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李真博士主要结合**磷灰石**，**解磷菌**，以及其他微生物（如**AMF**）在土壤中研究磷的**地球化学和生态循环**。在基础研究上主要解析 1) 磷素的**高效释放机理**；2) 微生物-矿物-植物三因子相互作用；3) 磷元素的生物矿化过程。在应用层次主要研究 1) 高效磷肥的开发；2) 基于高效磷素释放的**重金属土壤修复**；3) 含磷固体废弃物的处理。

## 教育与工作经历

- 2001-2005, 南京大学地球科学系 地质学国家理科人才培养基地 **理学学士**
- 2005-2008, (免试保送) 南京大学地球科学系 地球探测与信息技术专业 **工学硕士**
- 2008.8-2013.12, 圣路易斯华盛顿大学 地球与行星科学系 **哲学博士**
- 2014.6--, 南京农业大学土壤与生态学系 讲师

## 学术兼职与服务

- 美国矿物学协会 会员
- Scientific Reports 学术编委 (矿物与土壤科学)
- Am. Miner., Chem. Geol., GCA, BBA Gen. Sub., Sci. Rep. 等杂志同行评议

## 获奖经历

- 华盛顿大学 Wheeler 奖学金 (2008-2012)
- 华盛顿大学优秀助教 (2009-2010)
- 华盛顿大学毕业论文奖学金 (2013)
- 江苏双创博士计划 (2015)

## 主持项目

- 国家 973 重大专项子课题专题, No. 2015CB150504, ¥900, 000
- 教育部留学人员回国基金 (生物磷灰石重金属沉积), ¥35, 000
- 南京市留学人员择优项目 (基于矿物的土壤修复), ¥20, 000
- 江苏省青年基金 (土壤磷循环), No. BK20150683, ¥200, 000
- 南京大学内生矿床国家重点实验室开放基金, 21-16-07, ¥100, 000
- 江苏双创博士, ¥150, 000

**Zhen Li**

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**Employer:**

- 2014 June --, Lecturer, Nanjing Agricultural University

**Education:**

- Ph.D, 2008-2013, Earth and Planetary Sciences, Washington University in St. Louis
- M.E., 2005-2008, Geodetection and Information Technology, Nanjing University
- B.S., 2001-2005, Geology, Nanjing University

**Teaching Courses:**

- Academic English in Ecology
- Biogeochemistry

**Membership & Society Service:**

- Member of Mineralogical Society of American
- Editor Member (in Mineralogy and Soil Sciences), *Scientific Reports*

**Awards:**

- The Double Innovation Talent Program of Jiangsu Province (2015)
- Dissertation Fellowship at WUSTL (2013)
- Outstanding Performance of Teaching Assistant at WUSTL (2010)

**Oral Presentations**

- 2016 Sep, 13rd Soil Society Conference, Xi'an, China
- 2015 Oct, Mineralogical Science and Engineering, Nanjing, China
- 2014 June, Goldschmidt, Sacramento, CA U.S.
- 2014 June, XI GeoRaman, Saint Louis, MO U.S.
- 2014 July, 12th ICCLR, Beijing, China

**Research Interests:**

- Environmental Mineralogy & Environmental Remediation
- Biomineralization
- Mineralogy in Soils
- Phosphorous Biogeochemistry

**Grants:**

- 2016, Analytical fund of State Key Laboratory for Mineral Deposits Research, Nanjing University, ¥100,000
- 2015-2019, National Program on Key Basic Research Project, No. 2015CB150504, ¥900,000
- 2015, Scientific Research Foundation for the Returned Overseas Chinese Scholars, State Education Ministry, ¥35,000
- 2015, Analytical fund of CAGS, ¥90,000
- 2015, Distinguished Project for Returned Scholars, Nanjing, ¥20,000
- 2015-2018, Natural Science Foundation of Jiangsu Province, No. BK20150683, ¥200,000
- 2015-2017, The Double Innovation Talent Program of Jiangsu Province, ¥150,000

**Issued Patents:**

[1] 2016, **Li Z.** A method of enhancing P release from apatite, ZL201410458823.9.

**Representative Publications (\*: Corresponding):**

[13] **Li Z.**, Tang L.Y., Zheng Y.F., Tian D., Su M., Zhang F., Ma S.J., Hu S.J. (2017) Characterizing the mechanisms of lead immobilization via bioapatite and various clay minerals, *ACS Earth and Space Chemistry*, Accepted.

