ, USA, September 2004.

Johns Hopkins University, Department of Biomedical Engineering, Baltimore, Maryland, USA, June 2005.

Seoul National University, Department of Chemical Engineering, Seoul, Korea, November 2006.

Hong Kong University of Science and Technology, Department of Chemical Engineering, December 2006.

ETH Zurich, Institute of Chemical and Bioengineering, Switzerland, October 2008.

Invited Speaker, International Conference on "Nanomedicine & Its Application", Thanjavur, Tamilnadu, India, October 18-19, 2007.

Invited Speaker, Particles 2008, Orlando, Florida, USA, 10-13 May 2008.

Keynote Speaker, Symposium on Transport Phenomena and Applications, National Taiwan University, Taipei, Taiwan, September 2008.

Invited Speaker, EHRlich II –2nd World Conference on Magic Bullets, Celebrating the 100th Anniversary of the Nobel Prize Award to Paul Ehrlich, Nürnberg, October 3-5, 2008.

Invited Speaker, JSPS Core-To-Core Program, 27th Seminar of Advanced Particle Handling Science, Kyoto University, April 15, 2009.

Invited Speaker, Innovative oncology R&D webinar, “Novel Methods for Oncology Drug Delivery and Dispersal, December 1st, 2009, 3:00pm GMT; 10:00am (EST), NextLevel Pharma.

Invited Speaker, EPS International Oncology and Radiology Forum, Yichang International Hotel, Yichang, China, June 19-20, 2010.

Keynote Speaker, International Workshop on Novel Nanotechnology and Nanomaterials for “Science for Human”, National Taiwan University, Chemical Engineering Department, Taipei, Taiwan, November 21-22, 2011.

Keynote Speaker, Collaborative Research Center for Energy Engineering (CEE) International Symposium 2012, Sanjo Conference Hall, The University of Tokyo, November 19-20, 2012.

Invited Speaker, Third Symposium on Innovative Polymers for Controlled Release, Suzhou, China, 16-19 September 2014.

Plenary Speaker, 7th Global Chinese Chemical Engineering Symposium, Tianjin, China, 12-15, 2015.

Keynote Speaker, 14th International Conference on Sustainable Energy Technologies, Nottingham, UK, 25-27 August 2015.

Keynote Speaker 4th International Conference on Sustainable Chemical Product and Process Engineering (SCPPE 2016), Nanjing, Novotel Hotel, May 31 – June 3, 2016.

Invited Speaker, AIChE Annual Meeting, San Francisco, 12-18 November 2016.

Keynote Speaker, 2nd International Conference on Biological Waste as Resource 2017 (BWR2017), Hong Kong, 25-27 May 2017.

Keynote Speaker, Asian Particle Technology Symposium (APT2017) , Taoyuan, Taiwan, 30 August - 3 September 2017.

Invited Speaker, 255th ACS National Meeting, New Orleans, LA, March 18-22, 2018.

Plenary Speaker, Chinese Engineering Thermo-Physics Multiphase Flow and National Natural Science Foundation Annual Meeting, Beijing, China 19-21 October 2018.

Invited Speaker, AIChE Annual Meeting, Pittsburgh, USA, 28 October – 2 November, 2018.

Keynote Speaker, The 14th International Conference on Gas-Liquid and Gas-Liquid-Solid Reactor Engineering (GLS-14), Guilin, China, 31 May – 3 June, 2019.

Keynote Speaker, 7th UK-China International Particle Technology Forum, Edinburgh, UK, 28-31 July, 2019.

Keynote Speaker, APCChE 2019, Sapporo, Japan, 23-27 September 2019.

Invited Speaker, AIChE Annual Meeting, Orlando, Florida, USA, 10-15 November, 2019.

Invited Speaker, International Conference on New Horizons in Biotechnology (NHBT-2019); Trivandrum, Kerala, India, Hotel Residency Towers, Trivandrum, India. November 20-24, 2019.

Keynote Speaker, ICCE & BWR, 10-13 December 2019, Busan, Korea.

Invited Speaker, Engineering Sustainable Development, Korea University, Seoul, South Korea, 12-13 December 2019.
Invited Speaker, Asia Pacific Biochar Conference 2021, 11 May 2021. **(Virtual)**
Invited Speaker, 3rd International Conference for Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability, 19 May 2021. **(Virtual)**
Invited Speaker, WSSET On-Line Lecture, 22 September, 2021. **(Virtual)**
Keynote Speaker, 20th Conference on Sustainable Energy Technologies, Nottingham, UK, 15-17 August 2023.

Conference Organizing Committee and Session Chairs:

Pharmaceutical Division Chair, 8th World Congress of Particle Technology, Orlando, Florida, USA, 22-26 April 2018.
Chair, 15th International Conference on Sustainable Energy Technologies, Singapore July 2016. (<http://set2016.chbe.nus.edu.sg>).
Chair, Global Chinese Chemical Engineering Symposium, Singapore, July 2016.
Chair, the Fifth Asia Particle Technology Symposium, Singapore, 2012.
Chair, Scientific and Technical Program Committee, 14th Asia Pacific Confederation of Chemical Engineering Congress (APCChE Congress), Singapore 2012.
International Scientific Committee, 3rd International Workshop on Process Tomography (IWPT-3), Tokyo, Japan. 17-18 April 2009. ASCON-IEECE, Sapporo, Japan, 2008. ASCON 10th, Bunsan, Korea, 2006. Scientific Panel, Advancing the Fundamentals, 7th World Congress of Chemical Engineering, Glasgow, UK, 2005. International Advisory Committee, 4th World Congress on Industrial Process Tomography, Aizu, Japan, 5-8, September 2005. ASCON 9th, Taipei, Taiwan 2004. Symposium on Transport Phenomena and Applications, Taipei, Taiwan, 1998, 1999, 2000, 2001, 2002, 2004, 2006. The 9th APCChE Congress and CHEMECA 2002, Christchurch, New Zealand, 2002. 10th International Conference on Biomedical Engineering, Singapore, 2000. Regional Symposium on Chemical Engineering, Singapore, 2000.

LIST OF RECENT COLLABORATORS

In the past 25 years, Dr. Chi-Hwa Wang collaborated with the following overseas research groups on various topics of particle technology ranging from fundamental studies for multiphase flow modelling and simulation, characterization, and process tomography to the biomedical and pharmaceutical applications of different particulate drug dosage forms: Professor John Bridgwater (Cambridge University, particle attritions); Professor Shuji Matsusaka (Kyoto University, electrostatics); Professor Jonathan Seville (University of Birmingham, PEPT); Professor Sankaran Sundaresan (Princeton University, pneumatic transport, electrical capacitance tomography); Professor Kenneth A. Smith (MIT, pharmaceutical particles and transport phenomena); Professor Ai-Bing Yu (University of New South Wales, DEM simulations); Professor Daniel W. Pack (University of Illinois @ Urbana Champaign, fabrication of core-shell microparticles); Professor Nick Sahinidis (Carnegie Mellon University, modeling and optimization of particulate foam for drug delivery); Professor J.C.M. Marijnissen (Delft University of Technology, EHDA); Professor William B. Krantz (University of Colorado, Boulder, scaling law for EHDA system); Professor A. Tsutsumi (University of Tokyo, coal gasification for clean energy studies); Professor W.Q. Yang (University of Manchester, electrical capacitance tomography); Professor Yanjun Dai & Tiansu Ge (Shanghai Jiaotong University, Waste conversion to energy and resources). Professor Wojciech Lipinski (Australia National University, Solar thermal conversion); Professor Yong Sik Ok (Korea University, Waste conversion to resources); Professor Daniel Tsang (Hong Kong Polytechnic University, Waste conversion to resources). Professor Eilhann E. Kwon (Sejong University, Waste conversion to resources); Professor Yong Shuai (Harbin Institute of Technology, Solar thermal conversion).

- Professor Chi-Hwa Wang's research has focused on developing a fundamental understanding of the generation and transport of electrostatics in fluid-particle flow systems and applying this understanding to improve the flow measurements and characterization of chemical and pharmaceutical processes.

Through experiments and simulations, the characterization of electrostatics in pneumatic conveying, fluid-particle flows, and fluidized bed systems, have been investigated from a series of studies from year 2004 to 2017 by Chi-Hwa Wang's research group, focusing on the following aspects, (1) measurement accuracy of electrical capacitance tomography under the influence of electrostatics, *Chem. Eng. Sci.*, 59(15) 3201-3213(2004). (2) electrostatics of the granular flow in a pneumatic conveying system, *Ind. Eng. Chem. Res.*, 43, 7181-7199 (2004). (3) effects of an electrostatic field in pneumatic conveying of granular materials through Inclined and vertical pipes, *Chem. Eng. Sci.* 61, 7889 - 7908 (2006). (4) on the electrostatic equilibrium of granular flow in pneumatic conveying systems, *AIChE Journal*, 52 (11) 3775-3793 (2006). (5) particle attrition due to rotary valve feeder in a pneumatic conveying system: electrostatics and mechanical characteristics, *Canadian Journal of Chemical Engineering*, 84, 663-679(2006). (6) hazard of electrostatic generation in pneumatic

conveying system: electrostatic effects on the accuracy of electrical capacitance tomography measurements and generation of spark, *Measurement Science and Technology*, 19, 015502 (2008). (7) electrostatic characterization of electrohydrodynamic atomization process for polymeric particle fabrication, *J. Aerosol Sci.* 39, 987-1002(2008). (8) electrostatic characteristics in a large-scale triple-bed circulating fluidized bed system for coal gasification, *Chem. Eng. Sci.*, 75, 435-444 (2012). (9) experimental and numerical investigations on the electrostatics generation and transport in the downer reactor of a triple-bed combined circulating fluidized bed, *Ind. Eng. Chem. Res.*, 51, 14258-14267 (2012). (10) investigation on hydrodynamics of triple-bed combined circulating fluidized bed using electrostatic sensor and electrical capacitance tomography *Ind. Eng. Chem. Res.*, 52(32) 11198-11207 (2013). (11) investigation on hydrodynamics of triple-bed combined circulating fluidized bed using electrostatic sensor and electrical capacitance tomography”, *Ind. Eng. Chem. Res.*, 52(32) 11198-11207 (2013). (12) electrostatic charging and its effect on mixing of binary particles in a vibrating bed”, *Ind. Eng. Chem. Res.*, 53, 14166-14174 (2014), (13) experimental investigations of granular shape effects on the generation of electrostatic charge, *Particuology*, 15, 82–89 (2014), (14) application of electrical capacitance tomography in particulate process measurement – A review”, *Advanced Powder Technology*, 25, 174-188 (2014). (15) investigation of granule electrostatic charge generation with normal stress effect”, *Advanced Powder Technology*, 27(5), 2094-2101 (2016), (16) investigation of granular surface roughness effect on electrostatic charge generation”, *Advanced Powder Technology*, 28(9), 2003-2014 (2017).

