YU Guanghui

Professional Title: Professor
Email: yuguanghui@tju.edu.cn
Tel:
Office Location:Rm 313, Building No.16

Biography

Guanghui Yu joined Tianjin University (TJU) in September, 2018 and is currently a professor in the Institute of Surface Earth System Science at TJU. He obtained his PhD degree in Environmental Engineering from Tongji University in 2009, and had been working as a visiting scholar in North Carolina State University (Mar., 2015 - Apr., 2016) and Oregon State University, USA (Oct., 2016 - Mar., 2017).Professor Yu's research mainly focuses on Nanogeochemistry and its environmental effects. Soil Carbon and Iron Cycles, Fungal Biomineralization, and Waste Management, and his specific research interests include: (1) Soil Nanominerals and Carbon Cycles; (2) Waste Management and Ecology Remediation. Professor Yu has published over 70 peer-reviewed English papers in international journals. .He is currently the Associate Editor of *Waste Management* and the Topic Editor of *Frontiers in Environmental Science*.

Education/Employment

2016.10~2017.03, Oregon State University, Visiting Scholar,.

2016.01~2018.08, Nanjing Agricultural University, Full Professor,.

2015.03~2016.04, North Carolina State University, Visiting Scholar,.

2011.01~2015.12, Nanjing Agricultural University, Associate Professor,.

2009.10~2010.12, Nanjing Agricultural University, Assistant Professor,.

2008.06~2008.10, National Taiwan University, Visiting Student,.

2006.03~2009.07, Tongji University, Ph.D.,.

2003.09~2006.03, Qingdao Tech University, M.S.,.

1999.09~2003.07, Jinan University, B.S.,.

Research

(1) Soil Nanominerals and Carbon Cycles;

(2) Waste Management and Ecology Remediation.

Research Projects

(1) 2017.01~2020.12, High value utilization technologies and intelligent equipment development for biogas residues, Role: PI, National Key Research and Development Program of China (No. 2017YFD0800803),.

(2) 2014.01~2017.12, Mechanism of the enhancement of SRO nanominerals with long-term organic fertilization in Red soil, Role: PI, National Natural Science Foundation of China (No. 41371248),.

(3) 2011.01~2015.12, Mechanism of soil organic matter sequestration, Role: Co-PI, The National Basic Research Program of China (973 Project) (No. 2011CB100503),.

(4) 2011.01~2013.12, Mechanism of speeding-up maturity during composting with an addition of microorganisms as studied by fluorescence labeling-CLSM observation, Role: PI, National Natural Science Foundation of China (No. 21007027),.

Selected Publications

(1) Fusheng Sun, Guanghui Yu*, Matthew L. Polizzotto, Wei Ran, Qirong Shen, 2019, Toward understanding the binding of Zn in soils by two-dimensional correlation spectroscopy and synchrotron-radiation-based spectromicroscopies, Geoderma, 337: 238–245,.

(2) Haiyan Du, Guanghui Yu*, Fusheng Sun, Muhammad Usman, Bernard A. Goodman, Wei Ran, Qirong Shen, 2019, Iron minerals inhibit the growth of Pseudomonas brassicacearum J12 via a free-radical mechanism: Implications for soil carbon storage, Biogeosciences, 16(7): 1433–1445,.

(3) Yongli Wen, Wenjuan Liu, Wenbo Deng, Xinhua He, Guanghui Yu*, 2019, Impact of agricultural fertilization practices on organo-mineral associations in four long-term field experiments: implications for soil C sequestration, Science of the Total Environment, 651: 591–600,.

(4) Jian Xiao, Yongli Wen, Sen Dou, Benjamin C. Bostick, Xinhua He, Wei Ran, Guanghui Yu*, Qirong Shen, 2019, A new strategy for assessing the binding microenvironments in intact soil microaggregates, Soil & Tillage Research, 189: 123–130,.

(5) Dongxing Guan, Fusheng Sun, Guanghui Yu*, Matthew L. Polizzotto, Yungen Liu, 2018, Total and available metal concentrations in soils from six long-term fertilization sites across China, Environmental Science and Pollution Research, 25(31): 31666–31678,.

(6) Xiao Jian, Yongli Wen, Guanghui Yu, Sen Dou*, 2018, Strategy for microscale characterization of soil mineral-organic associations by synchrotron-radiation-based FTIR technology, Soil Science Society of America Journal, 82(6): 1583–1591,.