[12] Wang S.J., Zhang P.H., Kong X.F., Xie S.D., Li Q., **Li Z\***, Zhou Z.L.\* (2017) Delicate changes of bioapatite mineral in pig femur with addition of dietary xylooligosaccharide: Evidences from Raman spectroscopy and ICP, *Animal Science Journal*, DOI: 10.1111/asj.12837.

[11] Chen W.K., Wang Q.Z., Meng S.T., Yang P., Jiang L., Zou X., **Li Z\***, Hu S.J.\* (2017) Temperature-related changes of Ca and P release in synthesized hydroxylapatite, geological fluorapatite, and bone bioapatite, *Chemical Geology*, 451:183-188.

[10] Zheng W.J., Yang H., Xuan G.H., Dai L.T., Hu Y.X., Hu S.J., Zhong S.K., **Li Z\***, Gao M.Y., Wang S.M., Feng Y\*. (2017) Longitudinal study of the effects of environmental pH on the mechanical properties of *Aspergillus niger*. *ACS Biomaterials Science & Engineering*, DOI: 10.1021/acsbiomaterials.6b00294.

[9] **Li Z.**, Wang F.W., Bai T.S., et al. (2016) Lead immobilization by geological fluorapatite and fungus *Aspergillus niger*. *J Hazardous Materials*, 320: 386-392.

[8] **Li Z.**, Bai T.S., Dai L.T., et al. (2016) A study of organic acid production in contrasts between two phosphate solubilizing fungi: *Penicillium oxalicum* and *Aspergillus niger*. *Scientific Reports*, 6: 25313.

[7] **Li Z.**, Li Q., Wang S.J., et al. (2016) Rapid increase of carbonate in cortical bones of hens during laying period. *Poultry Science*. DOI: 10.3382/ps/pew182.

[6] **Li Z.**, Al-Jawad M., Siddiqui S., Pasteris J.D. (2015) A mineralogical study in contrasts: highly mineralized whale rostrum and human enamel. *Scientific Reports*, 5: 16511.

[5] **Li Z.**, Wu S.P., and Ye C.L. (2015) Temperature-related changes of bioapatite based on hypermineralized dolphin's bulla. *Journal of Raman Spectroscopy*, 46: 964-968.

[4] **Li Z.** and Pasteris J. D. (2014) Tracing the pathway of compositional changes in bone mineral with age: Preliminary study of bioapatite aging in hypermineralized dolphin's bulla. *BBA-General Subjects*, 1840: 2331-2339.

[3] **Li Z.** and Pasteris J. D. (2014) Chemistry of bone mineral, based on the hypermineralized rostrum of the beaked whale *Mesoplodon densirostris*. *American Mineralogist*, 99: 645-653.

[2] **Li Z.**, Pasteris J. D., et al. (2013) Hypermineralized whale rostrum as the exemplar for bone mineral. *Connect Tissue Res*. 54(3):167-175.

[1] **Li Z.**, He K., Yin L., et al. (2007) Crystallochemistry of Fe-rich palygorskite from Eastern China. *Clay Minerals*, 42(4): 453-461.

#### **Contributed Publications:**

[3] Smith L.J., Deymier A.C., Boyle J.J., **Li Z.**, Linderman S.W., Pasteris J.D., Xia Y.N., Genin G.M., Thomopoulos S. (2016) Tunability of collagen matrix mechanical properties via multiple modes of mineralization. *Interface*, 6 (1): DOI:10.1098/rsfs.2015.0070.

[2] Huang Y.J., **Li Z.**, Li S.Z., et al. (2007) Mössbauer investigations of palygorskite from Xuyi, China. *Nuclear Instruments & Methods in Physics Res. B*, 2: 657-662.

[1] He K., Dong Y.M., **Li Z.**, et al. (2007) Catalytic ozonation of phenol in water with natural brucite and magnesia. *J Hazardous Materials*, 159: 587-592.

Ecosystem Ecology Lab at NJAU: <http://site.njau.edu.cn/html/kyjg/stxt/index.html>

[http://www.researchgate.net/profile/Zhen\\_Li54](http://www.researchgate.net/profile/Zhen_Li54)

ResearchID: <http://www.researcherid.com/rid/M-7631-2016>