- With the advancement in medical science and understanding the importance of biodistribution and pharmacokinetics of therapeutic agents, modern drug delivery research strives to utilize novel materials and fabrication technologies for the preparation of robust drug delivery systems to combat acute and chronic diseases. Compared to traditional drug carriers, which could only control the release of the agents in a monotonic manner, the new drug carriers must be able to provide a precise control over the release time and the quantity of drug introduced into the patient’s body. To achieve this goal, Chi-Hwa Wang’s group introduced novel engineered particles with a core-shell microstructure which could precisely tune the release rate for a definite time period. The proposed technology only utilized engineering approaches to shape the particles suitable for a particular purpose. Ideally, such particles could determine flexible release pattern and intensify the efficacy of a therapy via controlling time, duration, dosage, and location of drug release in a predictable, repeatable, and reliable manner. [P. Davoodi, F. Feng, Q. Xu, W.C. Yan, Y.W. Tong, M.P. Srinivasan, V. K. Sharma, C.H. Wang, “Coaxial Electrohydrodynamic Atomization: Microparticles for Drug Delivery Applications”, *Journal of Controlled Release*, 205, 70-82 (2015); P. Davoodi, W.C. Ng, W.C. Yan, M. P. Srinivasan, C.H. Wang, “Double-walled Microparticles-embedded Self-crosslinked, Injectable, and Anti-bacterial Hydrogel for Controlled Sustained Release of Chemotherapeutic Agents”, *ACS Applied Materials & Interfaces*, 8(35), 22785-22800 (2017)].
- Besides working on the fundamental aspects of the particle formation, Chi-Hwa Wang has directed his research toward the translational applications of the particles in biomedicine. His group formulated several drug-loaded micro-/nano-particles precisely designed to release their cargos at specific target sites (inside a patient’s body) and combat diseased cells. In one of these projects, they utilized coaxial electrohydrodynamic atomization for the preparation of microspheres with distinct core/shell structures. This allowed the encapsulation of two drugs with different characteristics in hydrophilic properties in one single step. Variation of ratios between outer flow and inner flow produces polymer microspheres with different core/shell ratios, and consequently resulted in variable release rates of drugs. Significant changes in release patterns were demonstrated when the distributions of the two drugs in microspheres were swapped. Moreover, cell culture experiments and animal experiments have been carried out to testify the performances of different microspheres

in cytotoxicity, cellular apoptosis in vitro and tumor growth inhibition. Moreover, the release rates and characteristic sequences of multi-drugs could be tailored and tuned according to treatment necessity and applied in treating other kinds of tumors. [H. Nie, Y. Fu, C.H. Wang, "Paclitaxel and suramin loaded core/shell microspheres in the treatment of brain tumors", *Biomaterials*, 31, 8732-8740 (2010)].

- Recently, Chi-Hwa Wang's group has started adopting EHDA with 3D-printing technology and utilize the particle formation concept for the precise deposition of materials and cells. The precise deposition of the agents is of great interests as it directly affects the functions of a 3D-bioprinted tissue construct. They used their new technology to precisely deposit a reinforced skin extracellular matrix that supports cell proliferation and metabolism for over a week. Collagen was used as the main component of dermis-mimicking extracellular matrix, to which live primary human cells were added. The primary fibroblasts were seen to proliferate within the reinforced collagen matrix and expressed autologous ECM. This construct supported stratification and differentiation of skin primary cells, as confirmed by biomarker antibody immunohistochemistry. These results support the concept of future routine organotypic culture standardization through the combination of EHDA and 3D-bioprinting.
- The Chi-Hwa Wang research group has developed new projects on translational research of particle technology particularly for renewable energy applications. Since 2012, his research group has focused on the co-gasification based clean energy production from carbonaceous solid waste using advanced particle simulation models and renewable energy technology (e.g. solar energy). Experimental and numerical studies of co-gasification of woody biomass and sewage sludge have been carried out. The gasification experiments were performed in a fixed-bed downdraft gasifier and the experimental results show that 20 wt % dried sewage sludge in the feedstock was effectively gasified to generate producer gas comprising over 30 vol % of syngas with an average lower heating value of 4.5 MJ/Nm³. Further increasing sewage sludge content to 33 wt % leads to the blockage of gasifier, which is resulted from the formation of agglomerated ash. The numerical models were then developed to simulate the reactions taking place in four different zones of the gasifier (i.e., drying, pyrolysis, combustion, and reduction zones) and to predict the producer gas composition and cold gas efficiency. The deviation between the numerical and experimental results obtained was lower than 10%. [Z. Ong, YP Cheng, T. Maneerung, Z. Yao, Y. Dai, Y.W. Tong, C.H. Wang, "Co-gasification of woody biomass and sewage sludge in a fixed-bed downdraft gasifier", *AIChE Journal*, 61, 2508-2521 (2015).

Conference Presentations

1. C.H. Wang, S. Sundaresan and R. Jackson, "Instabilities in Bounded Granular Shear Flow", NATO ASI, Mobile Particulate Systems, Kluwer Academic Publishers, pp386 (1994).
2. C.H. Wang, S. Sundaresan and R. Jackson, "Stability of Bounded Shear Flow of Granular Materials", First International Particle Technology Forum, Denver, Colorado, USA (1994).
3. C.H. Wang, S. Sundaresan and R. Jackson, "Stability of Bounded Granular Shear Flows", AIChE Annual Meeting, San Francisco, (1994).
4. C.H. Wang, S. Sundaresan and R. Jackson, "The Stability of Gravity-driven Flows of Granular Materials", AIChE Annual Meeting, Miami Beach, (1995).
5. C.H. Wang, Z. Tong, S. Dasgupta, S. Sundaresan and R. Jackson, "Mechanism and Fate of Instabilities in Rapid Shear Flow of Granular Materials", *ASCON FBR '96*, 450, Hsitou, Taiwan (1996).
6. C.H. Wang, "Inertia-driven Instabilities in Rapid Shear Flows of Granular Materials", GAMM Annual Meeting, Regensburg, Germany (1997).
7. Z. Tong & C.H. Wang, "The correlation of velocity, density and temperature fields in the rapid shear flow of granular materials", *RSCE*, Vol. 2 pp. 599-605, Johor, Malaysia, October 13-15. (1997).
8. J. Hua, C.H. Wang, W. Fan and G. Liao, "Numerical Simulation of Two-Phase Flow in Liquid Bath with Bottom Gas Injection", *RSCE*, Vol. 2 pp. 413-419, Johor, Malaysia, October 13-15 (1997).
9. J. Li and C.H. Wang, "Two-dimensional simulation of IgG delivery to tumors", *RSCE*, Vol. 2, 585-591, Johor, Malaysia, October 13-15 (1997).

10. C.H. Wang, J. Li, C. S. Teo and T. Lee, "Computer Simulation of BCNU delivery to brain tumors", Proceedings of the Ninth International Conference on Biomedical Engineering, pp263-265, Singapore (1997).
11. J. Hua and C.H. Wang, "Granular Layer under Vertical Vibrations", Fluidization and Fluid-Particle Systems, pp201-205, AIChE Annual Meeting, Los Angeles, USA (1997).
12. C.H. Wang and Z. Tong, "Power Spectrum Analysis of instabilities in rapid shear flow of granular materials", AIChE Annual Meeting, Los Angeles, USA, November 17-21 (1997).
13. C.H. Wang, J. Li, C. S. Teo and T. Lee, "Effect of transvascular permeation on BCNU delivery to brain tumors", AIChE Annual Meeting, Miami Beach, Florida, USA (1998).
14. K. Sengothi and C.H. Wang, "Ethylene vinyl acetate copolymer for the sustained release of Immunoglobulin-G", AIChE Annual Meeting, Miami Beach, Florida, USA (1998).
15. J. S. Hua and C.H. Wang, "Modeling of turbulent bubble-driven liquid flows", AIChE Annual Meeting, Miami Beach, Florida, USA (1998).
16. J. S. Hua, R.B.H. Tan and C.H. Wang, "Granular flow in a vertical pipe - ECT application", AIChE Annual Meeting, Miami Beach, Florida, USA (1998).
17. J. Li and C.H. Wang, "Computer simulation of IgG delivery to tumors", AIChE Annual Meeting, Miami Beach, Florida, USA (1998).
18. D. J. Lee and C.H. Wang, "Theories of cake filtration and consolidation", Environmental Strategies for the 21st Century- An Asia Pacific Conference", pp. 287-292, Singapore (1998).
19. C.-H. Wang, Y. Q. Dong, K. Sengothi, K. L. Tan and E.-T. Kang, "In-vivo tissue Response to Polyaniline", *International Conference on the Science and Technology of Synthetic Metals, Montpellier, France* (1998).
20. J. Zhao and C.H. Wang, "Simulation of cake consolidation: Effect of Friction", Asia-Pacific Surface & Interface Analysis Conference, Singapore (1998).
21. Z. Tong and C.H. Wang, "Density waves in gravity flows of granular materials", Proceedings Symposium on Transport Phenomena and Applications, pp. 11-13, Taipei, Taiwan (1998).
22. C.S. Teo, S.M. Rao, T. Lee and C.H. Wang, "Transient fluid flow in the surgical cavity of brain tumors", Proceedings APCCHE Seoul, Korea, pp 1695-1697 (1999).
23. J. Zhao, C.H., Wang, D.-J. Lee and C. Tien, "Simulation of Cake Consolidation: Effect of Friction", Proceedings APCCHE, Seoul, Korea, pp. 1053-1055 (1999).
24. C.S. Teo and C.H. Wang, "Transient development of interstitial fluid flow field in the surgical cavities of brain tumors", in Session: Fundamental Research in Transport Process II, AIChE Annual Meeting, Dallas, Texas, USA (1999).
25. K. Sengothi, P. Tan, J. Wang, T. Lee, E.-T. Kang and C.-H. Wang, "Biocompatibility of polyaniline polymers in tissues", in Session: Biomaterial Surface Interactions, AIChE Annual Meeting, Dallas, Texas, USA (1999).
26. H.M. Wong, J. Wang, Y.Y. Yang, N.T.S. Chung and C.-H. Wang, "Controlled release studies of IgG from microspheres", in Session: Drug Delivery II, AIChE Annual Meeting, Dallas, Texas, USA (1999).
27. C.S. Teo, S.M. Rao, T. Lee and C.-H. Wang, "Transient interstitial fluid flow field in tumors: effects on drug delivery", in Session: Cancer and Cardiovascular Diseases, AIChE Annual Meeting, Dallas, Texas, USA (1999).
28. S.M. Rao, K. Zhu, S. Sundaresan, and C.H. Wang, "ECT Measurements on the Pneumatic Conveying of Granular Materials", AIChE Annual Meeting, Dallas, Texas, USA (1999).
29. J. Zhao, C.H. Wang, D.J. Lee and C. Tien, "Effect of side-wall friction and cake compressibility on cake consolidation", AIChE Annual Meeting, Dallas, Texas, USA (1999).
30. J. Zhao, C.H. Wang, D.J. Lee and C. Tien, "Simulation of cake consolidation: sensitivity analysis", The 1999 AIChE Annual Meeting and Conferences. Kaohsiung, Taiwan. November 26-27, 1999. In Proceedings 1999 Symposium on Transport Phenomena and Application. pp181-182.
31. F. Goh and C.-H. Wang, "On the delivery of doxorubicin to hepatoma", The 27th International Symposium on Controlled Release of Bioactive Materials, Paris, France, July 7-13, 2000.
32. F. Wang and C.-H. Wang, "Controlled release of a highly water-soluble radiosensitizer from biodegradable devices", AIChE Annual Meeting, Los Angeles, USA (2000).
33. S.M. Rao, K. Zhu, C.H. Wang, S. Sundaresan, "Electrical Capacitance Tomography Measurements on the Pneumatic Conveying of Solids: Effect of Pipe Bend", AIChE Annual Meeting, Los Angeles (2000).
34. Z. Tong and C.-H. Wang, "Density waves in gravity flows of granular materials", AIChE Annual Meeting, Los Angeles (2000).
35. T.H. Lee, J. J. Wang and C.H. Wang, "Controlled Release of Etanidazole from Double-walled Biodegradable Microspheres", *AIChE Annual Meeting*, Nevada, United States, 4-9 November 2001.
36. W.H.K. Tan, T. Lee, and C. H. Wang, "On the Delivery of Etanidazole to Brain Tumor", *6th World Congress of Chemical Engineering*, Melbourne, Australia, 23-27 September 2001.
37. J.J.Wang, K.M. Chua, and C. H. Wang, "The Stabilization, Atomization and Encapsulation of the Human Immunoglobulin G into Biodegradable Microspheres", *AIChE Annual Meeting*, Nevada, United States, 4-9 November 2001.
38. J.J. Wang, C.W. Ng, Y.W. Khin, P. Shoemakers, T. Lee, S.S. Feng, and C.H. Wang, "Controlled Release of Paclitaxel from Spray Dried Poly(lactide-co-glycolide) (PLGA) Microparticles" *6th World Congress of Chemical Engineering*, Melbourne, Australia, 23-27 September 2001.
39. E.Y. Yip, T.H. Lee, J.J. Wang and C.H. Wang, "Controlled Release of Etanidazole from Biodegradable Lactic/glycolic Acid Polymers for Radiotherapy Applications", *AIChE Annual Meeting*, Nevada, United States, 4-9 November 2001.
40. K. Zhu, S.M. Rao, and C.H. Wang, "Pressure and Particle Concentration Measurements on the Pneumatic Conveying of Granular Materials", *6th World Congress of Chemical Engineering*, Melbourne, Australia, 23-27 September 2001.

