

## Academic Staff Resume

Name: DU, PEIXIN

Title: Assistant Professor

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### Academic Qualification:

Ph.D. in Mineralogy

Bachelor in Geological Engineering

### Teaching Area

Introduction to Earth Science

Crystallography and Mineralogy

### Research Area

Comparative Planetology

Planetary Geology

Astrochemistry

Mineralogy

### Working Experience

2018.7 - 2020.8 Guangzhou Institute of Geochemistry, Chinese Academy of Sciences  
Postdoctoral Researcher

2020.9~ Macau University of Science and Technology Assistant Professor

### Research Projects

China Postdoctoral Science Foundation (First Class), 2018~2020, PI

National Natural Science Foundation of Guangdong Province, China, 2019~2022, PI

National Natural Science Foundation of China, 2021~2022, PI

### Professional Certification and Awards

Bruker Certified SPM Operator

2020 Summer School in Planetary Sciences

National Endeavor Scholarship (2011, 2012)

National Scholarship (2010)

### Professional Society Membership

Chinese Society for Mineralogy, Petrology and Geochemistry Life number

Reviewers of International SCI journals such as Applied Clay Science, Clay Science, etc.

## Academic Publication

### Journal Articles:

**Du, P. X.**, Yuan, P., Liu, J., Yang, Y., Bu, H., Wang, S., Zhou, J., Song, H., Liu, D., Michalski, J.R., Liu, C., 2020. Effects of environmental Fe concentrations on formation and evolution of allophane in Al-Si-Fe systems: Implications for both Earth and Mars. *Journal of Geophysical Research - Planets* Accepted.

**Du, P. X.**; Thill, A.; Yuan, P.; Wang, S.; Liu, D.; Gobeaux, F.; Deng, L.; Song, Y., Tailoring structure and surface chemistry of hollow allophane nanospheres for optimization of aggregation by facile methyl modification. *Applied Surface Science* 2020, 510, 145453.

**Du, P. X.**; Yuan, P.; Liu, D.; Wang, S.; Song, H. Z.; Guo, H. Z., Calcination-induced changes in structure, morphology, and porosity of allophane. *Applied Clay Science* 2018, 158, 211-218.

**Du, P. X.**; Liu, D.; Yuan, P.; Deng, L.; Wang, S.; Zhou, J.; Zhong, X., Controlling the macroscopic liquid-like behaviour of halloysite-based solvent-free nanofluids via a facile core pretreatment. *Applied Clay Science* 2018, 156, 126-133.

**Du, P. X.**; Yuan, P.; Thill, A.; Annabi-Bergaya, F.; Liu, D.; Wang, S., Insights into the formation mechanism of imogolite from a full-range observation of its sol-gel growth. *Applied Clay Science* 2017, 150, 115-124.

**杜培鑫**; 袁鹏; 庄官政, 纳米管状埃洛石的应用矿物学研究进展. *矿产保护与利用* 2019, 39(6), 77-86.

**杜培鑫**; 袁鹏, 叶腊石在超硬材料等关键矿物材料领域的研究和应用. *矿产保护与利用* 2019, 39(6), 87-92.

**杜培鑫**; 万华仙; 孙红娟, 蒙脱石对Sr、Cs、Pb等重金属离子吸附作用的研究. *非金属矿* 2012, 57-60.

**杜培鑫**; 康军利; 郑赫; 董恩臣; 黄根, 西南科技大学污水回用方案研究. *环境科学与管理* 2012, 105-109.

Wang, S., **Du, P. X.**, Yuan, P., Liu, Y., Song, H., Zhou, J., Deng, L., Liu, D., 2020. Structural alterations of synthetic allophane under acidic conditions: Implications for understanding the acidification of allophanic Andosols. *Geoderma* 376, 114561.

Deng, L.; **Du, P. X.**; Yu, W.; Yuan, P.; Annabi-Bergaya, F.; Liu, D.; Zhou, J., Novel hierarchically porous allophane/diatomite nanocomposite for benzene adsorption. *Applied Clay Science* 2019, 168, 155-163.

