

Tao Wang

Position/Department/Division/Institution/Organization

Professor/College of Energy Engineering/Zhejiang University

Country

China

Career history

<i>Professor</i>	Zhejiang University, China	01/2018 – present
<i>Associate Professor</i>	Zhejiang University, China	01/2013 – 12/2017
<i>Assistant Professor</i>	Zhejiang University, China	07/2012 - 12/2012
<i>Postdoctoral Research Scientist</i>	Columbia University, U. S.	07/2009 - 07/2012
<i>Postdoctoral Fellow</i>	State Key Laboratory of Clean Energy Utilization, China	07/2008-06/2009

Awards/Publications

'Qiushi' Young Scholar, Zhejiang University	2013
Outstanding Ph.D. thesis award, Zhejiang University	2008

- 1) *Tao Wang, Chenglong Hou, Kun Ge, Klaus S. Lackner, Xiaoyang Shi, Jun Liu, Mengxiang Fang, and Zhongyang Luo, Spontaneous Cooling Absorption of CO₂ by a Polymeric Ionic Liquid for Direct Air Capture, *Journal of Physical Chemistry Letters*, 2017, 8, 17, 3986-3990, SCI, 9.35, ,
- 2) T. Wang, K. S. Lackner, and A. Wright, Moisture-swing sorption for carbon dioxide capture from ambient air: a thermodynamic analysis, *Physical Chemistry Chemical Physics*, 2013, 15, 2, 504-514, SCI, 4.123, 15,
- 3) Tao Wang, Fei Liu, Kun Ge, Mengxiang Fang, Reaction kinetics of carbon dioxide absorption in aqueous solutions of piperazine, N-(2-aminoethyl) ethanolamine and their blends, *CHEMICAL ENGINEERING JOURNAL*, 2017-04, 314, , 123-131, SCI, 6.216, ,
- 4) Tao Wang, Jun Liu, Hao Huang, Mengxiang Fang, Zhongyang Luo, Preparation and kinetics of a heterogeneous sorbent for CO₂ capture from the atmosphere, *CHEMICAL ENGINEERING JOURNAL*, 2016-01, 284, , 679-686, SCI, 6.216, 3,
- 5) Tao Wang, Hao Huang, Xutao Hu, Mengxiang Fang, Zhongyang Luo, Ruonan Guo, Accelerated mineral carbonation curing of cement paste for CO₂ sequestration and enhanced properties of blended calcium silicate, *CHEMICAL ENGINEERING JOURNAL*, 2017-09, 323, ,

320-329, SCI, 6.216, ,

6) Tao Wang, Kun Ge, Kexian Chen, Chenglong Hou and Mengxiang Fang, Theoretical studies on CO₂ capture behavior of quaternary ammonium-based polymeric ionic liquids, PHYSICAL CHEMISTRY CHEMICAL PHYSICS, 2016-05, 18, 18, 13084-13091, SCI, 4.123, 3,

7) Tao Wang, Hui He, Wei Yu, Zohaib Sharif, and Mengxiang Fang, Process Simulations of CO₂ Desorption in the Interaction between the Novel Direct Steam Stripping Process and Solvents, ENERGY & FUELS, 2017-04, 31, 4, 4255-4262, SCI, 3.09, ,

8) Tao Wang, Wei Yu, Fei Liu, Mengxiang Fang, Muhammad Farooq, and Zhongyang Luo, Enhanced CO₂ Absorption and Desorption by Monoethanolamine (MEA)-Based Nanoparticle Suspensions, INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, 2016-07, 55, 28, 7830-7838, SCI, 2.843, 3,

9) M. X Fang, Q. Y Xiang, *T. Wang, Yann Le Moullec, Jiahui Lu, Wenmin Jiang, Xuping Zhou, Jinbai Zhang, and Guofei Chen, Experimental study on the novel direct steam stripping process for postcombustion CO₂ capture, Industrial and Engineering Chemistry Research, 2014, 53, 46, 18054-18062, SCI, 2.843, 1,

10) He, Feijie; *Wang, Tao; Fang, Mengxiang; Wang, Zhen; Yu, Hai; Ma, Qinhui, Screening Test of Amino Acid Salts for CO₂ Absorption at Flue Gas Temperature in a Membrane Contactor, ENERGY & FUELS, 2017-01, 31, 1, 770-777, SCI, 3.09, ,

11) Qinhui Ma, Mengxiang Fang, *Tao Wang, Hai Yu, and Paul H. M. Feron, Membrane evaporation for energy saving in CO₂ chemical absorption process using a polybenzimidazole film: mass and heat transfer, energy & fuels, 2017, 31, 10, 11091-11098 3.09, ,

12) Tao Wang, Kun Ge, Yusong Wu, Kexian Chen, Mengxiang FANG, and Zhongyang Luo, Designing moisture-swing CO₂ sorbents through anion screening of polymeric ionic liquids, energy & fuels, 2017, 31, 10, 11127-11133, 3.09, ,

