

Resume

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Personal

- Date and place of birth: July 1976, Suzhou, P. R. China.

Working Experience

- Professor, Department of Earth and Environmental Engineering, Columbia University, 2017-present.
- Associate Professor, Department of Earth and Environmental Engineering, Columbia University, 2009-2017.
- Associate Professor, Department of Civil Engineering and Engineering Mechanics, Columbia University, 2007-2009.
- Assistant Professor, Department of Civil Engineering and Engineering Mechanics, Columbia University, 2003-2006.
- Postdoctoral Research Fellow, Harvard University, 2001-2003. Advisor: Professor John W. Hutchinson.

Education

- Ph.D., Solid Mechanics, Division of Engineering and Applied Sciences, Harvard University, May 2001. Advisor: Professor John W. Hutchinson.
Thesis Title: Foreign Object Damage and Fatigue Cracking.
- S.M., Engineering Science, Division of Engineering and Applied Sciences, Harvard University, May 1998. Advisor: Professors John W. Hutchinson and Anthony G. Evans.
- M.E., Engineering Mechanics, Department of Engineering Mechanics, Tsinghua University, June 1997. Advisor: Professor Keh-Chih Hwang.

Thesis Title: Study of micromechanics constitutive relations for ferroelectric single crystal with domain switching.

- B.E., Engineering Mechanics, Department of Engineering Mechanics, Xi'an Jiaotong University, June 1994.

Research Interests

- Applied Mechanics: Using multi-scale, multi-phase and multi-physics modeling, simulation, and experimental approaches, to investigate interdisciplinary mechanics frontiers in novel materials addressing challenges in energy and environment, nanomechanics, and mechanobiology.

Awards and Honors

- Fellow, American Society of Mechanical Engineers (ASME), 2014.
- 1000 Talents Program (National Honorary Visiting Professor), China, 2014.
- State Honorary Visiting Professor, Zhejiang Province, China, 2013.
- Thomas J.R. Hughes Young Investigator Award, Applied Mechanics Division, ASME, 2012. "For special achievement for young investigators in applied mechanics under the age of 40".
- Participant of Frontiers of Engineering Symposium, US National Academy of Engineering, 2012. (recognized as one of the top engineers in the country between the ages of 30-45)
- Member, Faculty of 1000, Macromolecular Chemistry Section, 2012. "One of the experts who is highly respected in their chosen fields and nominated to the Faculty of 1000 (F1000) by their peers".
- Distinguished Collaborator Fellowship, Murdoch University, Australia, 2012.
- JSPS Fellowship, Japan Society for the Promotion of Science, Japan, 2012.
- Young Investigator Medal, Society of Engineering Science (SES), 2011. "For young researcher (within 10 years of Ph.D.) whose work has already had an impact in his/her field within Engineering Science".
- Best Outstanding Achievement Award (for international collaboration), Hanyang University, Korea, 2011.
- Sia-Nemat Nasser (SNN) Early Career Award, Materials Division, ASME, 2010. "For research excellence in the areas of experimental, computational, and theoretical mechanics and materials by young investigators who are within 10 years after their Ph.D."
- Chang Jiang Visiting Scholar Award, Chinese Ministry of Education, China, 2010.
- Outstanding Oversea Young Investigator Award, National Science Foundation of China, 2009.
- World Class University Visiting Scholar Award, National Research Foundation of Korea, 2009.
- Presidential Early Career Award for Scientists and Engineers (PECASE), nominated by NSF, received from President George W. Bush in Whitehouse in December 2008 (for fiscal year 2007). Quote "In recognition for his outstanding research involving mismatch damages in thin-films and nano-scale self-assembly; and for his elaborate education and outreach activities, including summer programs for under-represented high school students."
- NSF CAREER Award, 2007 (for fiscal year 2006).
- NSF Summer Institute Fellowship in nanomechanics, 2006.

