

占新华,男,博士,教授,博士生导师,环境科学与工程系主任。
研究领域:污染生物学与污染场地修复、环境污染与控制化学。

一、教育经历

2000年9月-2005年12月,南京农业大学 植物营养学(环境污染化学方向)专业,获博士学位

1994年9月-1997年7月,南京农业大学 植物营养与环境专业,获硕士学位

1990年9月-1994年7月,南京农业大学 土壤与农业化学专业,获学士学位

二、工作经历

2009年12月-至今,南京农业大学资环学院,教授,博士生导师

2006年7月-2007年8月 加拿大 Alberta 大学生物系博士后

2005年4月-2009年12月,南京农业大学资环学院,副教授,硕士生导师

2005年4月-2005年9月,加拿大 Alberta 大学生物系访问教授
(Visiting professor)

2004年8月,中国科技大学国家同步辐射实验室同步辐射应用暑期培训(教育部主办)

2003年11月,国家环境保护总局环境影响评价上岗培训(获上岗证)

2000年1月-2005年4月,南京农业大学资环学院环境科学与工程

程系，讲师

1999年8月-2000年2月，香港浸会大学生物系 Visiting scholar

1997年8月-1999年12月，南京农业大学资环学院环境科学与工程系，助教

三、获奖情况

1. 南京农业大学校级教学成果二等奖，2004
2. 江苏省科学技术进步二等奖，2004
3. 《中国环境科学》2005年优秀论文奖，2006
4. 2012年度环境保护科学技术二等奖，2012
5. 2011-2013学年度南京农业大学“优秀教师”，2013
6. 2013年度《农业环境科学学报》优秀审稿人，2013
7. 南京领军型科技创业人才引进计划，2014
8. 南京农业大学校级教学成果一等奖，2017
9. 江苏省教学成果（高等教育类）二等奖，2017
10. 2017-2019学年度南京农业大学“优秀教师”，2019
11. 2016-2018年度《农业环境科学学报》优秀审稿人，2019
12. 2019年中国产学研合作创新成果一等奖，2019

四、教学情况

承担本科生、研究生《环境化学》课程教学

五、学术兼职

1. 教育部高等教育评估中心中国工程教育专业认证专家
2. 江苏省环境科学学会理事

3. 江苏省土壤学会土壤资源与环境专业委员会主任

4. Bulletin of Environmental Contamination and Toxicology
(SCI) 杂志编委

六、主持项目

1. 2018-2021 多环芳烃从作物根表向地上部的转运机制研究
(31770546) 国家自然科学基金

2. 2017-2018 污染物从作物根表至地上部转运的原位研究
教育部南京农业大学重点引智项目 (X2017024)

3. 2016-2018 蓝藻堆肥可行性研究 企业委托项目

4. 2014-2016 有机污染场地土壤生物洗脱修复技术与设备产
业化 南京领军型科技创业人才计划 (321 人才计划)

5. 2014-2017 多环芳烃跨作物根系细胞膜的运输机制研究
(31370521) 国家自然科学基金

6. 2012、6-2015、6 多环芳烃跨作物根系界面的传输机制研究
土壤与农业可持续发展国家重点实验室 (中科院南京土壤研究所) 开
放基金 (0812201223)

7. 2011、8-2014、7 作物根系吸收多环芳烃与吸收无机养分的
相互作用机制研究 中央高校基本科研业务费专项资金资助项目
(KYZ201145)

8. 2009-2012 高浓度有机氯农药污染场地土壤的增效洗脱修
复技术及设备研发 (国家高技术研究发展计划 (863 计划) 重点项目”
有机氯农药类污染场地土壤修复技术设备研发与示范” 子课

题, 2009AA063103)

9. 2007-2010 生物表面活性剂强化修复多环芳烃污染土壤的效果研究(863 重点项目“多环芳烃污染农田土壤的微生物修复技术与示范”子课题, 2007AA061101)

10. 2008-2010 农村污染控制与生态修复关键技术集成与示范(“十一五”国家科技支撑计划重大项目“长江三角洲现代农业区新农村建设关键技术研究集成示范”子课题, 2008BAD96B05)

11. 2004-2006 水溶性有机物影响作物吸收和转运多环芳烃的机制(20377024) 国家自然科学基金

12. 2004-2006 Organic waste amendment for remediation of Cu-contaminated soil (C/3501-1) 国际科学基金(IFIS, 瑞典)

13. 2001-2003 有机配位作用对土壤污染元素活化淋滤与迁移的影响机制(20007001) 国家自然科学基金

七、近年发表的主要论文

1. Yu Shen, Yu Sheng, Jinfeng Li, Jiahui Zhu, Shengnan Shi, **Xinhua Zhan***. The role of temperature in phenanthrene transfer and accumulation in crop leaves. *Environmental Pollution*, 2020, 258, 113827. <https://doi.org/10.1016/j.envpol.2019.113827>.