袁鹏; **杜培鑫**; 周军明; 王顺, 铝硅酸盐纳米矿物的地质意义和资源价值再认识. *岩石学报* 2019, 35 (1), 164-176.

Wang, S.; **Du, P. X.**; Yuan, P.; Zhong, X. M.; Liu, Y. Q.; Liu, D.; Deng, L. L., Changes in the structure and porosity of hollow spherical allophane under alkaline conditions. *Applied Clay Science* 2018, 166, 242-249.

Song, Y.; Yuan, P.; **Du, P. X.**; Deng, L.; Wei, Y.; Liu, D.; Zhong, X.; Zhou, J., A novel halloysite-CeO<sub>x</sub> nanohybrid for efficient arsenic removal. *Applied Clay Science* 2020, 186, 105450.

Deng, L.; Liu, D.; **Du, P. X.**; Bu, H.; Song, Y.; Tian, Q.; Yuan, W.; Yuan, P.; Liu, Z.; He, H., Enhancement of Diatomite Solid Acidity by Al Incorporation, as Evaluated by the Catalytic Effects on the Thermal Decomposition of 12-aminolauric Acid. *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 2016, 509, 190-194.

Deng, L.; Yuan, P.; Liu, D.; **Du, P. X.**; Zhou, J.; Wei, Y.; Song, Y.; Liu, Y., Effects of calcination and acid treatment on improving benzene adsorption performance of halloysite. *Applied Clay Science* 2019, 181, 105240.

Liu, D.; Tian, Q.; Yuan, P.; **Du, P. X.**; Zhou, J.; Li, Y.; Bu, H.; Zhou, J., Facile sample preparation method allowing TEM characterization of the stacking structures and interlayer spaces of clay minerals. *Applied Clay Science* 2019, 171, 1-5.

Li, Y.; Chen, M.; Liu, C.; Song, H.; Yuan, P.; Zhang, B.; Liu, D.; **Du, P. X.**, Effects of layer-charge distribution of 2:1 clay minerals on methane hydrate formation: A molecular dynamics simulation study. *Langmuir* 2020, 36 (13), 3323-3335.

Wei, Y. F.; Yuan, P.; Liu, D.; Losic, D.; Tan, D. Y.; Chen, F. R.; Liu, H. C.; Zhou, J. M.; **Du, P. X.**; Song, Y. R., Activation of natural halloysite nanotubes by introducing lanthanum oxycarbonate nanoparticles via co-calcination for outstanding phosphate removal. *Chemical Communications* 2019, 55, 2110-2113.

Song, Y.; Yuan, P.; Wei, Y.; Liu, D.; Tian, Q.; Zhou, J.; **Du, P. X.**; Deng, L.; Chen, F.; Wu, H., Constructing hierarchically porous nestlike Al<sub>2</sub>O<sub>3</sub>-MnO<sub>2</sub>@diatomite composite with high specific surface area for efficient phosphate removal. *Industrial & Engineering Chemistry Research* 2019, 58 (51), 23166-23174.

Yuan, P.; Liu, D.; Zhou, J.; Tian, Q.; Song, Y.; Wei, H.; Wang, S.; Zhou, J.; Deng, L.; **Du, P. X.**, Identification of the occurrence of minor elements in the structure of diatomaceous opal using FIB and TEM-EDS. *American Mineralogist* 2019, 104, 1323-1335.

Bu, H.; Liu, D.; Yuan, P.; Zhou, X.; Liu, H.; **Du, P. X.**, Ethylene glycol monoethyl ether (EGME) adsorption by organic matter (OM)-clay complexes: Dependence on the OM Type. *Applied Clay Science* 2019, 168, 340-347.

Wei, Y. F.; Yuan, P.; Song, Y. R.; Liu, D.; Losic, D.; Tan, D. Y.; Chen, F. R.; Liu, H. C.; **Du, P. X.**; Zhou, J. M., Activating 2D nano-kaolinite using hybrid nanoparticles for enhanced phosphate capture. *Chemical Communications* 2018, 54 (82), 11649-11652.