Awards and Honors Obtained by Graduate Students

- NSF CAREER Award, by former Ph.D. student Jie Yin, 2019
- NSF CAREER Award, by former Ph.D. student Ling Liu, 2018
- Nomination of University-wide Best Teaching Assistant, by Xiangbiao Liao, 2018.
- NSF Student Travel Grant for ASME IMECE 2013 Micro/Nano Poster Forum, by Jun Xu, 2013.
- Beckman Institute Fellowship, by Baoxing Xu, 2012.
- NSF Student Travel Grant for ASME IMECE 2011 Micro/Nano Poster Forum, by Baoxing Xu, 2011.
- NSF Grantee Conference Student Travel Award, by Baoxing Xu, 2011.
- USNCTAM Student Travel Award, by Ling Liu, 2010.
- Founders Prize, American Academy of Mechanics, by Jie Yin (sole winner), 2009.
- Founders Prize, American Academy of Mechanics (arguably one of the highest honor for graduate student in mechanics in US), by Ling Liu (sole winner), 2008.
- Boeing Graduate Fellow Award, by Baoxing Xu, 2008.
- Mindlin Scholar, by Yuye Tang, 2008.
- Mindlin Scholar (highest honor for graduate student in the Department of Civil Engineering and Engineering Mechanics at Columbia University), by Manhong Zhao, 2007.

Professional Affiliations

- Fellow, American Society of Mechanical Engineers (ASME).
- Member, American Academy of Mechanics (AAM).
- Member, Materials Research Society (MRS).

Professional Activities

- Director, Earth Engineering Center, 2019-present
- Director, Center for Advanced Materials for Energy and Environment, 2018-present
- Chair, Materials Division, ASME, 2016-2017. Executive Committee, 2012-2017.
- Member, Faculty of 1000, Macromolecular Chemistry Section, 2012-present.

Editorship

- Editor, *iMechanica Journal Club* (the largest professional website for mechanics and mechanicians), 2010-2012.
- Associate Editor, *Mechanics Research Communications*, 2007-present.
- Associate Editor, *Journal of Nanomechanics and Micromechanics*, 2010-present.
- Associate Editor, *Journal of Surfaces and Interfaces in Materials*, 2011-present.

Ph.D.'s Graduated

- Manhong Zhao, Ph.D. 2007. Thesis title: Nanoindentation: science and applications.
- Yuye Tang, Ph.D. 2008. Thesis title: Mechanics of biomolecules: a hierarchical approach.
- Ling Liu, Ph.D. 2010. Thesis title: Nanofluids: fundamentals and applications in energy conversion.

- Jie Yin, Ph.D. 2010. Thesis title: Mechanical self-assembly: science and applications.
- Jianbing Zhao, Ph.D. 2010. Thesis title: Mechanical energy dissipation system using nanoporous materials.
- Baoxing Xu, Ph.D. 2012. Thesis title: Science of nanofluids and energy conversion.
- Jun Xu, Ph.D. 2014. Thesis title: Science of impact dynamics and energy dissipation at nanoscale.
- Junfeng Xiao, Ph.D. 2016. Thesis title: The stability at the solid-solid and solid-liquid interface.
- Xiaoyang Shi, Ph.D. 2017. Thesis title: Study of a humidity-swing carbon dioxide sorbent.
- Hang Xiao, Ph.D. 2017. Thesis title: Low-dimensional Material: Structure-property Relationship and Applications in Energy and Environmental Engineering.
- Xiangbiao Liao, Ph.D. 2019. Thesis title: Engineered Morphologic Material Structures: Physical/Chemical Properties and Applications

Refereed Journal Publications (* as corresponding author, ^ student, postdoc, or visiting scholar supervised by me)

H-index: 46; Categorized below (a few interdisciplinary papers may belong to several areas and in the following, each paper is only categorized into one area). In addition, over 10 papers are currently under review or revision. **H-index is 54 according to [Google](#) and 46 according to [Web of Science](#).**