2. Yu Shen, Haiyan Tang, Wenhao Wu, Heping Shang, Di Zhang, **Xinhua Zhan***, Baoshan Xing*. Role of nano-Biochar in attenuating allelopathic effect from *Imperata cylindrica* on rice seedlings. *Environmental Science: Nano*, 2020, 7, 116-126. DOI: 10.1039/c9en00828d.

3. Jinfeng Li, Yu Shen, Jiahui Zhu, Shiqi Liu, Nengde Zeng, **Xinhua Zhan***. miR398 is involved in the relief of phenanthrene-induced oxidative toxicity in wheat

roots. *Environmental Pollution*, 2020, 258, 113701.
<https://doi.org/10.1016/j.envpol.2019.113701>

4. Yu Shen, Ruochen Gu, Yu Sheng, Nengde Zeng, **Xinhua Zhan***. Acropetal translocation of phenanthrene in wheat seedlings: Xylem or phloem pathway? *Environmental Pollution*, 2020, 260, 114055.
<https://doi.org/10.1016/j.envpol.2020.114055>.

5. Yu Sheng, Luyi Yu, Yu Shen, Ruochen Gu, Jinfeng Li, Fengfei Sun, **Xinhua Zhan***. Distribution characteristics of phenanthrene in wheat, soybean and maize leaves. *Polycyclic Aromatic Compounds*, 2020, 1720748. DOI: 10.1080/10406638.2020.1720748.

6. Yu Shen, Jinfeng Li, Ruochen Gu, **Xinhua Zhan***, Baoshan Xing. Proteomic analysis for phenanthrene-elicited wheat chloroplast deformation. *Environment International*, 2019, 123: 273-281.

7. Jiahui Zhu, Ziheng Zou, Yu Shen, Jinfeng Li, Shengnan Shi, Shuwen Han, **Xinhua Zhan***. Increased ZnO nanoparticle toxicity to wheat upon co-exposure to phenanthrene. *Environmental Pollution*, 2019, 247, 108-117.
<https://doi.org/10.1016/j.envpol.2019.01.046>.

8. Yu Shen, Jinfeng Li, Fang He, Shengnan Shi, Ruochen Gu, Yu Sheng, **Xinhua Zhan***, Baoshan Xing. Phenanthrene-triggered tricarboxylic acid (TCA) cycle response in wheat leaf. *Science of the Total Environment*, 2019, 665, 107-112.
<https://doi.org/10.1016/j.scitotenv.2019.02.119>.

9. Yu Shen, Jinfeng Li, Shengnan Shi, Ruochen Gu, **Xinhua Zhan***, Baoshan Xing. Application of carotenoid to alleviate the oxidative stress caused by phenanthrene in wheat. *Environmental Science and Pollution Research*, 2019, 26(4): 3593-3602. <https://doi.org/10.1007/s11356-018-3832-y>.

10. Yu Shen, Qin Chen, Kaimei Zhang, Xiaoli Zhou, Yanming Fang*, **Xinhua Zhan**. Novel assessment indexes on heavy metal pollution in the environment: extracellular segregation coefficient and segregation coefficient of intercellular organelles. *Fresenius Environmental Bulletin*, 2019, 28(7): 5405-5414.

11. Jian Xu; Xueliang Zhang; Cheng Sun; Jinzhong Wan; Huan He; Fei Wang; Yuxuan Dai; Shaogui Yang; Yusuo Lin; **Xinhua Zhan**. Insights into removal of tetracycline by persulfate activation with peanut shell biochar coupled with amorphous Cu-doped FeOOH composite in aqueous solution. *Environmental Science and Pollution Research*, 2019, 26(3): 2820-2834.
12. Yu Shen, Jinfeng Li, Ruochen Gu, Le Yue, Hongju Wang, **Xinhua Zhan***, Baoshan Xing. Carotenoid and superoxide dismutase are the most effective antioxidants participating in ROS scavenging in phenanthrene accumulated wheat leaf. *Chemosphere*, 2018, 197: 513-525. DOI: 10.1016/j.chemosphere.2018.01.036
13. **Xinhua Zhan***, Mandang Zhu, Yu Shen, Le Yue, Jorge L. Gardea-Torresdey, Guohua Xu. Apoplastic and symplastic uptake of phenanthrene in wheat roots. *Environmental Pollution*, 2018, 233: 331-339.
14. Jian Xu, Xueliang Zhang, Shaogui Yang, Huan He, Yuxuan Dai, Cheng Sun*, Yusuo Lin, **Xinhua Zhan**, Qun Li, Yan Zhou. Catalytic Degradation of Diatrizoate by Persulfate Activation with Peanut Shell Biochar Supported Nano Zero-Valent Iron in Aqueous Solution. *International Journal of Environmental Research and Public Health*, 2018, 15, 1937; doi:10.3390/ijerph15091937.
15. Jinfeng Li, Le Yue, Yu Shen, Yu sheng, **Xinhua Zhan***, Guohua Xu, Baoshan Xing*. Phenanthrene-responsive microRNAs and their targets in wheat roots. *Chemosphere*, 2017, 186: 588-598.
16. Le Yue, Chuanxin Ma, **Xinhua Zhan***, Jason C. White, Baoshan Xing*. Molecular mechanisms of maize seedling response to La₂O₃ NPs exposure: water uptake, aquaporin gene expression and signal transduction. *Environmental Science: Nano*, 2017, 4: 843-855. DOI: 10.1039/C6EN00487C
17. Yu Shen, Jinfeng Li, Ruochen Gu, Le Yue, **Xinhua Zhan***, Baoshan Xing. Phenanthrene-triggered chlorosis is caused by elevated chlorophyll degradation and leaf moisture. *Environmental Pollution*, 2017, 220: 1311-1321. DOI: 10.1016/j.envpol.2016.11.003