41. M.P. Zhang, L.L. Chow, Z.C. Yang, and C.H. Wang, "Simulation of Drug Release from Biodegradable Microspheres: Bulk and Surface Erosions", *9th Asian Pacific Confederation of Chemical Engineering Congress Conference*, Christchurch, New Zealand, 29 September-3 October 2002.
42. K.W. Zhu and C.H. Wang, "Pattern Formation in Pneumatic Conveying of Granular Materials", *9th Asian Pacific Confederation of Chemical Engineering Congress Conference*, Christchurch, New Zealand, 29 September-3 October 2002.
43. R. Deng and C.H. Wang, "Stability of Granular Materials under Vertical Vibrations", *AIChE Annual Meeting*, Indiana, United States, 3-8 November 2002.
44. R. Deng and C.H. Wang, "Pattern Formation in a Vertically Vibrated Granular Bed", *AIChE Annual Meeting*, Indiana, United States, 3-8 November 2002.
45. S.J. Lee, R.B.H. Tan, C.H. Wang, and D.J. Lee, "Consolidated Dewatering and Centrifugal Sediments of Flocculated Suspensions of Activated Sludge", *Symposium of Transport Phenomena and Applications and Solid-Liquid Separation Forum*, Taipei, Taiwan, 22 November 2002.
46. K.Y. Win, L. Mu, C.H. Wang, S.S. Feng, "Nanoparticles of Biodegradable Polymers for Cancer Chemotherapy", *Summer Bioengineering Conference*, SonestaBeach Resort in Key Biscayne, Florida, June 25-29, 2003.
47. P.K. Narahariseti, D.N. Lew, C.H. Wang, and Y.C. Fu, "Double Walled Microspheres for the Encapsulation of a Hydrophilic Drug", *30th Annual Meeting & Exposition of the Controlled Release Society*, Glasgow, Scotland, July 19-23, 2003.
48. P.K. Narahariseti, C.H. Wang, and Y.C. Fu, "In Vitro Release of Gentamicin from Implantable Discs and Modified Discs", *30th Annual Meeting & Exposition of the Controlled Release Society*, Glasgow, Scotland, July 19-23, 2003.
49. K.Y. Win, C.H. Wang, S.S. Feng, "Paclitaxel-loaded Particles Enhance the Release of Drug and Improve Cell Uptake", *30th Annual Meeting & Exposition of the Controlled Release Society*, Glasgow, Scotland, July 19-23, 2003.
50. R. Deng and C.H. Wang, "Transient Development of Instabilities in Vertically Vibrating Granular Beds", *AIChE Annual Meeting*, San Francisco, November 16-21, 2003.
51. R. Deng and C.H. Wang, "Application of Particle Image Velocimetry for Pattern Characterization in a Vertically Vibrated Granular Layer", *AIChE Annual Meeting*, San Francisco, November 16-21, 2003.
52. K. Zhu, C.H. Wang, S. Matsusaka, and H. Masuda, "On the Electrostatics of Pneumatic Conveying of Granular Materials Using Electrical Capacitance Tomography", *AIChE Annual Meeting*, San Francisco, November 16-21, 2003.
53. L. Ding, Chi-Hwa Wang, "Characterization of Drug Delivery Particles Formed Using Electrical Hydrodynamic Atomization", *AIChE Annual Meeting*, San Francisco, November 16-21, 2003.
54. L.Y. Lee, T.Y. Quek, R. Deng, M. B. Ray, and C.H. Wang, "Pneumatic Transport of Granular Materials Through a 90° Bend", *Fluidization XI: Present and Future for Fluidization Engineering*, Naples, Italy, 9-14 May 2004.
55. J. Yao, Y. Zhang, C.H. Wang, S. Matsusaka, and H. Masuda, "Electrostatics of the granular flow in a pneumatic conveying system", *AIChE Annual Meeting 2004*, Austin, Texas, United States, 7-12 November 2004.
56. J. Yao and C.H. Wang, "Granular material attrition due to rotary valve in a pneumatic conveying system", *AIChE Annual Meeting 2004*, Austin, Texas, United States, 7-12 November 2004.
57. W.C. Lim and C. H. Wang, "Discrete element modeling for flows of granular material", *AIChE Annual Meeting 2004*, Austin, Texas, United States, 7-12 November 2004.
58. J.W. Xie and C. H. Wang, "Paclitaxel-loaded biodegradable nanoparticles developed by direct dialysis method", *AIChE Annual Meeting 2004*, Austin, Texas, United States, 7-12 November 2004.
59. Y. S. Wong, C. H. Gan, and C. H. Wang, "Tracking study on solids motion in vertically vibrated granular beds", *AIChE Annual Meeting 2004*, Austin, Texas, United States, 7-12 November 2004.
60. R. S. Deng, C. H. Wang, and K. A. Smith, "Bubble behavior in a Taylor vortex", *AIChE Annual Meeting 2004*, Austin, Texas, United States, 7-12 November 2004.
61. T. Y. Quek, M. B. Ray, and C.H. Wang, "Pneumatic transport of granular materials through a bend", *The 9th Asian Conference on Fluidized-Bed and Three-Phase Reactors*, Taipei, Taiwan, 21-24 November 2004.
62. L. S. Ng, R. Lin, R. and C. H. Wang, "In vitro study of anticancer drug doxorubicin in PLGA-based microparticles", *2004 Symposium on Transport Phenomena and Application*, Tainan, Taiwan, 20-21 November 2004.
63. C. H. Wang, "Computational fluid dynamics simulation for drug delivery applications", Chi-Hwa Wang", *3rd MIT Conference on Computational Fluid and Solid Mechanics*, Cambridge, MA, USA, June 14-17, 2005.
64. J Xie and C.H. Wang, "Controlled release devices developed by electrospray for the delivery of anticancer drug", *ICMATSingaporeSuntecCity*, July 3-8, 2005.
65. Y. Zhang, J. Yao and C. H Wang., "Electrical Capacitance Tomography Measurements on Inclined Conveying Pipes", *4th World Congress on Industrial Process Tomography*, Aizu, Japan, 5-8 September 2005.
66. L.K. Lim, C.H. Wang, and K.A. Smith, "On the Process of Electrohydrodynamic Atomization under the Influence of Two Independent Electrical Field Sources", *AIChE Annual meeting*, Cincinnati, Ohio, USA, November 2005.
67. L.K. Lim, C.H. Wang, and K.A. Smith, "Novel Method for Micro- and Nano- Particle Preparation by Electrohydrodynamic Atomization", *AIChE Annual meeting*, Cincinnati, Ohio, USA, November 2005.
68. L.Y. Lee, C.H. Wang, and K.A. Smith, "Nanoparticle Fabrication of Biodegradable Polymers Using Supercritical Antisolvent: Effects of Mixing and Thermodynamic Properties", *AIChE Annual meeting*, Cincinnati, Ohio, USA, November 2005.
69. L.Y. Lee, C.H. Wang, and K.A. Smith, "Fabrication of Controlled Release Devices for Anticancer Agents Using Supercritical Antisolvent Method", *AIChE Annual meeting*, Cincinnati, Ohio, USA, November 2005.
70. F. Y. Leong, C.H. Wang, and K.A. Smith, "Transport of Ultrafine Particles in Bifurcations", *AIChE Annual meeting*, Cincinnati, Ohio, USA, November 2005.