Mechanics vs. Energy/Environment related Materials and Systems

1. Xiangbiao Liao[^], Changmin Shi, Tianyang Wang, Boyu Qie, Youlong Chen, Pengfei Yang, Qian Cheng, Haowei Zhai, Meijie Chen, Xue Wang, Xi Chen*, Yuan Yang, High Energy Density Foldable Battery Enabled by Zigzag-Like Design. *Advanced Energy Materials*, 2018: 1802998.
2. Pengcheng Yao, Bin Zhu, Haowei Zhai, Xiangbiao Liao[^], Yuxiang Zhu, Weiheng Xu, Qiang Cheng, Charles Jayyosi, Zheng Li, Jia Zhu, Kristen Myers, Xi Chen, Yuan Yang, PVDF/Palygorskite Nanowire Composite Electrolyte for 4 V Rechargeable Lithium Batteries with High Energy Density. *Nano Letters*, 2018, 18: 6113-6120.
3. Xiaoyang Shi[^], Hang Xiao[^], Xiangbiao Liao[^], Mitchell Armstrong, Xi Chen*, Klaus Lackner, Humidity effect on ion behaviors of moisture-driven CO₂ sorbents. *Journal of Physical Chemistry*, 2018, 149: 164708.
4. Weiguo Mao[^], Zhuo Wang, Caisheng Li, Xiaoxue Zhu, Cuiying Dai, Haoyong Yang, Xi Chen*, Daining Fang, In-situ characterizations of chemo-mechanical behavior of free-standing vanadium pentoxide cathode for lithium-ion batteries during discharge-charge cycling using digital image correlation. *Journal of Power Sources*, 2018, 402: 272-280.
5. Cheng Zhang[^], Chao Liu, Xiaoxiao Xu, Qibin Li[^], Shukun Wang, Xi Chen*, Effects of superheat and internal heat exchanger on thermo-economic performance of organic Rankine cycle based on fluid type and heat sources. *Energy*, 2018, 159: 482-495.
6. Yafei Zhang[^], Rui Luo[^], Qulan Zhou[^], Xi Chen*, Yihua Dou, Effect of Degassing on the Stability and Reversibility of Glycerol/ZSM-5 Zeolite System. *Applied Sciences*, 2018, 8: 1065.

7. Juzheng Song[^], Jie Liu[^], Wei Zhao[^], Yan Chen[^], Hang Xiao[^], Xiaoyang Shi[^], Yilun Liu[^], and Xi Chen*, Quaternized Chitosan/PVA Aerogels for Reversible CO₂ Capture from Ambient Air. *Industrial and Engineering Chemistry Research*, 2018, 57: 4941-4948.
8. Guoyu Qian, Bin Zhu, Xiangbiao Liao[^], Haowei Zhai, Avind Srinivasan, Nathan Fritz, Qian Cheng, Mingqiang Ning, Boyu Qie, Yi Li, Songliu Yuan, Jia Zhu, Xi Chen, Yuan Yang, Bioinspired, Spine-Like, Flexible, Rechargeable Lithium-Ion Batteries with High Energy Density. *Advanced Materials*, 2018, 30: 1704947.
9. Huanxuan Li[^], Yayun Zhang[^], Jinquan Wan, Hang Xiao[^] and Xi Chen*, Theoretical investigation on the oxidation mechanism of dibutyl phthalate by hydroxyl and sulfate radicals in the gas and aqueous phase. *Chemical Engineering Journal*, 2018, 339: 381-392.
10. Chen Zhang[^], Fei Dang[^], Youlong Chen[^], Yuan Yan[^], Yilun Liu[^], and Xi Chen*, Vibration-to-electric energy conversion with porous graphene oxide-nickel electrode. *Journal of Power Sources*, 2017, 368: 73-77.
11. Meng Wang, Liangliang Zhu[^], Anh V. Le, Daniel J. Noelle, Yang Shi, Ying Zhong, Feng Hao[^], Xi Chen, Yu Qiao, A Multifunctional Battery Module Design for Electric Vehicle. *Journal of Modern Transportation*, 2017, 25: 218-222.
12. Hang Xiao[^], Xiaoyang Shi[^], Yayun Zhang[^], Xiangbiao Liao[^], Feng Hao[^], Klaus S. Lackner and Xi Chen*, The catalytic effect of H₂O on the hydrolysis of CO₃²⁻ in hydrated clusters and its implication in the humidity driven CO₂ air capture. *Physical Chemistry Chemical Physics*, 2017, 19: 27435-27441.
13. Hang Xiao[^], Xiaoyang Shi[^], Feng Hao[^], Xiangbiao Liao[^], Yayun Zhang[^] and Xi Chen*, Self-assembled nanocapsules in water: a molecular mechanistic study. *Physical Chemistry Chemical Physics*, 2017, 19: 20377-20382.
14. Hang Xiao[^], Xiaoyang Shi[^], and Xi Chen*, Development of a Transferable Reactive Force Field of P/H Systems: Application to the Chemical and Mechanical Properties of Phosphorene. *Journal of Physical Chemistry A*, 2017, 121: 6135-6149.
15. Feng Hao[^], Xiao Lu[^], Yu Qiao and Xi Chen*, Crashworthiness Analysis of Electric Vehicle with Energy-absorbing Battery. *Journal of Engineering Materials Technology*, 2017, 139: 021022.
16. Yayun Zhang[^], Chao Liu, Feng Hao[^], Hang Xiao[^], Shiwei Zhang[^] and Xi Chen*, CO₂ adsorption and separation from natural gas on phosphorene surface: Combining DFT and GCMC calculations. *Applied Surface Science*, 2017, 397: 206-212.
17. Mingjia Li[^], Wei Zhao, Wenquan Tao, Xi Chen*, Economic analysis of a new class of vanadium redox-flow battery for medium- and large-scale energy storage in commercial applications with renewable energy. *Applied Thermal Engineering*, 2017, 114: 802-814.
18. Shiwei Zhang[^], Feng Hao[^], Haimu Chen, Wei Yuan, Yong Tang, Xi Chen*, Molecular dynamics simulation on explosive boiling of liquid argon film on copper nanochannels. *Applied Thermal Engineering*, 2017, 113: 208-214.
19. Xiaoyang Shi[^], Hang Xiao[^], Xi Chen*, Klaus S. Lackner, The Effect of Moisture on the Hydrolysis of Basic Salts. *Chemistry- A European Journal*, 2016, 22: 18326-18330.
20. Xiaoyang Shi[^], Hang Xiao[^], Klaus S. Lackner, Xi Chen*, Capture CO₂ from Ambient Air Using Nanoconfined Ion Hydration. *Angewandte Chemie*, 2016, 55: 4026-4029. Featured as headline news in [Columbia Engineering](#), and also in [Science Daily](#), and [Physics](#).
21. Yayun Zhang[^], Feng Hao[^], Hang Xiao[^], Chao Liu, Xiaoyang Shi[^] and Xi Chen*, Hydrogen separation by porous phosphorene: A periodical DFT study. *International Journal of Hydrogen Energy*, 2016, 41: 23067-23074.