18. Yu Shen, Jiangxue Du, Le Yue, **Xinhua Zhan***. Proteomic analysis of plasma membrane proteins in wheat roots exposed to phenanthrene. *Environmental Science and Pollution Research*, 2016, 23: 10863-10871. DOI: 10.1007/s11356-016-6307-z
19. **Xinhua Zhan***, Xiu Yi, Le Yue, Xiaorong Fan, Guohua Xu, Baoshan Xing. Cytoplasmic pH-stat during phenanthrene uptake by wheat roots: a mechanistic consideration. *Environmental Science and Technology*, 2015, 49: 6037-6044. DOI: 10.1021/acs.est.5b00697
20. Xiaoming Yin, Xiao Liang, Ling Yu, Guohua Xu, Quansuo Zhou, **Xinhua Zhan***. Impact of phenanthrene exposure on activities of nitrate reductase, phosphoenolpyruvate carboxylase, vacuolar H⁺-pyrophosphatase and plasma membrane H⁺-ATPase in roots of soybean, wheat and carrot. *Environmental and Experimental Botany*, 2015, 113: 59-66.
21. **Xinhua Zhan***, Jiahan Yuan, Le Yue, Guohua Xu, Bing Hu, Renkou Xu. Response of uptake and translocation of phenanthrene to nitrogen form in lettuce and wheat seedlings. *Environmental Science and Pollution Research*, 2015, 22: 6280–6287. DOI 10.1007/s11356-014-3834-3.
22. Xiaoming Yin, Xiao Liang, Guohua Xu, **Xinhua Zhan***. Effect of phenanthrene uptake on membrane potential in roots of soybean, wheat and carrot. *Environmental and Experimental Botany*, 2014, 99: 53-58.
23. Liqun Zhu, Naijuan Hu, Minfang Yang, **Xinhua Zhan**, Zhengwen Zhang. Effects of different tillage and straw return on soil organic carbon in a rice-wheat rotation system. *PLoS ONE*, 2014, 9(2): e88900. doi:10.1371/journal.pone.0088900.
24. **Xinhua Zhan***, Xiao Liang, Tinghui Jiang, Guohua Xu. Interaction of phenanthrene and potassium uptake by wheat roots: A mechanistic model. *BMC Plant Biology*, 2013, 13: 168.
25. **Zhan Xinhua***, Liang Xiao, Xu Guohua, Zhou Lixiang. Influence of plant root morphology and tissue composition on phenanthrene uptake: Stepwise multiple linear regression analysis. *Environmental Pollution*, 2013, 179: 294-300.