71. F. Y. Leong, C.H. Wang, and K.A. Smith, "Secondary Flow Behavior and Charged Particle Transport in Bifurcations", AIChE Annual meeting, Cincinnati, Ohio, USA, November 2005.
72. R.S. Deng, Y.C. Mak, C.H. Wang, and K.A. Smith, "Study on Taylor Vortex Formation in a Liquid Gap with Significant Boundary Effects", AIChE Annual meeting, Cincinnati, Ohio, USA, November 2005.
73. J. Xie and C.H. Wang, "Micro- and nano-particles developed by electrohydrodynamic atomization for the sustained delivery of paclitaxel to treat C6 glioma", AIChE Annual meeting, Cincinnati, Ohio, USA, November 2005.
74. E.W.C. Lim and C.H. Wang, "Granular Attrition as a Diffusion Phenomenon", AIChE Annual meeting, Cincinnati, Ohio, USA, November 2005.
75. Y.S. Wong, E.W.C. Lim, and C.H. Wang, "First Wavy Instability in Liquid-Fluidized Beds", AIChE Annual meeting, Cincinnati, Ohio, USA, November 2005.
76. E.W.C. Lim and C.H. Wang, "A Computational Study of the Various Flow Regimes in Pneumatic Conveying of Granular Materials", AIChE Annual meeting, Cincinnati, Ohio, USA, November 2005.
77. J. Yao, Y. Zhang, C.H. Wang and Y.C. Liang, "On the Electrostatic Field within Space of Pipe Induced by Granular Flow in a Pneumatic Conveying System", AIChE Annual meeting, Cincinnati, Ohio, USA, November 2005.
78. J. Yao and C.H. Wang, "Granular Attrition Effect on the Electrostatic Behavior in a Pneumatic Conveying System", AIChE Annual meeting, Cincinnati, Ohio, USA, November 2005.
79. J. Xie and C.H. Wang, "Electrospun Micro- and Nanofibers for Sustained Delivery of Paclitaxel to Treat C6 Glioma", Controlled Release Society Annual Meeting, Vienna, Austria, July 22-26, 2006.
80. J. Xie and C.H. Wang, "Protein Encapsulation in Biodegradable Polymeric Particles by Electrospray", Controlled Release Society Annual Meeting, Vienna, Austria, July 22-26, 2006.
81. L.K. Lim, J. Xie, J. Hua, C.H. Wang, and K.A. Smith, "Droplets and Particle Formation in the Electrohydrodynamic Atomization Process", AIChE Annual meeting, San Francisco, USA, November 2006.
82. F.Y. Leong, C.H. Wang, and K.A. Smith, "Transient Effect on Secondary Flow Behaviour in Double Bifurcation Model", AIChE Annual meeting, San Francisco, USA, November 2006.
83. B.Y.S. Ong, P.K. Naraharisetti, J. Xie, C.H. Wang, and N. Sahinidis, "Biodegradable Spray Dried Microspheres and Disc Delivering Paclitaxel and Ethanidazole for the Treatment of Glioma: an in Vivo Subcutaneous Study", AIChE Annual meeting, San Francisco, USA, November 2006.
84. B.Y.S. Ong, L.Y. Lee, J. Xie, K.A. Smith, C.H. Wang, and N. Sahinidis, "Controlled Delivery of Paclitaxel from Electrohydrodynamically Atomized Microparticles and from Micro-Porous Foams for the Post-Surgical Treatment of Glioblastoma Multiforme", AIChE Annual meeting, San Francisco, USA, November 2006.
85. E.W.C. Lim and C.H. Wang, "Voidage Wave Instability in a Vibrated Liquid-Fluidized Bed", AIChE Annual meeting, San Francisco, USA, November 2006.
86. X.H. Zhu, C.H. Wang and Y.W. Tong, "Combination of Proteins on PHBV Microsphere Scaffold to Regulate Hep3B Cells Activity and Functionality for an In Vitro Model of Liver Tissue Engineering", AIChE Annual meeting, San Francisco, USA, November 2006.
87. X.H. Zhu, C.H. Wang and Y.W. Tong, "Growing Tissue-Like Constructs with Hep3B / GepG2 liver Cells on PHBV Microsphere Scaffold", AIChE Annual meeting, San Francisco, USA, November 2006.
88. E.W.C. Lim, Y. Zhang and C.H. Wang, "Effects of Electrostatic Field in Pneumatic Conveying of Granular Materials through a Vertical Pipe", The 10th Asian Conference on Fluidized-Bed and Three-Phase Reactors, Busan, Korea, November 26-29, 2006.
89. Y. Zhang, E.W.C. Lim and C.H. Wang, "Pneumatic Transport Of Granular Materials In A 45° Inclined Conveying Pipe", The 10th Asian Conference on Fluidized-Bed and Three-Phase Reactors, Busan, Korea, November 26-29, 2006.
90. E.W.C. Lim, Y. Zhang and C.H. Wang, "Recent Developments on the Dynamics of Particulate Systems", The 5th International Symposium on Measurement Techniques for Multiphase Flows, Macau, December 10-13, 2006.
91. H. Nie and C.H. Wang, "Fabrication and Characterization of Three Dimensional Fibrous PLGA/HAp Composite Scaffolds for Delivery of BMP-2", ICMAT, Singapore, Suntec City, July 1-6, 2007.
92. H. Nie and C.H. Wang, "Fabrication and Characterization of Three Dimensional Fibrous PLGA/HAp Composite Scaffolds for Delivery of Plasmid-bmp-2", ICMAT, Singapore Suntec City, July 1-6, 2007.
93. J. Xie, R.S. Tan and C. H. Wang, "Micro-Particles and Fibers for Sustained Delivery of Cisplatin", World Congress of Bioengineering, July 9-11, Bangkok, Thailand, 2007.
94. Y. Zhang, Y.C. Liang and C. H. Wang, "Hazard of Electrostatic Generation in Pneumatic Conveying System: Electrostatic Effects on the Accuracy of Electrical Capacitance Tomography Measurements", 5th World Congress on Industrial Process Tomography, Bergen, Norway September 3-6, 2007.
95. J. Yao, J. Xie, L.K. Lim, J. Hua and C.H. Wang, "Electrostatic characterization of electrohydrodynamic atomization process for polymeric particle fabrication", European Congress of Chemical Engineering (ECCE-6) Copenhagen, 16-20 September 2007.
96. J. Xie, W.J. Ng, L.Y. Lee, and C.H. Wang, "Protein-based drugs encapsulation in biodegradable microparticles by coaxial electrospray", European Congress of Chemical Engineering (ECCE-6) Copenhagen, 16-20 September 2007.
97. L.Y. Lee, J.L. Zheng, C.H. Wang, "Porous micro-cellular drug releasing foams as new implant material in post-surgical chemotherapy", European Congress of Chemical Engineering (ECCE-6) Copenhagen, 16-20 September 2007.
98. F.Y. Leong, C.H. Wang, and K.A. Smith, "Modeling charged aerosol transport in bifurcated tubes", AIChE Annual meeting, Salt Lake City, USA, November 2007.
99. D.Y. Arifin, C.H. Wang, and K.A. Smith, "Three-dimensional simulation of *carmustine* delivery to a patient-specific brain tumor", AIChE Annual meeting, Salt Lake City, USA, November 2007.

100. D.Y. Arifin, R.S. Deng, C.H. Wang, and K.A. Smith, "Particle behavior in Taylor vortex", AIChE Annual meeting, Salt Lake City, USA, November 2007.
101. J. Xie and C. H. Wang, "Electrospray in the Dripping Mode for Cell Microencapsulation", Particle Synthesis, Characterization, and Particle-Based Advanced Materials, Wyndham Orlando Resort, Orlando, Florida, USA, May 10-13, 2008. **(Invited Lecture)**
102. L.Y. Lee, L.K. Lim, J. Hua, C.H. Wang, "Jet breakup and droplet formation in near-critical regime of carbon dioxide-dichloromethane system", *APCChE Congress, Convention and Exhibition Center, Dalian, China, August 3-6, 2008.*
103. X.Q. Xu, F.Y. Leong, C.H. Wang, "Transport and deposition of inertial aerosols in bifurcated tubes under oscillatory flow", 1st Asian Conference on Innovative Energy & Environmental Chemical Engineering – A New Paradigm Emerging from Fluidized-Bed and Three-Phase Reactors, Sapporo, Japan, August 31 – September 3, 2008.
104. C.H. Wang, "Numerical Simulation of Cone-Jet Formation in Electrohydrodynamic Atomization", Symposium on Transport Phenomena and Applications, National Taiwan University, Taipei, Taiwan, September 2008. **(Keynote Lecture)**
105. C. H. Wang, "On the Delivery of Paclitaxel to Brain Tumors: An integrated study on the novel fabrication methods of pharmaceutical particles and 3-D computer simulations for chemotherapy applications", EHRlich II – 2nd World Conference on Magic Bullets, Celebrating the 100th Anniversary of the Nobel Prize Award to Paul Ehrlich, Nürnberg, Germany, October 3-5, 2008. **(Invited Lecture)**
106. D.Y. Arifin, K.Y.T. Lee, C.H. Wang, and K.A. Smith, "Elucidating chemotherapeutic drug transport of different agents and of antiangiogenic therapy against a brain tumor", AIChE Annual meeting, Philadelphia, USA, November 2008.
107. S.H. Ranganath and C.H. Wang, "Local intracranial drug delivery using biodegradable PLGA-paclitaxel micro/nanofiber implants to treat malignant brain tumors", AIChE Annual meeting, Philadelphia, USA, November 2008.
108. S.H. Ranganath, A. Yang, Y.Y. Chan, J. Huang, W.B. Krantz, and C.H. Wang, "Implantable hydrogel beads entrapping PLGA-paclitaxel microspheres: Exploring the effects of near-zero order drug release for intracranial chemotherapy", AIChE Annual meeting, Philadelphia, USA, November 2008.
109. J.S. Hua, L.K. Lim and C.H. Wang, "Numerical simulation of deformation / motion of a drop suspended in viscous liquids under influence of steady electric fields", AIChE Annual meeting, Philadelphia, USA, November 2008.
110. A. Rezvanpour¹, G. Tan¹, S.K. Lau, E.W.C. Lim, C.H. Wang, Y.C. Liang, "Applications of Electrical Capacitance Tomography for On-line Monitoring of Pharmaceutical Particle Fabrications", The 3rd International Workshop on Process Tomography, Tokyo, Japan, April 17-19, 2009.
111. H. Nie and C.H. Wang, "BMP-2 Protein/DNA Loaded PLGA/HAp Composite Scaffolds for Treatment of Bone Defects in Nude Mice", ICMAT conference, Suntec City Convention Hall, Singapore, June 29 – July 3, 2009. **(Invited Lecture)**
112. J. Xie and C.H. Wang, "Microparticles Developed by Electrohydrodynamic Atomization for the Local Delivery of Anticancer Drug to Treat C6 Glioma", ICMAT conference, Suntec City Convention Hall, Singapore, June 29 – July 3, 2009. **(Invited Lecture)**
113. J. Xie, A. Rezvanpour, W.C. Lim, C.H. Wang, J. Hua, "Electric Field Controlled Electrospray Deposition for Precise Micropattern Formation", 8th World Congress of Chemical Engineering, Montreal, Canada, August 23-27, 2009.
114. H. Zhou, S.B. Chen, J. Peng and C.H. Wang, "A Study of Effective Diffusivity in Porous Sponge by Brownian Dynamics Simulation", 4th Asia Particle Technology Symposium, 14-16 September, 2009, New Delhi, India.
115. A. Rezvanpour, C.H. Wang, "Enhancement of Particle Collection Efficiency in Electrohydrodynamic Atomization Processes for Pharmaceutical Particle Fabrication", AIChE Annual Meeting, Nashville, TN, USA, Nov. 8-13, 2009.
116. A. Rezvanpour, C.H. Wang, "Simulation of Electrohydrodynamic Atomization for Enhanced Particle Collection Efficiency in an Encapsulation Chamber", AIChE Annual Meeting, Nashville, TN, USA, Nov. 8-13, 2009.
117. X.H. Zhu, D.Y. Arifin, B.H. Khoo and C.H. Wang, "Study of Cell Seeding On Porous Poly(D,L-lactic-co-glycolic acid) Sponge and Growth in a Couette-Taylor Bioreactor", AIChE Annual Meeting, Nashville, TN, USA, Nov. 8-13, 2009.
118. C.H. Wang, "The implications of drug transport and penetration on the efficacy of local chemotherapy: An example of treating brain tumors", Innovative oncology R&D webinar, "Novel Methods for Oncology Drug Delivery and Dispersion", December 1st, 2009, 3:00pm GMT; 10:00am (EST), NextLevel Pharma. **(Invited Lecture)**.
119. C.H. Wang, "On the Delivery of Carmustine and Paclitaxel to Brain Tumors: An integrated study on the novel fabrication methods of pharmaceutical particles and 3-D computer simulations for chemotherapy applications.", EPS International Oncology and Radiology Forum, Yichang International Hotel, Yichang, China, June 19-20, 2010. **(Invited Lecture)**.
120. C.H. Wang, H. Nie, "Core/shell microspheres via coaxial electrohydrodynamic atomization for sustained release of drugs", 18th International Conference on Composites and Nano Engineering, Hilton Hotel, Anchorage, Alaska, USA, July 4-10, 2010.
121. SH Ranganath, Y Fu, DY Arifin, I Kee, L Zheng, HS Lee, P Chow, CH Wang: "Micro/nano-structured implants delivering paclitaxel: Enhanced pharmacokinetics and therapeutic efficacy in treating intracranial glioblastoma in mice." CRS Annual Meeting 2010, Portland, USA, 10-14 July, 2010.
122. SH Ranganath, AL Tan, F He, WB Krantz, CH Wang, "Bio-molecular mass transport across alginate microcapsules with genipin-chitosan membrane shell: Implications for micro-bioreactor based protein delivery". CRS Annual Meeting 2010, Portland, USA, 10-14 July, 2010.
123. J. Xie, C. Lei, Y. Hu, C.H. Wang, "Nanoparticulate Formulations for Paclitaxel Delivery across MDCK Cell Monolayer", The 13th Asia Pacific Confederation of Chemical Engineering Congress, APCChE 2010, Taipei, Taiwan, October 5-8, 2010.