22. Huanxuan Li[^], Jinquan Wan, Yongwen Ma, Yan Wang, Xi Chen, Zeyu Guan, Degradation of refractory dibutyl phthalate by peroxymonosulfate activated with novel catalysts cobalt metal-organic frameworks: Mechanism, performance, and stability, *Journal of hazardous materials*, 2016, 318: 154-163.
23. J. Luo, C. Y. Dai, Z. Wang, K. Liu, Weiguo Mao[^], Daining Fang and Xi Chen, In-situ measurements of mechanical and volume change of LiCoO₂ lithium-ion batteries during repeated charge–discharge cycling by using digital image correlation. *Measurement*, 2016, 94: 759-770.
24. Li Yuan[^], Wei Zhi, Yangsheng Liu, Elizabeth Smiley, Daniel Gallagher, Xi Chen, Andrea Dietrich, Husen Zhang, Degradation of cis- and trans-(4-methylcyclohexyl)methanol in activated sludge: kinetics, transformation, and implications for in-situ bioremediation. *Journal of Hazardous Materials*, 2016, 306: 247-256.
25. Li Yuan[^], Wei Zhi, Yangsheng Liu, Elizabeth Smiley, Daniel Gallagher, Xi Chen, Andrea Dietrich, Husen Zhang, Aerobic and anaerobic microbial degradation of crude (4-methylcyclohexyl)methanol in river sediments. *Science of the Total Environment*, 2016, 547: 78-86.
26. Rui Luo[^], Na Li[^], Yafei Zhang[^], Duanyang Wang, Taisheng Liu, Qulan Zhou[^] and Xi Chen, Effect of the adjustable inner secondary air-flaring angle of swirl burner on coal-opposed combustion. *ASCE Journal of Energy Engineering*, 2016, 142: 04015018.
27. Yayun Zhang[^], Chao Liu and Xi Chen*, Mechanism of glucose conversion in supercritical water by DFT study. *Journal of analytical and applied pyrolysis*, 2016, 119: 199-207.
28. Shouichi Iio, Akio Yonezu, Hiroshi Yamamura and Xi Chen*, Deformation modeling of polyvinylidenedifluoride (PVDF) hollow fiber membrane for water filtration. *Journal of Membrane Science*, 2016, 497: 421-429.
29. Feng Hao[^] and Xi Chen*, First-principles study of lithium adsorption and diffusion on graphene: The effects of strain. *Materials Research Express*, 2015, 2: 105016.
30. Yafei Zhang[^], Na Li[^], Rui Luo[^], Yifeng Zhang, Qulan Zhou[^], Xi Chen, Experimental study on thermal effect on infiltration mechanisms of glycerol into ZSM-5 zeolite under cyclic loadings. *Journal of Physics D: Applied Physics*, 2015, 49: 025303.
31. Yayun Zhang[^], Chao Liu and Xi Chen*, Unveiling the initial pyrolytic mechanisms of cellulose by DFT study. *Journal of analytical and applied pyrolysis*, 2015, 113: 612-629.
32. Yafei Zhang[^], Na Li[^], Duanyang Wang, Qulan Zhou[^], Xi Chen, Numerical Study of Gas-Liquid Flow in Dual-Contact-Flow Absorber with One-Dimensional Two-Way Coupled Model. *Canadian Journal of Chemical Engineering*, 2015, 93: 1556-1566.
33. Feng Hao[^], Daining Fang and Xi Chen*, The Coupling of Strain and Lithium Diffusion: A Theoretical Model Based on First-Principles Calculations. *Journal of the Electrochemical Society*, 2015, 162: A2266-A2270.
34. Wei Zhi, Li Yuan[^], Guodong Ji, Yangsheng Liu, Zhang Cai, Xi Chen*, A bibliometric review on carbon cycling research during 1993-2013. *Environmental Earth Sciences*, 2015, 74: 6065-6075.
35. Li Yuan[^], Wei Zhi, Qinglong Xie, Xi Chen*, Yangsheng Liu, Lead removal from solution by a porous ceramisite made from bentonite, metallic iron, and activated carbon. *Environ. Sci.: Water Res. Technol.*, 2015, 1: 814-822
36. Jun Liu[^], Peng Li, Hang Xiao[^], Yayun Zhang[^], Xiaoyang Shi[^], Xiaomeng Lu, Xi Chen*, Understanding flocculation mechanism of graphene oxide for organic dyes from water: Experimental and molecular dynamics simulation. *AIP Advances*, 2015, 5: 17151.