(7) Xiaolei Huang, Haiyan Tang, Wenjing Kang, Guanghui Yu, Wei Ran*, Jianping Hong, Qirong Shen, 2018, Redox interface-associated organo-mineral interactions: A mechanism for C sequestration under a rice-wheat cropping system, Soil Biology and Biochemistry, 120: 12–23,.

(8) Dongxing Guan, Yaqing Li, Nanyang Yu, Guanghui Yu, Si Wei, Hao Zhang, William Davison, Xinyi Cui, Lena Q. Ma, Jun Luo*, 2018, In situ measurement of perfluoroalkyl substances in aquatic systems using diffusive gradients in thin-films technique, Water Research, 144: 162–171,.

(9) Yongli Wen, Jian Xiao, Feifei Liu, Bernard A. Goodman, Wei Li, Zhongjun Jia, Wei Ran, Ruifu Zhang, Qirong Shen, Guanghui Yu*, 2018, Contrasting effects of chemical and organic fertilisation regimes on shifts in the Fe redox bacterial community, Soil Biology and Biochemistry, 117: 56–67,.

(10) Ioannis Anastopoulos*, Alok Mittal*, Muhammad Usman*, Jyoti Mittal*, Guanghui Yu*, Avelino Núnez-Delgado*, Michael Kornaros*, 2018, A review on halloysite-based adsorbents to remove pollutants in water and wastewater, Journal of Molecular Liquids, 269: 855–868,.

(11) Fusheng Sun, Yaqing Li, Xiang Wang, Zhilai Chi, Guanghui Yu*, 2017, Using new hetero-spectral two-dimensional correlation analyses and synchrotron-radiation- based spectromicroscopy to characterize binding of Cu to soil dissolved organic matter, Environmental Pollution, 223: 457–465,.

(12) Guanghui Yu, Jian Xiao, Shuijin Hu, Matthew L. Polizzotto, Fangjie Zhao, Steve P. McGrath, Huan Li, Wei Ran, Qirong Shen*, 2017, Mineral availability as a key regulator of soil carbon storage, Environmental Science & Technology, 51(9): 4960–4969,.

(13) Xinping Yang, Qian Li, Zhu Tang, Wenwen Zhang, Guanghui Yu, Qirong Shen, Fangjie Zhao, 2017, Heavy metal concentrations and arsenic speciation in animal manure composts in China, Waste Management, 64: 333–339,.

(14) Fusheng Sun, Matthew L. Polizzotto, Dongxing Guan, Jun Wu, Qirong Shen, Wei Ran, Boren Wang, Guanghui Yu*, 2017, Exploring the interactions and binding sites between Cd and functional groups in soil DOM using two-dimensional correlation spectroscopy and synchrotron radiation based spectromicroscopies, Journal of Hazardous Materials, 326: 18–25,.

(15) Xiaolei Huang, Chenglong Feng, Guanglei Zhao, Mi Ding, Wenjing Kang, Guanghui Yu, Wei Ran*, Qirong Shen, 2017, Carbon sequestration potential promoted by oxalate extractable iron oxides through organic fertilization, Soil Science Society of America Journal, 81(6): 1359–1370,.

(16) Chichao Huang, Sha Liu, Ruizhi Li, Fusheng Sun, Ying Zhou, Guanghui Yu*, 2016, Spectroscopic evidence of the improvement of reactive iron mineral content in red soil by long-term application of swine manure, PLoS One, 11(1): e0146364,.

(17) Jian Xiao, Xinhua He, Ying Zhou, Lirong Zheng, Jialong Hao, Wei Ran, Qirong Shen, Guanghui Yu*, 2016, New strategies for submicron characterization the carbon binding of reactive minerals in long-term contrasting fertilized soils: implications for soil carbon storage, Biogeosciences, 13(12): 3607–3618,.

(18) Huan Li, Shuijin Hu, Matthew L. Polizzotto, Xiaoli Chang, Qirong Shen, Wei Ran, Guanghui Yu*, 2016, Fungal biomineralization of montmorillonite and goethite to short-range-ordered minerals, Geochimica et Cosmochimica Acta, 191:17–31,.

(19) Jian Xiao, Yongli Wen, Huan Li, Qirong Shen, Wei Ran, Xinlan Mei, Xinhua He, Guanghui Yu*, 2015, In situ visualization and characterization of the capacity of highly reactive minerals preserving soil organic matter (SOM) in colloids at submicron scales, Chemosphere, 138: 225–232,.

