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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
- 2014.6-2016.12, 南京农业大学土壤与生态学系 讲师
- 2016.12- 南京农业大学土壤与生态学系 副教授

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)
- 南京市留学人员择优项目 (2015)
- 全国高校农林类专业微课教学比赛一等奖 (最高奖) (2017)

主持项目

- 2015, 国家 973 重大专项子课题专题, No. 2015CB150504, ¥920,000
- 2015, 教育部留学人员回国基金 (生物磷灰石重金属沉积), ¥35,000
- 2015, 南京市留学人员择优项目 (基于矿物的土壤修复), ¥20,000
- 2015, 江苏省青年基金 (土壤磷循环), No. BK20150683, ¥200,000
- 2015, 江苏双创博士, ¥150,000
- 2016, 南京大学内生矿床国家重点实验室开放基金, No. 21-16-07, ¥100,000
- 2017, 中国博士后面上基金一等资助 (解磷菌), No. 2017M610330, ¥80,000
- 2017, 中央高校基本业务费重点项目 (解磷菌), No. KYZ201712, ¥90,000
- 2017, 江苏省大学生创业训练计划 (土壤修复), No. 201710307003P, ¥50,000
- 2015-2017, 横向项目, ¥320,000
- 2017-2018, NJAU-MSU Asia Hub, ¥330,000

已授权国家发明专利

- 2016, 李真, 一种提高磷肥磷元素释放效率的方法, ZL2014104588239
- 2018, 李真, 一种基于粘土和磷灰石的土壤修复材料及其制备方法, ZL2014104139475

毕业学生去向

- 2017, 本科生: 孟士婷 (保送北师大硕士); 张俐 (日本九州大学硕士, 全奖); 胡云潇 (卡塞尔大学)
- 2018, 本科生: 唐凌逸 (保送南农, 清华联培)

Below is the English version:

Zhen Li

College of Resources & Environmental Sciences

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ResearchGate: http://www.researchgate.net/profile/Zhen_Li54

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

Employer:

- 2014.06 – 2016.12, Lecturer, Nanjing Agricultural University
- 2017.01-, Associate Professor, Nanjing Agricultural University

Education:

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

Teaching Courses:

- Academic English in Ecology
- Biogeochemistry
- Environmental Geology

Membership & Society Service:

- Member of Mineralogical Society of America
- 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

- 2017, Oct, 7th Agro-Environmental Sciences, Guiyang, China
- 2017, Oct, 9th NCEC, Hangzhou, China
- 2017 Mar, 1st ENPE, Nanjing, China
- 2016 Sep, 13rd Soil Society Conference, Xi'an, China
- 2014 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

Authorized Patents:

- [1] 2016, **Li Z.** A method of enhancing P release from apatite, ZL201410458823.9.
- [2] 2017, **Li Z.** A type of material for soil remediation based on clay and apatite, ZL2014104139475

Representative Publications (*: Corresponding):

- [18] Shen Z.T., **Li Z.***, Alessi D.S. (2018) Stabilization-based soil remediation should consider longterm challenges, *Front. Environ. Sci. Eng.* 12(2): 16.
- [17] **Li Z.**, Deng Z.L., Chen S.S., Yang H., Zheng Y.F., Dai L.T., Zhang F., Wang S.M., Hu S.J. (2018) Contrasting physical and biochemical properties of orchard soils suppressive and conducive to Fusarium wilt of banana, *Soil Use and Management*, DOI: 10.1111/sum.12390

[16] Shen Z.T., Tian D., Zhang X.Y., Tang L.Y., Su M., Zhang L., **Li Z***, Hu S.J.*, Hou D.Y. (2018) Mechanisms of biochar assisted immobilization of Pb²⁺ by bioapatite in aqueous solution, *Chemosphere*, 190, 260-266.

[15] **Li Z.**, Su M., Tian D., Tang L.Y., Zhang L., Zheng Y.F., Hu S.J. Effects of elevated atmospheric CO₂ on dissolution of geological fluorapatite in water and soil. *Science of the Total Environment*, 599-600: 1382-1397.

[14] Li Q., Lu L., Xie S.D., Zhang P.H., Wang S.J., Zhang X.Y., Zhou Z.L.* , **Li Z***. (2017) Mineralogical changes of bioapatite in femoral bones of mice during pregnancy, *Spectroscopy Letters*, 50(6), 336-341.

[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*, 1, 152-157.

[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*, 88(11), 1820-1826.

[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*, 3: 2974-2979.

[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.