37. Jialv Zhou, Xiaobing Deng, Yuan Yan[^], Yilun Liu[^], Xi Chen*, Superelasticity and reversible energy absorption of polyurethane cellular structures with sand filler. *Composite Structures*, 2015, 131: 966-974.
38. Li Yuan[^], Wei Zhi, Yangsheng Liu, Saikumar Karyala, Peter Vikesland, Xi Chen*, and Husen Zhang, Lead toxicity to the performance, viability, and community composition of activated sludge microorganisms. *Environmental Science & Technology*, 2015, 49: 824-830.
39. Bo Sun[^], Qulan Zhou[^], Xi Chen, Reply of the comments on "Dynamic modeling and simulation of Shell gasifier in IGCC". *Fuel Processing Technology*, 2015, 138: 825.
40. Bing Zhang, Chen Dong[^], Qulan Zhou[^], Xi Chen, Patricia J. Culligan, Qinxin Zhao, Tongmo Xu and Shien Hui, Experimental Study on Laminar Flame Speed of Natural Gas/Carbon Monoxide/Air Mixtures, *Energy Sources Part A - Recovery Utilization and Environmental Effects*, 2015, 37: 576-582.
41. Akio Yonezu and Xi Chen*, Tensile deformation of polytetrafluoroethylene (PTFE) hollow fiber membrane used for water purification. *Water Science and Technology*, 2014, 70: 1244-1250.
42. Baoxing Xu[^], Xi Chen*, Weiyi Lu and Yu Qiao, Non-dissipative Energy Capture of Confined Liquid in Nanopores. *Applied Physics Letters*, 2014, 104: 203107.
43. Xi Chen*, Baoxing Xu[^] and Ling Liu[^], Nanoscale Fluid Mechanics and Energy Conversion. *Applied Mechanics Review*, invited review paper, 2014, 66: 050803.
44. Xi Chen*, Baoxing Xu[^] and Ling Liu[^], Closure: "Nanoscale Fluid Mechanics and Energy Conversion," (Xi Chen, Baoxing Xu, and Ling Liu, 2014, Appl. Mech. Rev.). *Applied Mechanics Review*, 2014, 66: 056001.
45. Jianfeng Ju[^], Xi Chen, Yijun Shi and Donghui Wu, Novel spherical TiO₂ supported PdNi alloy catalyst for methanol electrooxidation, *Journal of Industrial and Engineering Chemistry*, 2014, 20: 1223-1226.
46. Baoxing Xu[^], Yu Qiao and Xi Chen*, Mitigating impact/blast energy via a novel nanofluidic energy capture mechanism. *Journal of the Mechanics and Physics of Solids*, invited paper for 60th anniversary special issue, 2014, 62: 194-208.
47. Qibin Li[^], Chao Liu and Xi Chen*, Molecular Characteristics of Dissociated Water with Memory Effect from Methane Hydrates, *International Journal of Modern Physics B*, 2014, 28: 1450062.
48. Qibin Li[^], Chao Liu and Xi Chen*, Molecular dynamics simulation of sulfur nucleation in S-H₂S System, *Molecular Physics*, 2014, 112: 947-955.
49. Chen Dong[^], Qulan Zhou, Xi Chen, Patricia J. Culligan, Qinxin Zhao, Tongmo Xu and Shien, On the Laminar Flame Speed of Hydrogen, Carbon Monoxide, and Natural Gas Mixtures with Air: Insights for a Dual-fuel Polygeneration System, *Energy Sources Part A - Recovery Utilization and Environmental Effects*, 2014, 36: 393-401.
50. Yueting Sun, Jun Xu[^], Yibing Li, Xiaoqing Xu, Cheng Liu and Xi Chen, Mechanism of Water Infiltration and Defiltration Through ZSM-5 Zeolite: Heating and Sodium Chloride Concentration Effect. *Journal of Nanomaterials*, 2013, 2013: 249369.
51. Baoxing Xu[^] and Xi Chen*, Electrical-driven Transport of Endohedral Fullerene Encapsulating a Single Water Molecule. *Physical Review Letters*, 2013, 110: 156103. *Editor's suggestion; also highlighted on APS website.*
52. Joel Goldman[^], Chun-Yang Yin[^] and Xi Chen*, Increased concrete permeability via controlled hydraulic fatigue technique. *Journal of Multifunctional Composites*, in press.