124. R.M. Wua, Y.R. Chena, C.H. Wang and E.W.C. Lim, "Particle Image Velocimetry and Large Eddy Simulation Studies of a Hydrocyclone Separator System", The 13th Asia Pacific Confederation of Chemical Engineering Congress, APCCHE 2010, Taipei, Taiwan, October 5-8, 2010.
125. E.W.C. Lim, Y.X. Tan, J. Qiao and C.H. Wang, "Particle Image Velocimetry Studies of a Taylor Vortex System with Immobilized Porous Scaffolds ", The 13th Asia Pacific Confederation of Chemical Engineering Congress, APCCHE 2010, Taipei, Taiwan, October 5-8, 2010.
126. C.H. Wang, R. Deng, and D.Y. Arifin, "Characterization of Taylor Vortex Flow in a Short Liquid Column", ASCON 2010, 2nd Asian Conference on Innovative Energy & Environmental Chemical Engineering, Phuket, Thailand, Oct. 12-14, 2010.
127. G. Guan, C. Fushimi, M. Ishizuka, Y. Nakamura, A. Tsutsumi, Y. Suzuki, Y. Cheng, W.C. Lim, C.H. Wang, "High-density circulating fluidized bed gasifier for advanced IGCC/IGFC ", ASCON 2010, 2nd Asian Conference on Innovative Energy & Environmental Chemical Engineering, Phuket, Thailand, Oct. 12-14, 2010.
128. C. Lei and C.H. Wang, "Application of DNA Vector-Based RNA Interference (RNAi) Technology in Controlled Release Gene/Drug Delivery Systems for Synergetic Therapy of Malignant Glioma", AIChE Annual Meeting, Salt Lake City, November 7-12, 2010.
129. C. Lei and C.H. Wang, "Functionalized Nanoparticles with Enhanced Blood-Brain Barrier Penetration", AIChE Annual Meeting, Salt Lake City, November 7-12, 2010.
130. Q. Xu, D.W. Pack and C.H. Wang, "Effect of Fabrication Conditions On the Formation of Double-Walled Microspheres and Microfibers by Coaxial Electrospinning/Electrospinning Technique", AIChE Annual Meeting, Salt Lake City, November 7-12, 2010.
131. Q. Xu, C.H. Wang and D.W. Pack, "Combined Modality Doxorubicin-Based Chemotherapy and Chitosan-Mediated p53 Gene Therapy Using Double-Walled Microspheres for Cancer Treatment", AIChE Annual Meeting, Salt Lake City, November 7-12, 2010.
132. A. Rezvanpour and C.H. Wang, "Simulation of electrospay particle deposition process in pharmaceutical micro-patterning", AIChE Annual Meeting, Salt Lake City, November 7-12, 2010.
133. A. Rezvanpour and C.H. Wang, "Application of auxiliary electric field in electrohydrodynamic atomization encapsulation chamber to enhance particle collection efficiency", AIChE Annual Meeting, Salt Lake City, November 7-12, 2010.
134. Y. Nakamura, G. Guan, C. Fushimi, M. Ishizuka, A. Tsutsumi, Y. Suzuki, Y. Cheng, W.C. Lim, C.H. Wang, "Flow structure simulation for a novel coal feeding system of a high-density downer reactor", AIChE Annual Meeting, Salt Lake City, November 7-12, 2010.
135. G. Guan, C. Fushimi, M. Ishizuka, Y. Nakamura, A. Tsutsumi, Y. Suzuki, S. Matsuda, H. Hatano, Y. Cheng, W.C. Lim, C.H. Wang, "Hydrodynamic Behaviors of a Large-Scale Triple-Bed Circulating Fluidized System with High Solids Fluxes", AIChE Annual Meeting, Salt Lake City, November 7-12, 2010.
136. E.W.C. Lim, M. Furlan, R. Feng, C.H. Wang, M. Morbidelli, M. Lattuada, "Gelation of Superparamagnetic Nanoparticles: Experimental and Computational Studies" AIChE Annual Meeting, Salt Lake City, November 7-12, 2010.
137. Q. Xu, D.W. Pack and C.H. Wang, "Controlling Morphology and Size of Double-Walled Microspheres from Coaxial Electrospinning", CRS Annual Meeting, National Harbor, Maryland, July 31-August 3, 2011.
138. Q. Xu, C.H. Wang and D.W. Pack, "Encapsulation of Doxorubicin and Chitosan-p53 Nanoparticles in Monodispersed Double-Walled Microspheres", CRS Annual Meeting, National Harbor, Maryland, July 31-August 3, 2011.
139. A. Rezvanpour, W.B. Krantz, C.H. Wang, "Design and Analysis of a Modified Electrospay Process for Fabricating Polymeric Nano- and Microparticles for Drug Encapsulation", AIChE Annual Meeting, Minneapolis, Minnesota, USA, October 2011.
140. Y. Cheng, E.W.C. Lim, C.H. Wang, G. Guan, Y. Nakamura, M. Ishizuka, C. Fushimi, A. Tsutsumi, "Studies of Solid-Solid Mixing Behaviors In a Downer Reactor", AIChE Annual Meeting, Minneapolis, Minnesota, USA, October 2011.
141. Y. Cheng, E.W.C. Lim, C.H. Wang, J. Yao, G. Guan, C. Fushimi, A. Tsutsumi, "Investigation On Electrostatics In Fluidized Bed", AIChE Annual Meeting, Minneapolis, Minnesota, USA, October 2011.
142. J. Qiao, E.W.C. Lim, C.H. Wang, "Bubble Behavior and Oxygen Transport In a Taylor-Couette Bioreactor", AIChE Annual Meeting, Minneapolis, Minnesota, USA, October 2011.
143. J. Qiao, C.H. Wang, "Flow Characterization In a Taylor-Couette Bioreactor In the Presence of Mobile Scaffolds", AIChE Annual Meeting, Minneapolis, Minnesota, USA, October 2011.
144. C.H. Wang, "Electrospun micro- and nano- particles and fibers for sustained delivery of paclitaxel to treat C6 glioma", International Workshop on Novel Nanotechnology and Nanomaterials for "Science for Human, National Taiwan University of Science and Technology, Taipei, Taiwan, November 21-22, 2011. (**Keynote Lecture**)
145. J. Qiao, C.H. Wang, "Study of cell proliferation in porous scaffold in a Taylor-Couette bioreactor", 14th Asia Pacific Confederation of Chemical Engineering Congress, Singapore, 21-24 Feb. 2012. (**Invited Lecture**)
146. Q. Xu, DW Pack, C.H. Wang, "Study Encapsulation of Doxorubicin and Chitosan-p53 Nanoparticles in Monodispersed Double-Walled Microspheres ", 14th Asia Pacific Confederation of Chemical Engineering Congress, Singapore, 21-24 Feb. 2012.
147. C.H. Wang, "Study of cell seeding on porous Poly(D,L-lactic-co-glycolic acid) sponge and growth in a Couette-Taylor bioreactor", International Conference on BioChemical Engineering - Multifaceted Biochemical Engineering: from the basic sciences to industrial applications, National Taiwan University, Taipei, Taiwan, 24 -25 May, 2012. (**Invited Lecture**)

