Feiping Zhao

Email: feiping.zhao@lut.fi **Tel:** +358 50 577 8804 **Homepage:** (link)
Current position: Post-doctoral researcher, Lappeenranta University of Technology, Finland

Education and Academic Career

since 1/2018	**Postdoctoral Researcher, Lappeenranta University of Technology, Finland** Laboratory of Green Chemistry Supervisor: Prof. Mika Sillanpää (link) *Integrated wastewater treatment plants in a circular economy: Water, energy and nutrient recovery*
2013-2017	**Dr.Sc. study & Junior Researcher, Lappeenranta University of Technology, Finland** Laboratory of Green Chemistry Supervisor: Prof. Mika Sillanpää Doctoral dissertation approved '***with distinction***' (highest grade, top 10%). *Cross-linked chitosan and β-cyclodextrin as functional adsorbents in water treatment*
6/2015-10/2015	**Visiting Scholar, University of Waterloo, Canada** Department of Chemical Engineering, Waterloo Institute for Nanotechnology Supervisor: Prof. Michael K.C. Tam (link) *Functional sustainable cellulose nanocrystals for the recovery of rare earth element*
2010-2011	**Erasmus exchange of M.Sc., University of Eastern Finland, Finland** Department of Environmental and Biological Sciences
2009-2012	**M.Sc. study in Organic Chemistry, Hunan Normal University, China** College of Chemistry and Chemical Engineering Supervisor: Prof. Dulin Yin *Microemulsion polymerization preparation of polyacrylamide for water treatment*
2005-2009	**B.Eng. study in Applied Chemistry, Hunan Normal University, China** College of Chemistry and Chemical Engineering Graduated with *Excellent*, Supervisor: Prof. Dulin Yin *Preparation of polyacrylamide coagulant via mini-emulsion polymerization for the removal of phosphorus from pesticide wastewater*

Selected awards

2017	Dr.Sc. (Tech.) dissertation '*With Distinction*' in Finland (top 10%), 4000 €
2015	The 2015 *National Award for Outstanding Chinese Students Study Abroad* (500 awarded worldwide, 4 awarded in Finland), 6000 $
2014	Research Foundation LUT for research visit to University of Waterloo, Canada, 4300 €
2010-2011	Erasmus Mundus ECW scholarship, Europe Union, 10 000 €

Research interest

1. My current research area is the preparation of novel MOF, perovskite, C_3N_4 hybrid materials as visible-light-driven photocatalysts for environmental and energy applications, and perovskite-base catalysts for AOP.
2. More recently, I am working on the integrated wastewater treatment in circular economy for simultaneous recovery of water, resource and energy. The technologies include microbial fuel cell (MFC), membrane bioreactor (MBR), capacitive deionization (CDI), electrodialysis (ED), and electro advanced oxidation process.
3. The major objective of my PhD, defended at the end of 2017, was to find green approaches to immobilize complexing groups on chitosan and cellulose nanocrystals for the removal of metals and recovery of rare earth elements, and to prepare bi-functional beta-cyclodextrin materials for simultaneous removal of heavy metals and organic micropollutants.