53. Jianfeng Ju[^], Xi Chen, Yijun Shi and Donghui Wu, A novel TiO₂ nanofiber supported PdAg catalyst for methanol electro-oxidation, *Energy*, 2013, 59: 478-483.
54. Jianfeng Ju[^], Xi Chen, Yijun Shi and Donghui Wu, A novel PdAg/TiO₂ nanotube electrocatalyst for methanol electro-oxidation, *Fuel*, 2013, 108: 850-854.
55. Jianfeng Ju[^], Xi Chen, Yijun Shi, Miao Jianwen and Donghui Wu, Hydrothermal preparation and photocatalytic performance of N, S-doped nanometer TiO₂ under sunshine irradiation, *Powder Technology*, 2013, 237: 616-622.
56. Jianfeng Ju[^], Xi Chen, Yijun Shi, and Donghui Wu, Investigation of PdSn nanometals alloy supported on spherical TiO₂ for methanol electro-oxidation, *Powder Technology*, 2013, 241: 1-6.
57. Ling Liu[^] and Xi Chen, Fast Ionic Transport in Nanoporous Y-Zeolite: Implications for Phase Separation, *ChemPhysChem*, cover article, 2013, 14: 2413-2418.
58. Yueting Sun, Jun Xu[^], Yibing Li, Bohan Liu, Yan Wang, Cheng Liu, Xi Chen*, Experimental Study on Energy Dissipation Characteristics of ZSM-5 Zeolite/Water System, *Advanced Engineering Materials*, 2013, 15: 740-746.
59. Jun Xu[^], Yibing Li, Yong Xiang, Xi Chen*, A Super Energy Mitigation Nanostructure at High Impact Speed Based on Buckyball System. *PLOS One*, 2013, 8: e64697.
60. Yilun Liu[^] and Xi Chen*, High permeability and salt rejection reverse osmosis by zeolite nano-membrane, *Physical Chemistry Chemical Physics*, 2013, 15: 6817 - 6824.
61. S. Kadir, Chunyang Yin[^], M. Sulaiman, Xi Chen, M. El-Harbawi, Incineration of municipal solid waste in Malaysia: Salient issues, policies and waste-to-energy initiatives. *Renewable & Sustainable Energy Reviews*, 2013, 24: 181-186.
62. Jun Xu[^], Yibing Li, Yong Xiang, Xi Chen*, Energy Absorption Ability of Buckyball C₇₂₀ at Low Impact Speed: A Numerical Study based on Molecular Dynamics. *Nanoscale Research Letters*, 2013, 8: 1-10.
63. Ling Liu[^], Yu Qiao, Hyuck Lim, Weiyi Lu, and Xi Chen, Mechanical-to-Electric Energy Conversion with Flowing Nanoconfined Electrolytes, *Applied Physics Express*, 2013, 6: 015202.
64. Baoxing Xu[^] and Xi Chen*, Liquid Flow-Induced Energy Harvesting in Nanopores: A Molecular Dynamics Study. *Physical Chemistry Chemical Physics*, 2013, 15: 1164-1168.
65. Hyuck Lim, Weiyi Lu, Xi Chen and Yu Qiao, Effects of ion concentration on thermally-chargeable double-layer supercapacitors. *Nanotechnology*, 2013, 24: 465401.
66. Weiyi Lu, T. Kim, C. Zhao, Xi Chen and Yu Qiao, Modified Infiltration of Solvated Ions and Ionic Liquid in a Nanoporous Carbon. *Applied Physics A*, 2013, 112: 885-889.
67. Qingwei Fan[^], Shien Hui, Shuai Zhao, Qulan Zhou[^], Xi Chen, Qinxin Zhao, Thermal stress and strain distributions of a laboratory scale wall fired furnace: A numerical study and experimental verification. *Engineering Failure Analysis*, 2012, 25: 227-237.
68. Jun Xu[^], Baoxing Xu[^], Yueting Sun, Yibing Li and Xi Chen*, Mechanical Energy Absorption Characteristics of Hollow and Water-Filled Carbon Nanotubes upon Low Speed Crushing, *Journal of Nanomechanics and Micromechanics*, 2012, 2: 65-70.
69. Na Li[^], Yafei Zhang, Dejuan Kong, Qulan Zhou[^], Xi Chen*, and Shien Hui, Fluid Particle Group Reaction Model and Experimental Verification, *Advanced Powder Technology*, 2013, 24: 200-206.
70. Baoxing Xu[^], Ling Liu[^], Hyuck Lim, Yu Qiao and Xi Chen*, Harvesting Energy from Low-grade Heat Based on Nanofluids, *Nano Energy*, Rapid Communication, 2012: 1: 805-811.