Liu, D.; Yu, W. B.; Deng, L. L.; Yuan, W. W.; Ma, L. Y.; Yuan, P.; **Du, P. X.**; He, H. P., Possible mechanism of structural incorporation of Al into diatomite during the deposition process I. Via a condensation reaction of hydroxyl groups. *Journal of Colloid and Interface Science* 2016, 461, 64-68.

Liang, X.; He, Z.; Wei, G.; Liu, P.; Zhong, Y.; Tan, W.; **Du, P. X.**; Zhu, J.; He, H.; Zhang, J., The distinct effects of Mn substitution on the reactivity of magnetite in heterogeneous Fenton reaction and Pb (II) adsorption. *Journal of Colloid and Interface Science* 2014, 426, 181-189.

Zhou, X.; Liu, D.; Bu, H.; Deng, L.; Liu, H.; Yuan, P.; **Du, P. X.**; Song, H., XRD-based quantitative analysis of clay minerals using reference intensity ratios, mineral intensity factors, Rietveld, and full pattern summation methods: A critical review. *Solid Earth Sciences* 2018, 3, 16-29

庄官政; 邓亮亮; 杜培鑫; 袁鹏; 刘冬, 硅藻蛋白石基先进材料的构建和应用研究进展. *矿产保护与利用* 2019, 39 (6), 121-133.

周翔; 刘冬; 卜红玲; 宋弘喆; 杜培鑫; 袁鹏; 刘红梅, 基于MIF法的几种黏土矿物X射线衍射定量研究. *中国矿业* 2018, 27, 121-127.

Books & Book Chapters:

Tan, D. Y.; Yuan, P.; Liu, D.; **Du, P.X.**, 2016. Surface modifications of halloysite, in: Yuan, P., Thill, A., Annabi-Bergaya, F. (Eds.), *Nanosized Tubular Clay Minerals*. Elsevier, Amsterdam, pp. 167-201

Conference Papers:

**Du, P.X.**, Yuan, P., Deng, L.L., Liu, D., Song, Y.R., 2016. Solvothermal synthesis of nanosized tubular imogolite: An atomic force microscopy observation, The 3rd Asian Clay Conference, Guangzhou, Guangdong, China.

**Du, P.X.**, Yuan, P., Deng, L.L., Liu, D., Song, Y.R., 2017. A full-range observation on sol-gel synthesis of imogolite using atomic force microscopy, The 54th Annual Clay Minerals Society Conference - Living Clays, Edmonton, Alberta, Canada.

**Du, P.X.**, Yuan, P., Liu, D., Wang, S., Song, H., Guo, H., 2018. Structure, morphology and porosity changes of allophane under heating, 2018 International Conference on Nanogeosciences, Guiyang, China.

**Du, P.X.**, Yuan, P., Wang, S., Zhou, J., Liu, D., 2020. Effects of iron concentrations on allophane formation in Al-Si-Fe systems, The 4th Asian Clay Conference, Pattaya, Thailand.

Wang, S., **Du, P.X.**, Yuan, P., Zhong, X., Liu, Y., Liu, D., 2018. Effects of alkaline treatments on nanostructure and porosity of hollow spherical allophane, 2018 International Conference on Nanogeosciences, Guiyang, China.

Liu, D., **Du, P.X.**, Yuan, P., Bu, H., 2020. Direct evidence of aluminum occurrence in the interlayer space of hydroxyl interlayered vermiculite (HIV) in subtropical soils, The 4th Asian Clay Conference, Pattaya, Thailand.

Yuan, P., **Du, P.X.**, Liu, D., Wang, S., Song, H., Guo, H., 2018. Structure, morphology and porosity changes of allophane under heating, XXII Meeting of the International Mineralogical Association, Melbourne.

Wang, S., Yuan, P., **Du, P.X.**, Liu, Y., Liu, D., 2020. Acid-induced alterations of the structure of allophane, The 4th Asian Clay Conference, Pattaya, Thailand.