(20) Bo Yuan, Xinhua Wang*, Chuyang Tang, Xiufen Li, Guanghui Yu, 2015, In situ observation of the growth of biofouling layer in osmotic membrane bioreactors by multiple ?uorescence labeling and confocal laser scanning microscopy, Water Research, 75: 188–200,.

(21) David Chadwick*, Wei Jia, Yanan Tong, Guanghui Yu, Qirong Shen, Qing Chen, 2015, Improving manure nutrient management towards sustainable agricultural intensification in China, Agriculture, Ecosystems and Environment, 209: 34–46,.

(22) Ning Ling, Dongsheng Wang, Chen Zhu, Yang Song, Guanghui Yu, Wei Ran, Qiwei Huang, Shiwei Guo, Qirong Shen*, 2014, Response of the population size and community structure of Paenibacillus spp. to different fertilization regimes in a long-term experiment of red soil, Plant and Soil, 383(1–2): 87–98,.

(23) Chang Wang, Chichao Huang, Jian Qian, Jian Xiao, Huan Li, Yongli Wen, Xinhua He, Wei Ran, Qirong Shen, Guanghui Yu*, 2014, Rapid and accurate evaluation of the quality of commercial organic fertilizers using near infrared spectroscopy, PLoS One, 9(2): e88279,.

(24) Yongli Wen, Jian Xiao, Huan Li, Qirong Shen, Wei Ran, Quansuo Zhou, Guanghui Yu*, Xinhua He, 2014, Long-term fertilization practices alter soil aluminum fractions and coordinate state in soil colloids, Soil Science Society of America Journal, 78(6): 2083–2089,.

(25) Jun Wu, Minjie Wu, Chunping Li, Guanghui Yu*, 2014, Long-term fertilization modifies the structures of soil fulvic acids and their binding capability with Al, PLoS One, 9(8): e105567,.

(26) Yongli Wen, Huan Li, Jian Xiao, Chang Wang, Qirong Shen, Wei Ran, Xinhua He, Quansuo Zhou, Guanghui Yu*, 2014, Insights into complexation of dissolved organic matter and Al(III) and nanominerals formation in soils under contrasting fertilizations using two-dimensional correlation spectroscopy and high resolution- transmission electron microscopy techniques, Chemosphere, 111: 441–449,.

(27) Xiaoming Li, Qirong Shen, Dongqing Zhang, Xinlan Mei, Wei Ran, Yangchun Xu, Guanghui Yu*, 2013, Functional groups determine biochar properties (pH and EC) as studied by two-dimensional 13C NMR correlation spectroscopy, PLoS One, 8(6): e65949,.

(28) Yihong Luo, Dongqing Zhang, Guanghui Yu*, Qirong Shen, 2013, Aromatic moieties from matured chicken manure and agriculture residues compost suppress the growth of Lepidium sativum L. and Trichoderma harzianum, Pedosphere, 23(6): 826–834,.

(29) Minjie Wu, Xinlan Mei, Qirong Shen, Guanghui Yu*, 2012, Molecular structures and biofilm characterization in compost at different maturity stages using 13C NMR spectroscopy and multiple fluorescence labeling techniques, Journal of Residuals Science & Technology, 9(2): 65–72,.

(30) Liping Wang, Qirong Shen, Guanghui Yu*, Wei Ran, Yangchun Xu, 2012, Fate of biopolymers during rapeseed meal and wheat bran composting as studied by two-dimensional correlation spectroscopy in combination with multiple fluorescence labeling techniques, Bioresource Technology, 105: 88–94,.

(31) Guanghui Yu, Minjie Wu, Guanran Wei, Yihong Luo, Wei Ran, Boren Wang, Jianchao Zhang, and Qirong Shen*, 2012, Binding of organic ligands with Al(III) in dissolved organic matter from soil: implications for soil organic carbon storage, Environmental Science and Technology, 46(11): 6102–6109,.

(32) Guanghui Yu, Zhu Tang, Yangchun Xu, Qirong Shen*, 2011, Multiple fluorescence labeling and two dimensional FTIR–13C NMR heterospectral correlation spectroscopy to characterize extracellular polymeric substances in biofilms produced during composting, Environmental Science and Technology, 45(21): 9224–9231,.

(33) Guanghui Yu, Minjie Wu, Yihong Luo, Xingming Yang, Wei Ran, Qirong Shen*, 2011, Fluorescence excitation-emission spectroscopy with regional integration analysis for assessment of compost maturity, Waste Management, 31(8): 1729–1736,.