71. Hyuck Lim, Weiyi Lu, Xi Chen and Yu Qiao, Anion Size Effect on Electrode Potential in a Nanoporous Carbon. *International Journal of Electrochemical Science*, 2012, 7: 2577-2583.
72. Baoxing Xu[^], Binglei Wang[^], Taehyo Park, Yu Qiao and Xi Chen*, Temperature Dependence of Fluid Transport in Nanopores. *Journal of Chemical Physics*, 2012, 136: 184701.
73. Baoxing Xu[^], Yibing Li, Taehyo Park and Xi Chen*, Effect of wall roughness on fluid transport resistance in nanopores. *Journal of Chemical Physics*, 2011, 135: 144703. Selected for the October 15, 2011 issue of Virtual Journal of Biological Physics Research.
74. Yoshiyuki Iso[^] and Xi Chen, Flow Transition Behavior of the Wetting Flow between the Film Flow and Rivulet Flow on an Inclined Wall. *ASME Journal of Fluids Engineering*, 2011, 133: 091101.
75. Baoxing Xu[^], Yu Qiao, Moonho Tak, Taehyo Park, Qulan Zhou[^] and Xi Chen*, A Conceptual Thermal Actuation System Driven by Interface Tension of Nanofluids. *Energy and Environmental Science*, 2011, 4: 3632-3639. Selected by Renewable Energy Global Innovations Series, which alerts the scientific community to breaking journal articles considered to be of importance to the progress in renewable energy technologies.
76. Weiyi Lu, Taewan Kim, Aijie Han, Xi Chen and Yu Qiao, Effects of Electric Field on Confined Electrolyte in a Hexagonal Mesoporous Silica. *Journal of Chemical Physics*, 2011, 134: 204706.
77. Baoxing Xu[^], Yu Qiao, Qulan Zhou[^] and Xi Chen*, Effect of Electric Field on Water Infiltration into Hydrophobic Nanopores. *Langmuir*, 2011, 27: 6349-6357.
78. Baoxing Xu[^], Yu Qiao, Yibing Li, Qulan Zhou[^] and Xi Chen*, An Electroactuation System based on Nanofluids. *Applied Physics Letters*, 2011, 98: 221909.
79. Bo Sun[^], Yongwen Liu, Xi Chen*, Qulan Zhou, Ming Su, Dynamic Modeling and Simulation of Shell Gasifier in IGCC. *Fuel Processing Technology*, 2011, 92: 1418-1425.
80. Jun Xu[^], Yibing Li, Xi Chen*, Dongyun Ge, Bohan Liu, Mengyi Zhu and Taehyo Park, Automotive Windshield - Pedestrian Head Impact: Energy Absorption Capability of Interlayer Material. *International Journal of Automotive Technology*, 2011, 12: 687-695.
81. Chen Dong[^], Qulan Zhou[^], Xi Chen*, Patricia J. Culligan, Qinxin Zhao, Tongmo Xu, Shien Hui, Experimental study on laminar flame speed of natural gas/carbon monoxide/air mixtures. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, in press.
82. Baoxing Xu[^], Ling Liu[^], Qulan Zhou[^], Yu Qiao, Jun Xu[^], Yibing Li, Moonho Tak, Taehyo Park and Xi Chen*, Energy dissipation of nanoporous MFI zeolite under compressive loading. *Journal of Computational and Theoretical Nanoscience*, invited paper, 2011, 8: 881-886.
83. Baoxing Xu[^] and Xi Chen*, Microfluidic Channels formed by Collapse of Soft Stamp. *Journal of Nanomechanics and Micromechanics*, 2011, 1: 3-10. This paper is one of top 5 downloads of the journal in 2011.
84. Qingwei Fan[^], Shien Hui, Qulan Zhou[^], Xi Chen*, Qinxin Zhao, Tongmo Xu, Experimental study on the heat flux distribution of a laboratory scale wall fired furnace. *Energy & Fuel*, 2010, 24: 5369-5377.
85. Jianbing Zhao[^], Patricia J. Culligan, Yu Qiao, Qulan Zhou, Yibing Li, Moonho Tak, Taehyo Park, and Xi Chen*, Electrolyte solution transport in electropolar nanotube. *Journal of Physics: Condensed Matter*, 2010, 22: 315301.