13) Tao Wang, Wei Yu, Mengxiang Fang, Hui He, Qunyang Xiang, Qinhui Ma, Menglin Xia, Zhongyang Luo and Kefa Cen, Wetted-wall column study on CO₂ absorption kinetics enhancement by additive of nanoparticles, GREENHOUSE GASES-SCIENCE AND TECHNOLOGY, 2015-10, 5, 5, 682-694, SCI, 1.676, ,

14) Tao Wang, Jun Liu, Klaus.S Lackner, Xiaoyang Shi, Mengxiang Fang, Zhongyang Luo, Characterization of kinetic limitations to atmospheric CO₂ capture by solid sorbent, GREENHOUSE GASES-SCIENCE AND TECHNOLOGY, 2016-02, 6, 1, 138-149, SCI, 1.676, 1,

15) Goldberg D S, Lackner K S, Han P, Slagle A L, Wang T, Co-location of air capture, subseafloor CO₂ sequestration, and energy production on the Kerguelen plateau, Environmental Science & Technology, 2013, 47, 13, 7521-7529, SCI, 6.198, 11,

16) Xiaoyang Shi, Qibin Li,*Tao Wang and Klaus S. Lackner, Kinetic analysis of an anion

- exchange absorbent for CO₂ capture from ambient air, Plos One, 2017, 12, 6, -, SCI, 2.8, ,
- 17) Hao Chen, *Tao Wang, Zhongyang Luo, Dong Zhou, Mengshi Lu, Mingchun He, Mengxiang Fang, Kefa Cen, Agglomeration kernel of bipolar charged particles in the presence of external acoustic and electric fields, AEROSOL AND AIR QUALITY RESEARCH, 2017-04, 17, 4, 857-866, SCI, 2.606, ,
- 18) Zhongyang Luo, Hao Chen, *Tao Wang, Dong Zhou, Mengshi Lu, Mingchun He, Mengxiang Fang, Kefa Cen, Agglomeration and capture of fine particles in the coupling effect of pulsed corona discharge and acoustic wave enhanced by spray droplets, POWDER TECHNOLOGY, 2017-05, 312, , 21-28, SCI, 2.942, ,
- 19) Chen Chen, Zhongyang Luo, Chunjiang Yu, *Tao Wang and Hengli Zhang, Transformation behavior of potassium during pyrolysis of biomass, RSC Advances, 2017, 7, 50, 31319-31326, SCI, 3.108, ,
- 20) Zhen Wang, Mengxiang Fang, Qinhui Ma, Zhun Zhao, Tao Wang, Zhongyang Luo, Membrane stripping technology for CO₂ desorption from CO₂-rich absorbents with low energy consumption, Energy Procedia, 2014, 63, , 765-772, EI, , ,
- 21) Tao Wang, Jie Huang, Xin He, Jiayang Wu, Mengxiang Fang, Jun Cheng, CO₂ fertilization system integrated with a low-cost direct air capture technology, Energy Procedia, 2014, 63, , 6842-6851, EI, , ,
- 22) Liu, Jun; Huang, Jie; Fang, Mengxiang; *Wang, Tao; Luo, Zhongyang, Sustainable food and fuel on Yongxing island by conversing the carbon captured from ambient air, Energy Procedia, 2015, 75, , 2227-2232, EI, , ,
- 23) Kerry E. Kelly, Zhongyang Luo, Tao Wang, Eric G. Eddings, Joint NSF-NSFC Workshop on Combustion Related to Sustainable Energy, COMBUSTION SCIENCE AND TECHNOLOGY, 2016, 188, 2, 247-249, EI, 1.241, ,
- 24) Wu, Yueqiong; Luo, Zhongyang; Yin, Hong; *Wang, Tao, RHEOLOGICAL CHARACTERISTICS OF VISCOELASTIC SURFACTANT FLUID MIXED WITH SILICA NANOPARTICLES, PROCEEDINGS OF THE ASME 4TH INTERNATIONAL CONFERENCE ON MICRO/NANOSCALE HEAT AND MASS TRANSFER - 2013, 2014, , , V001T02A006-, EI, 0, ,
- 25) Wang, Tao; Ge, Kun; Liu, Jun; Fang, Meng Xiang, A thermodynamic analysis of the fuel synthesis system with CO₂ direct captured from atmosphere, Advanced Materials Research, 2014, 960-961, , 308-315, E

Areas of expertise

Prof. Tao Wang is active in the research area of CCUS, including the areas of direct CO₂ capture from air and accelerated CO₂ mineralization. He is serving as the site director to the Air Capture Technology Consortium. He has been involved in international collaborations including China-Australia JCG funding, EU “CO₂ Trip” project and US-China NSF project. He was invited to attend the CCUS experts’ workshop of the Mission Innovation Carbon Capture Challenge in 2017. He co-chaired the CO₂ utilization roundtable at 2018 which was organized by Columbia University. He is now a full Professor at Zhejiang University (China).