26. Gao Yanfei, Yang Hong, **Zhan Xinhua**, Zhou Lixiang. Scavenging of BHCs and DDTs from soil by thermal desorption and solvent washing. *Environmental Science and Pollution Research*, 2013, 20: 1482-1492.
27. **Xinhua Zhan**, Xiaobin Zhang, Xiaoming Yin, Hengliang Ma, Jianru Liang, Lixiang Zhou, Tinghui Jiang, Guohua Xu. H⁺/phenanthrene symporter and aquaglyceroporin are implicated in phenanthrene uptake by wheat (*Triticum aestivum* L.) roots. *Journal of Environmental Quality*, 2012, 41: 188-196. doi:10.2134/jeq2011.0275.
28. Jian-gang Wang, **Xin-hua Zhan**, Jian-ru Liang, Li-xiang Zhou, Yu-suo Lin and Jonathan W.C. Wong. A novel method for the determination of total hydrocarbon in the hydrocarbon mixture-contaminated soil. *Journal of Bioremediation and Biodegradation*, 2011, S2: 001. doi:10.4172/2155-6199.S2-001.
29. **Xinhua Zhan**, Hengliang Ma, Lixiang Zhou, Jianru Liang, Tinghui Jiang, Guohua Xu. Accumulation of phenanthrene by roots of intact wheat (*Triticum acstivnm* L.) seedlings: passive or active uptake? *BMC Plant Biology*, 2010, 10: 52.
30. **X.H. Zhan**, W.Z. Wu, L.X. Zhou, J.R. Liang, T.H. Jiang. Interactive effect of dissolved organic matter and phenanthrene on soil enzymatic activities. *Journal of Environmental Sciences*, 2010, 22(4): 607-614.
31. Wang Jiangan, **Zhan Xinhua**, Zhou Lixiang, Lin Yusuo. Biological indicators capable of assessing thermal treatment efficiency of hydrocarbon mixture-contaminated soil. *Chemosphere*, 2010, 80: 837-844.
32. Xiaohong Pei, **Xinhua Zhan**, Shimei Wang, Yusuo Lin, Lixiang Zhou. Effect of biosurfactant and Tween-80 on phenanthrene biodegradation by a novel phenanthrene-degrading strain. *Pedosphere*, 2010, 20(6): 771-779.
33. Pei Xiaohong, **Zhan Xinhua**, Zhou Lixiang. Effect of biosurfactant on the sorption of phenanthrene onto original and H₂O₂-treated soils. *Journal of Environmental Sciences*, 2009, 21(10): 1378-1385.

34. LX Zhou, SG Zhou, and **XH Zhan**. Sorption and biodegradability of sludge bacterial extracellular polymers in soil and their influence on soil copper behavior. *Journal of Environmental Quality*, 2004, 33: 154-162.

35. Zhou L.X., J.R. Liang, **X.H. Zhan** et al. Fraction and characterization of sludge bacterial extracellular polymers by FT-IR, ¹³C-NMR, ¹H-NMR. *Water Science and Technology*, 2001, 44(10): 71-78.

36. Guohua Xu, **Xinhua Zhan**, Wenjuan Zheng, et al. Assessing methods of available silicon in calcareous soils. *Communications in Soil Science and Plant Analysis*, 2001, 32(5&6): 787-801.

37. Xu Guohua, Zheng Wenjuan, **Zhan Xinhua**, et al. Silicomolybdenum blue colorimetric determination of available Si in calcareous soils. *Pedosphere* 1996, 6(3): 279-284.

38. 张学良, 徐建, **占新华**, 孙成, 林玉锁. 微波辅助合成 γ -Fe₂O₃/花生壳磁性生物炭对水体中环丙沙星吸附的研究. *环境科学学报*, 2019, 39(11): 3811-3820.

39. 张学良, 李群, 周艳, 廖朋辉, 辜晓平, **占新华**, 林玉锁, 徐建*. 某退役溶剂厂有机物污染场地燃气热脱附原位修复效果试验. *环境科学学报*, 2018, 38(7): 2868-2875.

40. 王红菊, 李倩倩, 沈羽, 顾若尘, 盛妤, **占新华***. 大豆和小麦根系对菲的吸附作用及其生物有效性. *环境科学*, 2017, 38(6): 2561-2567.

41. 陆守昆, 杨青青, 王红菊, 李金凤, 沈羽, **占新华***. 不同条件下小麦根系菲吸收的动力学参数变化. *农业环境科学学报*, 2016, 35(9): 1660-1664.

42. 杨青青, 陆守昆, 王红菊, 李金凤, 沈羽, **占新华***. 小麦根系菲与磷素吸收及转运的相互作用. *生态毒理学报*, 2016, 11(3): 219-225.

43. 朱满党, 都江雪, 乐乐, 李金凤, 杨青青, 陆守昆, **占新华***. 植物根系质外体溶液的提取方法研究: 以多环芳烃为例. *环境科学*, 2015, 36(2): 700-705.

44. 洪俊, 徐君君, 李锦, 黄焕阳, **占新华***. 鼠李糖脂洗脱氯丹和灭蚊灵污染场地土壤的工艺参数研究. *环境工程学报*, 2014, 8(6): 2592-2596.

八、参编教材

1. 固体废物处理处置与资源化 (全国高等学校“十一五”规划教

材) 中国农业出版社 2007

2. 固体废物处理与资源化 中国环境科学出版社 2005

3. 环境生物学 中国农业出版社 2002

4. 植物营养学(下) 中国农业大学出版社 2003

九、招生学科与联系方式

1. 招生学科: 环境科学、环境工程、资源与环境(专硕)

2. 联系方式:

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