86. Bo Sun[^], Qulan Zhou[^], Xi Chen*, Tongmo Xu, Shien Hui, Effect of Particle Size in a Limestone-Hydrochloric Acid Reaction System. *Journal of Hazardous Materials*, 2010, 179: 400-408.
87. Ling Liu[^], Xi Chen*, Aijie Han, and Yu Qiao, Effects of Anion Size and Concentration on Electrolyte Infiltration into Molecular-sized Nanopores. *New Journal of Physics*, 2010, 12: 033021.
88. Na Li[^], Qulan Zhou[^], Dejuan Kong, Xi Chen*, Tongmo Xu and Shien Hui, Mass transfer characteristics in double-contact-flow absorber with liquid column/screen flow type: Modeling and experiment, *Chemical Engineering Science*, 2010, 65: 2619-2628.
89. Ling Liu[^] and Xi Chen*, Effect of Surface Roughness on Thermal Conductivity of Silicon Nanowires. *Journal of Applied Physics*, 2010, 107: 033501.
90. Jianbing Zhao[^], Yu Qiao, Patricia J. Culligan and Xi Chen*, Confined Liquid Flow in Nanotube: A Numerical Study and Implications for Energy Absorption, *Journal of Computational and Theoretical Nanoscience*, invited paper, cover article, 2010, 7: 379-387.
91. Jianbing Zhao[^], Ling Liu[^], Patricia J. Culligan and Xi Chen*, Thermal Effect on the Dynamic Infiltration of Water into Single-walled Carbon Nanotubes. *Physical Review E*, 2009, 80: 061206. This paper is also included in the *Virtual Journal of Nanoscale Science & Technology*, January 2010 (Volume 21).
92. Qulan Zhou[^], Na Li[^], Xi Chen, Tongmo Xu and Shien Hui, Flow Field of Water Drops in Blade Channel: Numerical Analysis of Water Drop Erosion on Turbine Blades, *International Journal of Turbo and Jet Engines*, 2009, 26: 201-222.
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