Publications
***h*-Index:** 8 **Total citations:** 399 (Google Scholar)
S. Kalliola, E. Repo, V. Srivastava, **F. Zhao**, J. P. Heiskanen, J. A. Sirviö, H. Liimatainen, M. Sillanpää, Carboxymethyl chitosan and its hydrophobically modified derivative as pH-switchable emulsifiers, *Langmuir*, 2018, **34**, 2800-2806 (link)
F. Zhao, E. Repo, Y. Song, D. Yin, S. B. Hammouda, L. Chen, S. Kalliola, J. Tang, K. C. Tam, M. Sillanpää, Polyethylenimine-cross-linked cellulose nanocrystals for highly efficient recovery of rare earth elements from water and a mechanism study, *Green Chemistry*, 2017, **19**, 4816-4828 (link) Inside Front Cover
F. Zhao, E. Repo, D. Yin, L. Chen, S. Kalliola, J. Tang, E. Iakovleva, K. C. Tam, M. Sillanpää, One-pot synthesis of trifunctional chitosan-EDTA-β-cyclodextrin polymer for simultaneous removal of metals and organic micropollutants, *Scientific Reports*, 2017, **7**, 15811 (link)
S. B. Hammouda, **F. Zhao**, Z. Safaei, I. Babu, D. L. Ramasamy, M. Sillanpää, Reactivity of novel ceria–perovskite composites CeO_2-$LaMO_3$ (M=Cu, Fe) in the catalytic wet peroxidative oxidation of the new emergent pollutant 'Bisphenol F': characterization, kinetic and mechanism studies, *Applied Catalysis B: Environmental* 2017, **218**, 119-136 (link)
S. B. Hammouda, **F. Zhao**, Z. Safaei, V. Srivastava, D. L. Ramasamy, S. Iftekhar, M. Sillanpää, Degradation and mineralization of phenol in aqueous medium by heterogeneous monopersulfate activation on nanostructured cobalt based-perovskite catalysts $ACoO_3$ (A= La, Ba, Sr and Ce): Characterization, kinetics and mechanism study, *Applied Catalysis B: Environmental* 2017, **215**, 60-73 (link)
F. Zhao, E. Repo, Y. Meng, X. Wang, D. Yin, M. Sillanpää, An EDTA-β-cyclodextrin material for the adsorption of rare earth elements and its application in preconcentration of rare earth elements in seawater, *Journal of Colloid and Interface Science*, 2016, **465**, 215-224 (link)
G. Zou, D. Jing, W. Zhong, **F. Zhao**, L. Mao, Q. Xu, J. Xiao, D. Yin, A novel route for preparation of Mn-containing hollow framework TS-1, and its selective allylic oxidation of cyclohexene, *RSC Advances***,** 2016, **6**, 3729-3734 (link)
F. Zhao, E. Repo, D. Yin, Y. Meng, S. Jafari, M. Sillanpää, EDTA-cross-linked β-cyclodextrin: an environmentally friendly bifunctional adsorbent for simultaneous adsorption of metals and cationic dyes, *Environmental Science & Technology*, 2015, **49**, 10570-10580 (link, Citation 87)
F. Zhao, E. Repo, M. Sillanpää, Y. Meng, D. Yin, W. Z. Tang, Green synthesis of magnetic EDTA-and/or DTPA-cross-linked chitosan adsorbents for highly efficient removal of metals, *Industrial & Engineering Chemistry Research*, 2015, **54**, 1271-1281 (link)
M. Li†, **F. Zhao**†, M. Sillanpää, Y. Meng, D. Yin, Electrochemical degradation of 2-diethylamino-6-methyl-4-hydroxypyrimidine using three-dimensional electrodes reactor with ceramic particle electrodes, *Separation and Purification Technology*, 2015, **156**, 588-595 (link, † shared first authorship)
S. Jafari, **F. Zhao**, D. Zhao, M. Lahtinen, A. Bhatnagar, M. Sillanpää, A comparative study for the removal of methylene blue dye by N and S modified TiO_2 adsorbents, *Journal of Molecular Liquids*, 2015, **207**, 90-98 (link)
F. Zhao, W. Z. Tang, D. Zhao, Y. Meng, D. Yin, M. Sillanpää, Adsorption Kinetics, Isotherms and Mechanisms of Cd(II), Pb(II), Co(II) and Ni(II) by a Modified Magnetic Polyacrylamide Microcomposite Adsorbent, *Journal of Water Process Engineering*, 2014, **4**, 47-57 (link)
F. Zhao, E. Repo, D. Yin, M. Sillanpää, Adsorption of Cd(II) and Pb(II) by a novel EGTA-modified chitosan material: Kinetics and isotherms, *Journal of Colloid and Interface Science*, 2013, **409**, 174-182 (link, Citation 112)