148. C.H. Wang, A. Rezvanpour, "Computational and Experimental Studies of Electrospray Deposition Process in Pharmaceutical Micro-Pattern Formation", 2nd International Conference on Electrospinning, Jeju, Korea, 29 May - 1 June, 2012.
149. Q. Xu, D.W. Pack, C.H. Wang, "Fabrication, Characterization and Long-term in vitro Release of Hydrophilic Drug using Double-walled Microspheres from Coaxial Electrospinning", 9th World Biomaterials Congress, Chengdu, China, June 1-5, 2012.
150. Y. Cui, Q. Xu, D. Wang, C.H. Wang, "Enhanced Intracellular Delivery and Controlled Drug Release of Magnetic PLGA Nanoparticles Modified with Transferrin", 5th Asia Particle Technology Symposium, National University of Singapore, Singapore, July 2-5, 2012.
151. C. Lei, Y. Cui, I. Kee, L. Zheng, H.S. Lee, P.K.H. Chow, C.H. Wang, "In vitro and In vivo Evaluation on Surface Coated PLGA Nanoparticles Delivering Paclitaxel Across the Blood-brain Barrier for Glioma Therapy", 5th Asia Particle Technology Symposium, National University of Singapore, Singapore, July 2-5, 2012.
152. N. Elango, A. Rezvanpour, C. Yongpan and C.H. Wang, "Investigation of Effects of Electrostatics on Cross Sectional Particle Distribution in Triple Bed Circulating Fluidized Bed (TBCFB)", 5th Asia Particle Technology Symposium, National University of Singapore, Singapore, July 2-5, 2012.
153. Y. Cheng, C.H. Wang, G. Guan, C. Fushimi and A. Tsutsumi, "Experimental Studies on Electrostatic Characteristics in Downer Reactor of a Triple-Bed Combined Circulating Fluidized Bed", 5th Asia Particle Technology Symposium, National University of Singapore, Singapore, July 2-5, 2012.
154. J. Qiao, R. Deng and C.H. Wang, "Particle-Liquid Flow in a Taylor-Couette Device in the Presence of Mobile Porous Particles", 5th Asia Particle Technology Symposium, National University of Singapore, Singapore, July 2-5, 2012.
155. Q. Xu, D.W. Pack, C.H. Wang, "In Vitro Degradation of Double-Walled PLA(PLGA) Microspheres", The 39th Annual Meeting & Exposition of the Controlled Release Society, Centre des congrès de Québec, Quebec City, Canada, July 15-18, 2012.
156. Q. Xu, C.H. Wang, D.W. Pack, "Combined Modality Doxorubicin-Based Chemotherapy and Chitosan-Mediated p53 Gene Therapy Enhances Inhibition of Hepatocellular Carcinoma HepG2 Cell Growth", The 39th Annual Meeting & Exposition of the Controlled Release Society, Centre des congrès de Québec, Quebec City, Canada, July 15-18, 2012.
157. Y. Cheng, D.Y.J. Lau, G. Guan, C. Fushimi, A. Tsutsumi, C.H. Wang, "Experimental and numerical investigations on the electrostatics in the downer reactor", AIChE Annual Meeting, Pittsburgh, 28 October – 2 November, 2012.
158. Y. Cheng, G. Guan, M. Ishizuka, C. Fushimi, A. Tsutsumi, C.H. Wang, "Numerical simulations and experiments on heat transfer around a probe in the downer reactor of a triple-bed combined circulating fluidized bed", AIChE Annual Meeting, Pittsburgh, 28 October – 2 November, 2012.
159. J. Qiao, R. Deng, C.H. Wang, "Droplet Behavior in a Taylor Vortex", AIChE Annual Meeting, Pittsburgh, 28 October – 2 November, 2012.
160. J. Qiao, C.H. Wang, "Study of Cell Proliferation in Porous Scaffold in a Taylor-Couette Bioreactor", AIChE Annual Meeting, Pittsburgh, 28 October – 2 November, 2012.
161. C.H. Wang, "Investigation on electrostatics in the downer and its applications in coal gasification", Collaborative Research Center for Energy Engineering (CEE) International Symposium 2012, Sanjo Conference Hall, The University of Tokyo, November 19-20, 2012 (**Keynote Lecture**).
http://www.energy.iis.u-tokyo.ac.jp/html_seminar/20121119/20121119_program.pdf
161. W. Zhang, Y. Cheng, C.H. Wang, C. Wang, W. Yang "Investigation on Hydrodynamics of Triple-Bed Combined Circulating Fluidized Bed using Electrostatic Sensor and Electrical Capacitance Tomography", 9th European Congress of Chemical Engineering, World Forum, The Hagen, Netherlands, April 21-25, 2013.
162. Y. Cheng, C.H. Wang, "Numerical simulation of coal/biomass gasification for clean energy applications", 9th European Congress of Chemical Engineering, World Forum, The Hagen, Netherlands, April 21-25, 2013.
163. Y. Cui, C.H. Wang, D. Wang, P.K.H. Chow, "Enhanced Chemotherapy for Brain Glioma by Transferrin-modified Magnetic Mesoporous PLGA Nanoparticles with Core-and-Shell Loading of Doxorubicin and Paclitaxel", 40th Controlled Release Society Annual Meeting, Honolulu, Hawaii, USA, 21-24 July, 2013.
164. Q. Xu, H. Qin, Z. Yin, D. W. Pack, C.H. Wang, "Simulation based coaxial electrohydrodynamic atomization process for production of polymeric double-walled microspheres", 40th Controlled Release Society Annual Meeting, Honolulu, Hawaii, USA, 21-24 July, 2013.
165. C.H. Wang, "Electrospun micro- and nano- particles and fibers for sustained delivery of paclitaxel to treat C6 glioma", International Conference of Chemical and Industrial Biotechnology, The Zenith Hotel, Kuantan, Malaysia, 28-29 August 2013. (**Plenary Lecture**)
166. Y. Cheng, L.Q. Lee, W.B. Zhang, C.H. Wang, "Discrete Element Simulation of the Electrostatic Effect On Particle Mixing in Vibrating Beds", AIChE Annual Meeting, San Francisco, 3-8 November 2013.
167. Y. Cheng, C.H. Wang, "Numerical Study On Coal/Biomass Gasification in the Downer of a Triple-Bed Combined Circulating Fluidized Bed", AIChE Annual Meeting, San Francisco, 3-8 November 2013.
168. X. Jiang, W. Gao, Y. Cheng, K.G. Neoh and C.H. Wang, "Co-Gasification of Sewage Sludge and Biomass in a Fixed Bed Downdraft Gasifier", AIChE Annual Meeting, San Francisco, 3-8 November 2013.
169. P. Davoodi, M.P. Srinivasan, C.H. Wang, "Chitosan-Coated Core-Shell Microparticles for Synergistic Delivery of Vitamins and Anti-Cancer Drugs", AIChE Annual Meeting, San Francisco, 3-8 November 2013.
170. P. Davoodi, C.H. Wang, M.P. Srinivasan, "Preparation of Monodispersed Chitosan-Coated Poly(lactic-co-glycolic acid) Particles Suitable for Targeted Drug Delivery Applications", AIChE Annual Meeting, San Francisco, 3-8 November 2013.

171. C.H. Wang, “Numerical and experimental studies on biomass/sewage sludge co-gasification in downdraft gasifier”, 7th World Congress on Particle Technology, Beijing, 19-22 May, 2014. (**Keynote Lecture**)
172. P. Davoodi, R.Z. Chia, C.H. Wang, M.P. Srinivasan, “Chitosan-g-polycaprolactone Graft Copolymer Nanoparticles for Paclitaxel and p53 Plasmid DNA Delivery”, 41th Controlled Release Society Annual Meeting and Exposition, Chicago, Illinois, USA, 13-16 July, 2014.
173. P. Davoodi, C.H. Wang, M.P. Srinivasan, “Enhancement of Cytotoxic and Antineoplastic Activities of Doxorubicin via Vitamin C Co-delivered by Multi-layered Microparticles”, 41th Controlled Release Society Annual Meeting and Exposition, Chicago, Illinois, USA, 13-16 July, 2014.
174. Z. Ong, Y. Cheng, C.H. Wang, “Numerical study of biomass and sludge gasification in downdraft gasifiers”, The Sixth Global Chinese Symposium of Chemical Engineering: Education, Research and Development, Hong Kong, 16-19 July 2014. (**Invited Lecture**)
175. C.H. Wang, K.G. Neoh, T. Maneerung, “WASTE-TO-ENERGY: Biomass/Solid Waste to Clean Energy through Gasification”, 13th International Conference on Sustainable Energy Technologies, HES-SO - Geneva – Switzerland, 25th – 28th August 2014.
176. C.H. Wang, “Gasification of Wastewater Sludge”, The International Workshop on Biomass Energy, Faculty of Agricultural Technology UGM, Yogyakarta, Indonesia, 5-6 September, 2014. (**Keynote Lecture**)
177. P. Davoodi, W.C. Yan, W.C. Ng, YW Tong, M.P. Srinivasan, C.H. Wang, “Long Term Release of Anti-Cancer Drugs Using Double-Wall Microparticles for Breast Carcinoma Treatment”, AIChE Annual Meeting, Atlanta, USA, 16-21 November, 2014.
178. P. Davoodi, L. Xu, M.P. Srinivasan, C.H. Wang, “Lactobionic Acid Functionalized Chitosan-g- β Cyclodextrin-p53 Nanoparticles As Efficient Carriers for Targeted Gene Delivery”, AIChE Annual Meeting, Atlanta, USA, 16-21 November, 2014.
179. R Le, K.G. Neoh, YW Tong, TW Tan, Z Yang, C.H. Wang, “Toxicity Assessment of Bottom Ash from Biomass and Sewage Sludge Co-Gasification”, AIChE Annual Meeting, Atlanta, USA, 16-21 November, 2014.
180. T. Maneerung, J. Liew, S. Kawi, C.H. Wang, “Development of Catalysts and Absorbents from Waste Materials”, AIChE Annual Meeting, Atlanta, USA, 16-21 November, 2014.
181. Z. Ong, Y. Cheng, T. Maneerung, W.C. Yan, S.H. Sim, Z. Yao, Y. Dai, Y.W. Tong, C.H. Wang, “Biomass and Solid Waste Gasification for Clean Energy Production: Experimental and Simulation Studies”, AIChE Annual Meeting, Atlanta, USA, 16-21 November, 2014.
182. C.H. Wang, “Biomass and Solid Waste Gasification for Syngas Production and Utilization of Solid Residue”, 7th Global Chinese Chemical Engineering Symposium, Saixiang Hotel, Tianjin, China, 12-15 July 2015. (**Plenary Lecture**)
183. F. Feng, K.Y. Neoh, P. Davoodi, C.H. Wang, “Fabrication of Double-wall Microparticles with Protein Loaded in the Hydrophilic Gel Core Using Coaxial Electrohydrodynamic Atomization”, 42th Controlled Release Society Annual Meeting and Exposition, Edinburgh, UK, 26-29 July, 2015.
184. P. Davoodi, C.H. Wang, M.P. Srinivasan, “Synthesis of Redox-Sensitive Polymeric Nanoparticles with Potential Drug and Gene Delivery Applications”, 42th Controlled Release Society Annual Meeting and Exposition, Edinburgh, UK, 26-29 July, 2015.
185. Z. Yang, S.K. Koh, W.C. Ng, R.C.J. Lim, H.T.W. Tan, Y.W. Tong, Y. Dai C. Chong, C.H. Wang, “Application of Biochar Arising from Gasification to Rehabilitate Soil of Tropical Secondary Forest on Degraded Land”, 14th International Conference on Sustainable Energy Technologies, Nottingham, UK, 25-27 August 2015. (**Best Poster Presentation Award**)
186. P Dong, T. Maneerung, Z. Yang, Y Shen, X Kan, K.G. Neoh, C.H. Wang, Y.W. Tong, Y. Dai C. Chong, “Co-gasification of Woody Biomass and Solid Waste for Clean Energy Production”, 14th International Conference on Sustainable Energy Technologies, Nottingham, UK, 25-27 August 2015.
187. C.H. Wang, Y.W. Tong, “Challenges on the Co-gasification of Woody Biomass and Solid Waste: A Singapore Story on Waste Minimization and Energy Production”, 14th International Conference on Sustainable Energy Technologies, Nottingham, UK, 25-27 August 2015. (**Keynote Lecture**)
188. T. Maneerung, J. Liew, K. Sibudjing, Y. Dai, C.H. Wang, “Preparation and characterizations of activated carbon from char produced from woody biomass gasification and its application for dye removal”, AIChE Annual Meeting, Salt Lake City, Utah, USA, 7-13 November 2015.
189. X. Zhen, Fendy, W.C. Ng, P. Dong, Y. Dai, K.G. Neoh, C.H. Wang, “Oxidative stress and apoptosis induced by carbon soot in human cell line”, AIChE Annual Meeting, Salt Lake City, Utah, USA, 7-13 November 2015.
190. X. Zhen, L. Rong, C. Ong, G.H. Baeg, W. Zhang, S.N. Lee, S.F.Y. Li, Y. Dai, Y.W. Tong, K.G. Neoh, C.H. Wang, “Rapid Toxicity Screening of Gasification Ashes”, AIChE Annual Meeting, Salt Lake City, Utah, USA, 7-13 November 2015.
191. Z. Yao, Y. Shen, W.C. Yan, Y. Dai, Y.W. Tong, C.H. Wang, “Numerical simulation and experimental study of fixed bed downdraft gasifier”, AIChE Annual meeting (November 2015), AIChE Annual Meeting, Salt Lake City, Utah, USA, 7-13 November 2015.
192. Z. Yao, W. Li, X. Kan, Y. Dai, Y.W. Tong, C.H. Wang, “Investigation of woody biomass and solid residue generated from anaerobic digestion and their allocation to potential energy generation”, AIChE Annual Meeting, Salt Lake City, Utah, USA, 7-13 November 2015.
193. W.C. Yan, Y.W. Tong, C.H. Wang, “CFD Investigation of Nozzle Configuration and Interface Tension Effects on Core-Shell Droplet Formation in Coaxial Electrohydrodynamic Atomization Process”, AIChE Annual Meeting, Salt Lake City, Utah, USA, 7-13 November 2015.