(34) Guanghui Yu, Pinjing He*, Liming Shao, 2010, Reconsideration of anaerobic fermentation from excess sludge at pH 10.0 as an eco–friendly process, Journal of Hazardous Materials, 175(1–3): 510–517,.

(35) Guanghui Yu, Yihong Luo, Minjie Wu, Zhu Tang, Dongyang Liu, Xingming Yang, Qirong Shen*, 2010, PARAFAC modeling of fluorescence excitation-emission spectra for rapid assessment of compost maturity, Bioresource Technology, 101(21): 8244–8251,.

(36) Guanghui Yu, Pinjing He*, Liming Shao, 2010, Novel insights into sludge dewaterability by fluorescence excitation–emission matrix combined with parallel factor analysis, Water Research, 44(3): 797–806,.

(37) Guanghui Yu, Duujong Lee*, Pinjing He, Liming Shao, Juinyih Lai, 2010, Fouling layer with fractionated extracellular polymeric substances of activated sludge, Separation Science and Technology, 45(7): 993–1002,.

(38) Guanghui Yu, Pinjing He*, Liming Shao, Duujong Lee, Mujurndar Arum S, 2010, Extracellular polymeric substances (EPS) and extracellular enzymes in aerobic granules, Drying Technology, 28(7): 910–915,.

(39) Guanghui Yu, Yuchuan Juang, Duujong Lee*, Pinjing He, Liming Shao, 2009, Filterability and extracelular polymeric substances in aerobic granules for AGMBR process, Journal of the Taiwan Institute of Chemical Engineers, 40(4): 479–483,.

(40) Guanghui Yu, Pinjing He*, Liming Shao, Yishu Zhu, 2009, Enzyme extraction by ultrasound from sludge flocs, Journal of Environmental Sciences, 21(2): 204–210,.

(41) Guanghui Yu, Yuchuan Juang, Duujong Lee*, Pinjing He, Liming Shao, 2009, Enhanced aerobic granulation with extracellular polymeric substances (EPS)–free pellets, Bioresource Technology, 100(20): 4611–4615,.

(42) Guanghui Yu, Pinjing He*, Liming Shao, 2009, Characteristics of extracellular polymeric substances (EPS) fractions in sludge flocs and their effects on flocculability, Bioresource Technology, 100(13): 3193–3198,.

(43) Guanghui Yu, Pinjing He*, Liming Shao, 2009, Characteristics of different extracellular polymeric substances (EPS) fractions of sludge flocs from brewery wastewater treatment plant (WWTP), Journal of Residuals Science & Technology, 6(3): 105–111,.

(44) Guanghui Yu, Pinjing He*, Liming Shao, 2009, Breakage and re–growth of sludge flocs by removal and re–addition of extracellular polymeric substances (EPS) fractions, Environmental Engineering Science, 26(10): 1533–1540,.

(45) Guanghui Yu, Pinjing He*, Liming Shao, Peipei He, 2008, Toward understanding the mechanism of improving the production of volatile fatty acids from activated sludge at pH 10.0, Water Research, 42(18): 4637–4644,.

(46) Guanghui Yu, Pinjing He*, Liming Shao, Peipei He, 2008, Stratification structure of sludge flocs with implications to dewaterability, Environmental Science and Technology, 42(21): 7944–7949,.

(47) Guanghui Yu, Pinjing He*, Liming Shao, Yishu Zhu, 2008, Extracellular proteins, polysaccharides and enzymes impact on sludge aerobic digestion after ultrasonic pretreatment, Water Research, 42(8–9): 1925–1934,.

(48) Guanghui Yu, Pinjing He*, Liming Shao, Duujong Lee, 2008, Extracellular enzymes in sludge flocs collected at fourteen full–scale wastewater treatment plants, Journal of Chemical Technology and Biotechnology, 83(12): 1717–1725,.

(49) Guanghui Yu, Xiaojun Xu, Pinjing He*, 2007, Isolates identification and characteristics of microorganisms in biotrickling filter and biofilter system treating H2S and NH3, Journal of Environmental Sciences, 19 (7): 859–863,.

(50) Guanghui Yu, Pinjing He*, Liming Shao, Duujong Lee, 2007, Enzyme activities in activated sludge flocs, Applied Microbiology and Biotechnology, 77(3): 605–612,.