Yuan, P., Wei, Y., Liu, D., Liu, H., Zhou, J., **Du, P.X.**, Song, Y., 2019. Activation of halloysite and kaolinite by introducing lanthanum oxycarbonate nanoparticles via co-calcination for efficient phosphate removal, 2019 EUROCLAY International Conference on Clay Science and Technology, Paris

Song, Y., Yuan, P., Liu, D., Deng, L., Tian, Q., Zhou, J., **Du, P.X.**, 2018. Novel Al<sub>2</sub>O<sub>3</sub>-MnO<sub>2</sub>@diatomite nanohybrid for efficient phosphate removal, XXII Meeting of the International Mineralogical Association, Melbourne.

Deng, L., Yuan, P., Annabi-Bergaya, F., Liu, D., **Du, P.X.**, Zhou, J., Wang, S., Zhong, X., 2016. Montmorillonite, kaolinite and halloysite as adsorbents for benzene adsorption, The 3rd Asian Clay Conference, Guangzhou, Guangdong, China.

**杜培鑫**, 袁鹏, 刘冬, 王顺, 邓亮亮, 2019. 水铝英石结构中的铁-铝类质同象置换机制初探, 中国矿物岩石地球化学学会第17届学术年会, 中国浙江杭州.

**杜培鑫**, 袁鹏, 刘冬, 邓亮亮, 宋雅然, 2017. 纳米管状伊毛缟石的溶胶-凝胶法合成机理, 中国矿物岩石地球化学学会第九次全国会员代表大会暨第16届学术年会, 中国陕西西安.

杜培鑫, 袁鹏, 邓亮亮, 刘冬, 宋雅然, 2016. 管状伊毛缟石的溶剂热法合成: 原子力显微镜研究, 2016年全国矿物科学与工程学术研讨会, 中国北京.

袁鹏, 杜培鑫, 周军明, 王顺, 2019. 铝硅酸盐纳米矿物在地球物质循环中的作用及其资源价值简析, 中国矿物岩石地球化学学会第17届学术年会, 中国浙江杭州.

王顺, 杜培鑫, 袁鹏, 刘冬, 刘亚琦, 2019. 水铝英石在酸、碱、热条件下的结构演化和机理, 中国矿物岩石地球化学学会第17届学术年会, 中国浙江杭州.

袁鹏, 魏燕富, 刘冬, 刘红昌, 杜培鑫, 周军明, 2019. 埃洛石和高岭石结构铝的共煅烧活化用于吸附反应, 中国矿物岩石地球化学学会第17届学术年会, 中国浙江杭州.

袁鹏, 刘冬, 田倩, 周军明, 宋雅然, 魏辉煌, 王顺, 周洁玉, 邓亮亮, 杜培鑫, 2019. 硅藻质A型蛋白石成分和结构的新认识, 中国矿物岩石地球化学学会第17届学术年会, 中国浙江杭州.

周军明, 袁鹏, 张佰发, 刘冬, 樊文鼎, 杜培鑫, 2019. 八尺稀土矿凝灰岩风化壳中黏土矿物对稀土元素赋存的作用初探, 中国矿物岩石地球化学学会第17届学术年会, 中国浙江杭州.

邓亮亮, 袁鹏, 刘冬, 杜培鑫, 周军明, 2016. 层状硅酸盐矿物的微结构对其苯吸附性的影响, 2016年全国矿物科学与工程学术研讨会, 中国北京.

杜培鑫, 袁鹏, 刘冬, 王顺, 邓亮亮, 2018. 铝硅酸盐纳米矿物水铝英石和伊毛缟石的结构与调控, 2018年全国矿物科学与工程学术会议, 中国四川绵阳.

刘冬, 田倩, 周洁玉, 杜培鑫, 魏辉煌, 袁鹏, 2019. 红壤中1.4 nm蛭石型羟基间层黏土矿物(1.4nm-HIV)的固体酸性研究, 2019年中国地球科学联合学术年会, 中国北京.