194. W.C. Yan, D. Tan, K.T. Pun, Y.W. Tong, V. K. Sharma, C.H. Wang, "Preparation of Tissue Plasminogen Activator Loaded Microbubbles for Potential Application in Ischemic Stroke Treatment", AIChE Annual Meeting, Salt Lake City, Utah, USA, 7-13 November 2015.
195. T. Maneerung, Y. Shen and C.H. Wang, "Fixed-bed downdraft gasification of waste and biomass: Conversion process analyses, and solid residues reutilization", 4th International Conference on Sustainable Chemical Product and Process Engineering (SCPPE 2016), Nanjing, Novotel Hotel, May 31 – June 3, 2016. (**Keynote Lecture**)
196. X. Kan, Z. Yao, J. Zhang, Y.W. Tong, C.H. Wang, "Energy performance of a two-stage treatment for waste lignocellulosic biomass: Effects of organic loading rate, hydraulic residence time and carrier gas", 15th International Conference on Sustainable Energy Technologies (SET2016), Singapore, 20-22 July 2016.
197. Z. Yao, W. Li, X. Kan, Y. Dai, Y.W. Tong and C.H. Wang, "Experimental and numerical study on combining anaerobic digestion and gasification for potential energy recovery from biomass and sewage sludge", 15th International Conference on Sustainable Energy Technologies (SET2016), Singapore, 20-22 July 2016.
198. Y. Shen, C. Chong, W.D. Xiao, C.H. Wang, "Struvite precipitation for ammonia removal for gasification", 15th International Conference on Sustainable Energy Technologies (SET2016), Singapore, 20-22 July 2016.
199. W.C. Ng, R. Ling, Y. Shen, Y. Dai, C.H. Wang, 'Co-gasification of woody biomass and chicken manure for syngas production and reutilization of gasification derived biochar for water pollutant removal', 15th International Conference on Sustainable Energy Technologies (SET2016), Singapore, 20-22 July 2016.
200. X. Kan, Y. Shen, Z. Yao, Y. Dai and C.H. Wang, "Numerical Study on Utilization of Biogas and Syngas Produced from Municipal Solid Waste in Internal Combustion Engine", AIChE Annual Meeting, San Francisco, 12-18 November 2016.
201. W.C. Ng, W.L. Teo, P. Dong, Y.P. Ting, K.G. Neoh, C.H. Wang, "Leaching and recovery of vanadium from carbon soot", AIChE Annual Meeting, San Francisco, 12-18 November 2016.
202. Y. Shen, W.C. Yan, W. Zhan, Y.W. Ng, Z.H. Luo, C.H. Wang, "Numerical Simulation of Downdraft Biomass Gasifier: Influence of Structure Designs Using CFD Simulation", AIChE Annual Meeting, San Francisco, 12-18 November 2016.
203. Y. Shen, C. Chong, W. Xiao, C.H. Wang, "Struvite Precipitation for Nitrogen Removal in Horse Manure for Gasification: Experimental Study and Economic Analysis", AIChE Annual Meeting, San Francisco, 12-18 November 2016.
204. Z. Yao, W. Li, X. Kan, Y. Dai, Y.W. Tong, C.H. Wang, "Experimental and Numerical Study on Combining Anaerobic Digestion and Gasification for Potential Energy Recovery from Biomass and Sewage Sludge", AIChE Annual Meeting, San Francisco, 12-18 November 2016.
205. Z. Yao, S. You, W.C. Yan, Y. Dai, Y.W. Tong, C.H. Wang, "Experimental and Numerical Study on Combining Anaerobic Digestion and Gasification for Potential Energy Recovery from Biomass and Sewage Sludge", AIChE Annual Meeting, San Francisco, 12-18 November 2016.
206. W.C. Yan, Y.W. Tong, C.H. Wang, "Towards Large Scale Production of Core-Shell Microparticles: Multi-Scale Modelling and Experimental Studies", AIChE Annual Meeting, San Francisco, 12-18 November 2016. (**Invited Lecture**)
207. S. You, Z. Yao, Y. Dai, Y.W. Tong, C.H. Wang, "Size-Dependent Chemical Compositions in Particulate Matters from Major Outdoor Sources in a Megacity and Corresponding Inhalation Exposure Assessment", AIChE Annual Meeting, San Francisco, 12-18 November 2016.
208. S. You, Z. Yao, Y. Dai, Y.W. Tong, C.H. Wang, "Particulate Pollutants Emission from Gasification and Corresponding Inhalation Exposure Assessment", AIChE Annual Meeting, San Francisco, 12-18 November 2016.
209. W. Zhan, D. Arifin, C.H. Wang, "The Effect of Infusion Position on Convection-Enhanced Delivery of Anticancer Drugs to Remnant Brain Tumour after Surgery", AIChE Annual Meeting, San Francisco, 12-18 November 2016.
210. W. Zhan, C.H. Wang, "Numerical Study on the Hydrodynamics Behaviour in Bubbling Fluidized Bed for Sewage Sludge Gasification", AIChE Annual Meeting, San Francisco, 12-18 November 2016.
211. T. Maneerung, W.C. Ng, C.H. Wang, "Turning Biomass/Solid Waste into Energy and Valuable Materials", 2nd International Conference on Biological Waste as Resource 2017 (BWR2017), Hong Kong, 25-27 May 2017 (**Keynote Lecture**)
212. S. You, Z. Yao, Y. Dai, Y.W. Tong, C.H. Wang, "Particulate emission from the gasification of solid wastes: Feedstock-dependant particle size distributions and chemical compositions", 5th International Conference on Sustainable Solid Waste Management, Athens, Greece, 21–24 June 2017.
213. T. Maneerung, X. Li, S. Ye, K. Xiang, Y. Dai, C.H. Wang, "Conversion of Biomass and Waste Materials into Biofuel, Bioenergy and Valuable Resources" 1st International Symposium on Bioenergy and Environment (BEE2017), Tianjin, China, 9-12 July, 2017. (**Invited Lecture**)
214. X. Kan, D. Zhou, W. Yang, C.H. Wang, "A waste-to-energy study on utilization of biogas and syngas produced from biomass waste in internal combustion engine", 16th International Conference on Sustainable Energy Technologies 17-20 July 2017, Bologna, Italy.
215. T. Maneerung, X. Li, C. Li, Y. Dai, C.H. Wang, "Combined fixed-bed gasification with power generation as a hybrid waste-to energy system", Asian Particle Technology Symposium (APT2017), Taoyuan, Taiwan, 30 August - 3 September 2017. (**Keynote Lecture**)
216. C.H. Wang, Y. Shen, W. Xiao, M.T.T. Tan, C. Chong, "Ammonia removal by struvite precipitation for horse manure waste gasification: Experimental study and economic analysis", 10th World Congress of Chemical Engineering, Barcelona, Spain, 1-5 October, 2017.
217. T. Maneerung, W.C. Ng, X. Cui, C.H. Wang, "Gasification-Derived Biochar Adsorbents for Wastewater Treatment and Emerging Contaminants Removal", 255th ACS National Meeting, New Orleans, LA, March 18-22, 2018. (**Invited Lecture**).

218. J. Yao, S. Cong, Y. Zhao, C.H. Wang, “Investigation of Granular Surface Roughness Effect on Electrostatic Charge Generation”, World Congress of Particle Technology, 22-26 April, Orlando, USA.
219. Avi Uzi, Ye Shen, Haigang Wang, Avi Levy, C.H. Wang, “Investigation of Sludge Conversion During Gasification Process Using Electrical Capacitance Tomography”, World Congress of Particle Technology, 22-26 April, Orlando, USA.
220. J. Heng Teoh, R. Deng, C.H. Wang, “From Bubbles to Cells: A decade of investigation into the phenomenon of object motion in the Taylor-Couette flow”, International Couette Taylor Workshop, Marseille, France, 11-13 July 2018. **(Invited Lecture)**
221. Y. Shen, X. Li, Z. Yao, C.H. Wang, “Downdraft Biomass Gasifier Operation and Design for Synthetic Gas and Biochar Production”, Chinese Engineering Thermo-Physics Multiphase Flow and National Natural Science Foundation Annual Meeting, Beijing, China 19-21 October 2018. **(Plenary Speaker)**.
221. C.H. Wang, “Particle Technology: From Fundamentals to Translational Pharmaceutical and Energy Applications”, AIChE Annual Meeting, Pittsburgh, USA, 28 October – 2 November, 2018. **(Invited Lecture)**
222. Y. Shen, X. Kan, C.H. Wang, “Investigation on CO₂ co-Gasification of Horticultural Waste and Sewage Sludge for Energy Production”, AIChE Annual Meeting, Pittsburgh, USA, 28 October – 2 November, 2018.
223. S. You, Z. Yao, Y. Li, R. Fu, Y.W. Tong, C.H. Wang, “Towards understanding fly ash transport and deposition in the human respiratory system: Effects of physiological conditions and fly ash properties”, AIChE Annual Meeting, Pittsburgh, USA, 28 October – 2 November, 2018.
224. Z. Yao, A. Uzi, T. Ge, C.H. Wang, “Multi-scale Modelling of Biomass Gasification: the Effects of Intraparticle Transfer on Syngas and Biochar Production”, AIChE Annual Meeting, Pittsburgh, USA, 28 October – 2 November, 2018.
225. Z. Yao, H. Li, G. Zhan, S.N. Koh, C.H. Wang, “Experimental investigation and process design for the conversion of carbon black waste into valuable resources”, AIChE Annual Meeting, Pittsburgh, USA, 28 October – 2 November, 2018.
226. X. Yang, Y.S. Ok, W. Ng, Y. Shen, C.H. Wang, 4th Asia Pacific Congress of Biochar, “Characterization and ecotoxicological investigation of biochar produced via slow pyrolysis: effect of feedstock composition and pyrolysis conditions”, Forshan, China, 3-4 November 2018. **(Invited Lecture)**
227. J.H. Teoh, R. Deng, Chi-Hwa Wang, “Computational and Experimental Investigations of the Interplay of Interactions between Gas, Solid and Liquid Phases in the Taylor-Couette Flow”, The 14th International Conference on Gas-Liquid and Gas-Liquid-Solid Reactor Engineering (GLS-14), Guilin, China, 31 May – 3 June, 2019. **(Keynote Lecture)**
228. V. Sunil, A. Mozhi, C.H. Wang, “Enhanced tumor delivery of SP1 Protein Inhibitor using DSPE-PEG Micelles for the treatment of recurrent high-grade glioma”, Valencia, Spain, 21-24 July, 2019.
229. J. Teoh, C.H. Wang, “Production of Skin Tissue Via 3D Bioprinting”, Valencia, Spain, 21-24 July, 2019.
230. Z. Yao, C.H. Wang, “Multi-scale Modelling of Biomass Gasification: the Effects of Intraparticle Transfer and Particle Fragmentation on Gasification Performance”, 7th UK-China International Particle Technology Forum, Edinburgh, UK, 28-31 July, 2019. **(Keynote Lecture)**
231. Y. Shen and C.H. Wang, “Energy recovery from sewage sludge by combined hydrothermal pretreatment and CO₂ gasification”, APCChE 2019, Sapporo, Japan, 23-27 September 2019. **(Keynote Lecture)**
232. Z. Yao, A.K. Prabhakar, B.C. Mohan, C.H. Wang, “Treatment and Utilization of Solid Residues from Waste Combustion Facilities and Carbon Black Waste for a Sustainable Environment”, 22nd Conference on Process Integration for Energy Saving and Pollution Reduction - PRES'19, Agios Nikolaos, Crete, Greece, 20–23 October, 2019.
233. X. He, Z. Yao, C.H. Wang, “Optimal Design and Operation of Biomass Waste Gasification for Energy and Biochar Production”, AIChE Annual Meeting, Orlando, Florida, USA, 10-15 November, 2019.
234. H. Li, H. Tian, T.H. Chang, J. Zhang, S.N. Koh, X. Wang, C.H. Wang, P.Y. Chen, High-purity V₂O₅ Nanosheets Synthesized from Gasification Waste: Flexible Energy Storage Devices and Environmental Assessment, AIChE Annual Meeting, Orlando, Florida, USA, 10-15 November, 2019.
235. H. Li, B. C. Mohan, A. Mozhi, C.H. Wang, “Waste to Resource: Synthesis of electrolyte in vanadium redox flow battery from fly ash”, AIChE Annual Meeting, Orlando, Florida, USA, 10-15 November, 2019.
236. X. Li, Y. Shen, L. Wei, C. He, A. A. Lapkin, W. Lipinski, Y. Da^f, C.H. Wang, “Hydrogen Production of Solar-Driven Steam Gasification of Sewage Sludge in An Indirectly Irradiative Fluidized-Bed Reactor”, AIChE Annual Meeting, Orlando, Florida, USA, 10-15 November, 2019.
237. Y. Shen, Z. Yao, X. He, L. Wei, C.H. Wang, “Gasification of Biomass Particles: Biochar Production, Particulate Emission, and Process Simulation”, AIChE Annual Meeting, Orlando, Florida, USA, 10-15 November, 2019. **(Invited Lecture for Special Session in Honor of Professor A. Tsutsum, University of Tokyo)**
238. J.H. Teoh, A.M. *Thamizhchelvan*, C.H. Wang, “Post-Processing of 3D Bioprinted Human Dermal Tissue in the Dynamic Culture Environment of a Taylor-Couette Device”, AIChE Annual Meeting, Orlando, Florida, USA, 10-15 November, 2019.
239. J.H. Teoh, A.M. *Thamizhchelvan*, S.M. Tay, C.H. Wang, “Complex Multi-layered Microparticle Laden Fixed Hydrogel Wound Dressing Fabricated via 3D Printing for the Treatment of Thermal Burns”, AIChE Annual Meeting, Orlando, Florida, USA, 10-15 November, 2019.
240. C.H. Wang, “Biotechnology for Renewable Energy and Environmental Applications”, International Conference on New Horizons in Biotechnology (NHBT-2019); Trivandrum, Kerala, India, Hotel Residency Towers, Trivandrum, India. November 20-24, 2019. **(Invited Lecture)**
241. L. F. Li, X. He, C.H. Wang, “A circular economy approach by co-gasification of algal bloom and chicken manure”, ICCE & BWR, 10-13 December 2019, Busan, Korea. **(Keynote Lecture)**

242. A.K. Prabhakar, C.H. Wang, “Geopolymerisation using coal fly ash and wood fly ash with internal and external alkali sources”, Engineering Sustainable Development, Korea University, Seoul, South Korea, 12-13 December 2019. **(Invited Lecture)**
243. J.H. Teoh, A. M. Thamizhchelvan, C.H. Wang, “Systematic Application of 3D bioprinting in the Fabrication of a Composite Full Thickness Human Skin Model”, AIChE Annual Meeting, San Francisco, Virtual Conference, 15-20 November 2020.
244. V. Sunil, A. M. Thamizhchelvan, C.H. Wang, “Dual Responsive Backbone Shattering Organelle Targeted Nano-prodrug to modulate oxygen consumption for effective Chemophotherapy”, AIChE Annual Meeting, San Francisco, Virtual Conference, 15-20 November 2020.
245. V. Sunil, A. M. Thamizhchelvan, C.H. Wang, “Convection Enhanced Delivery of Light Responsive Antigen Capturing Oxygen Generators for Photoimmunotherapy of Hypoxic Tumors”, AIChE Annual Meeting, San Francisco, Virtual Conference, 15-20 November 2020.
246. M. Liu, F. Li, H. Liu, C.H. Wang, “Synergistic effect on co-gasification of chicken manure and petcoke: an investigation of sustainable waste management”, AIChE Annual Meeting, San Francisco, Virtual Conference, 15-20 November 2020.
247. A.K. Prabhakar, C.H. Wang, “Alkali Activated Geopolymeric Cementitious Material Production Using Coal and Wood Fly Ash”, AIChE Annual Meeting, San Francisco, Virtual Conference, 15-20 November 2020.
248. A.K. Prabhakar, C.H. Wang, “Toxicity Study of Powdered and Cast Incinerated Sewage Sludge Ash - Chemical Treatment, Leaching Patterns and Marine Toxicity”, AIChE Annual Meeting, Virtual Conference, 15-20 November 2020.
249. Q. Sun, X. Li, W. Lipiński, Ning Yan, C.H. Wang, “Porous Silica-Encaged Ultrafine Metal Nanocatalysts for Solar Thermochemical Methane Reforming”, AIChE Annual Meeting, San Francisco, Virtual Conference, 15-20 November 2020.
250. X. Li, Q. Sun, W. Lipiński, Y. Dai, C.H. Wang, “CO₂ Gasification of Sewage Sludge, Plastic Waste, and Municipal Solid Waste in an Internally Circulated Fluidized Bed Under High-Flux Solar Irradiation”, AIChE Annual Meeting, San Francisco, Virtual Conference, 15-20 November 2020.
251. X He, H. Tian, Y. W. Tong, C.H. Wang, “Life-cycle greenhouse gas emission analysis for integrated sewage sludge and food waste management strategy”, International Conference on Applied Energy 2020, Dec. 1 - 10, 2020, Bangkok / Virtual.
252. X. Li, C. W. Lim, J. Chen, Y. Dai, C.H. Wang, “Experimental study on heat transfer of a high-temperature solar reactor for biomass gasification applications”, International Conference on Applied Energy 2020, Dec. 1 - 10, 2020, Bangkok / Virtual.
253. Shuang Song, Hugh T. W. Tan, C.H. Wang, “Gasification biochar for urban agriculture and circular economy”, “Asia Pacific Biochar Conference 2021, 11 May 2021. **(Invited Lecture)**
254. F. Li, C.H. Wang, “Sustainable production of jet-fuel range hydrocarbons and carbonaceous materials”, 3rd International Conference for Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability, 19 May 2021. **(Invited Lecture)**
255. L. Li, Z.M.H.M. Shafie, T. Huang, R. Lau, C.H. Wang, “Multiphysics Simulations of Concentric-Tube Internal Loop Airlift Photobioreactors for Microalgae Cultivation”, AIChE Annual Meeting, Phoenix, Arizona, USA, 13-18 November 2022.
256. L. Li, X. Xu, W. Wang, R. Lau, C.H. Wang, “Hydrodynamics and mass transfer of concentric-tube internal loop airlift reactors: A review”. AIChE Annual Meeting, Phoenix, Arizona, USA, 13-18 November 2022.
257. B. Wang, X. Li, X. Zhu, Y. Wang, T. Tian, Y. Dai, C.H. Wang, “Geometry Design and Thermodynamic Analysis of An Epitrochoidal Rotary Reactor for Solar Hydrogen Production via Ceria Redox Cycling”. AIChE Annual Meeting, Phoenix, Arizona, USA, 13-18 November 2022.
258. C.H. Wang, L. Li, “Multiphase reactors in solar-assisted fuel and chemical production”, Fluidization XVII, Edinburgh, UK, 21-25 May 2023.
259. J. Wu, Y. Wang, G. Lin, L. Li, C.H. Wang, T. Ge, “The application of biochar as the soil conditioner for vegetable planting in greenhouses with direct air capture CO₂ enrichment: a comparative study”, 10th International Conference on Sustainable Solid Waste Management, Chania, Crete Island, Greece, 21-24 June 2023.
260. Y. Wang, C.H. Wang, “Synthesis of carbon nanotube-biochar composites by plastic pyrolysis and biomass gasification”, 10th International Conference on Sustainable Solid Waste Management, Chania, Crete Island, Greece, 21-24 June 2023.
261. Y. Wang, C.H. Wang, “Plantation of sunflowers in elevated carbon dioxide concentration by the addition of biochar”, 10th International Conference on Sustainable Solid Waste Management, Chania, Crete Island, Greece, 21-24 June 2023.
262. A. K. Prabhakar, B. C. Mohan, T. S. Tay, S. S.-C. Lee, M.S.; S. L.M. Teo, C.H. Wang, “Sewage Sludge Ash Based Mortar for Construction Material- Physico-Chemical, Mechanical Studies, Macrofouling & Marine Toxicity”, 10th International Conference on Sustainable Solid Waste Management, Chania, Crete Island, Greece, 21-24 June 2023.
263. C.H. Wang, “Conversion of Waste to Energy and Resource”, 20th Conference on Sustainable Energy Technologies, Nottingham, UK, 15-17 August 2023. **(Keynote Lecture)**
264. D. Xu, B. Wang, X. Li, Y. Dai, C.H. Wang, “Solar-Driven Biomass Chemical Looping Gasification for Production of Syngas and H₂: Thermodynamic Analysis and Proof-of-Concept Experiment”, AIChE Annual Meeting, 5-10 November 2023, Orlando, Florida, USA.

265. Y.W. Cheng, W. Fu, D. Xu, G. Lin, “Elucidating catalytic pyrolysis of representative textile wastes over waste glass-derived silica-supported transition metal catalysts”, AIChE Annual Meeting, 5-10 November 2023, Orlando, Florida, USA.
266. Y.B. Tan, Y. Wen, Y. Wang, C.H. Wang, “Machine Learning Model to Predict the Mass Yield of Digestate Hydrothermal Carbonization”, Energy Transitions for a Sustainable Future, 15th International Conference on Applied Energy, Doha, Qatar, December 3-7, 2023.