



姓名 宋金萍 副教授 学历 理学博士

### 一、教师简介

宋金萍，女，汉族，1979年6月生，山西广灵人，博士，副教授。2013年获山西大学分析化学专业理学博士。2012年10月至2013年10月，在加拿大麦克马斯特大学化学及生物系访学一年。主要从事碳量子点、石墨烯、贵金属等纳米材料的构筑及生物化学传感研究。在国内外学术期刊上发表学术论文30余篇，其中SCI收录25篇（其中Top一区4篇），以第一作者授权中国发明专利4项，实用新型专利4项，曾荣获2009年度山西省自然科学奖二等奖。主持山西省青年科学基金一项，主持山西省高等学校科技创新项目一项，主持大同市科技项目两项，主持山西大同大学博士启动基金一项，主持山西省归国留学基金一项。

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### 二、学习工作经历（包括学术兼职）

1998/09 – 2002/07 雁北师范学院，化学系 理学学士

2002/07 – 2006/09 大同医专，基础部，助教

2006/09 – 2009/07 山西大学，化学化工学院分析化学，理学硕士

2008/10 – 2015/12 山西大同大学，化学与环境工程学院，讲师

2009/09 – 2013/06 山西大学，化学化工学院分析化学，理学博士

2012/10 – 2013/10 加拿大 McMaster 大学，化学及生物系，访学学者

2014/10 – 2018/01 山西大学，环境科学与工程研究中心，博士后

2015/12 – 至今 山西大同大学，化学与环境工程学院，副教授

### 三、科研成果

1、科研成果（学术论文、专利、科研项目、代表著作、编著、译著等）

#### 学术论文

(1) **Jinping Song**, Xiaomin Liang, Qi Ma, Jinhui An, Feng Feng, Fluorescent boron

- and nitrogen co-doped carbon dots with high quantum yield for the detection of nimesulide and fluorescence staining, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 2019, 216: 296-302. (SCI 二区)
- (2) Ruiqi Zhu, **Jinping Song\***(通讯作者), Ying Zhou, Peng Lei, Zhongping Li, Hung-Wing Li, Shaomin Shuang, Chuan Dong, Dual sensing reporter system of assembled gold nanoparticles toward the sequential colorimetric detection of adenosine and Cr(III), *Talanta*, 2019, 204: 294–303. (SCI 二区)
- (3) **Jinping Song**, Qi Ma, Xiaomin Liang, Sufang Zhang, Lazhen Shen, Yong Guo, Feng Feng, A simple preparation method of carbon dots by weak power bathroom lamp irradiation and their application for nimesulide detection and bioimaging, *RSC advance*, 2018,8: 36090-36095. (SCI 三区)
- (4) **Jinping Song**, Qi Ma, Sufang Zhang, Hujun Liu, Yong Guo, Feng Feng, S,N-Co-doped carbon nanoparticles with high quantum yield for metal ion detection, IMP logic gates and bioimaging applications, *New Journal of Chemistry*, 2018,42: 20180-20189. (SCI 三区)
- (5) **Jinping Song**, Jing Li, Ziyang Guo, Wen Liu, Qi Ma\*, Feng Feng, Chuan Dong\*. A novel fluorescent sensor based on sulfur and nitrogen co-doped carbon dots with excellent stability for selective detection of doxycycline in raw milk, *RSC Advances*, 2017, 7: 12827-12834. (SCI 三区)
- (6) Qi Ma, **JinPing Song\***(通讯作者), Yong Guo\*, Shao-Min Shuang, Chuan Dong, Controllable Assembly and Spectroscopic Behavior of Brilliant Cresyl Violet in different Environments, *Journal of Applied Spectroscopy*, 2017, 83(6): 1051-1060. (SCI 四区)
- (7) Jing Li, **Jinping Song**, Xiaomin Liang, Qi Ma\*, Lazhen Shen, Yong Guo, Feng Feng\*, A highly selective and sensitive fluorescence sensor for the detection of apigenin based on nitrogen doped carbon dots and its application in cell imaging, *Analytical. Methods*, 2017, 9: 6379–6385. (SCI 三区)
- (8) 杨捷, 许琳, **宋金萍**, 马琦\*, 微波法制备氮掺杂碳量子点及其在金属离子检测中的应用, *分析试验室*, 2017, 36(12): 1386-1389.
- (9) **Jinping Song**, Qi Ma\*, Sufang Zhang, Yong Guo, Chuan Dong. Preparation of Silver Nanoparticles Reduced by Formamidinesulfinic Acid and Its Application in

- Colorimetric Sensor, *Journal of Cluster Science*, 2016, 27: 1203-1212. (SCI 四区)
- (10) Qi Ma, **Jinping Song\***(通讯作者), Shangzhi Wang, Jie Yang, Yong Guo, Chuan Dong, A general sensing strategy for detection of Fe<sup>3+</sup> by using aminoacid-modified graphene quantum dots as fluorescent probe, *Applied Surface Science*, 2016, 389: 995-1002. (SCI 二区)
- (11) Qi Ma, **Jinping Song\***(通讯作者), Sufang Zhang, Meifang Wang, Yong Guo, Chuan Dong, Colorimetric detection of riboflavin by silver nanoparticles capped with  $\beta$ -cyclodextrin-grafted citrate, *Colloids and Surfaces B: Biointerfaces*, 2016, 148: 66-72. (SCI 二区)
- (12) Qi Ma, **Jin-ping Song\***, Feng Su, Jun-Mei Guo, Yong Guo, Chuan Dong. Structures and spectroscopic properties of Ni(II) and Mn(II) complexes based on 5-(3',5'-dicarboxylphenyl) picolinic acid ligand, *Journal of Molecular Structure*, 2016, 1111: 126-131. (SCI 四区)
- (13) 马琦, 李坤, 张素芳, **宋金萍**, 郭永, 董川, 核黄素在电化学还原石墨烯/Nafion 修饰电极上的电化学行为及分析检测, *分析科学学报*, 2016, 32(5): 705-708.
- (14) Ruiqi Zhu, **Jinping Song**, Qi Ma, Ying Zhou, Jun Yang Shaomin Shuang, Chuan Dong, A colorimetric probe for the detection of aluminum ions based on 11-mercaptoundecanoic acid functionalized gold nanoparticles, *Analytical Methods*, 2016, 8: 7232-7236. (SCI 三区)
- (15) **Jinping Song**, Qi Ma, Shaomin Shuang, Yong Guo, Chuan Dong. Self Assembly, Crystal Structure and Spectroscopy Properties of Two New Complexes with 1,10 phenanthroline 5,6 dione and SCN Ligands. *Russian Journal of Coordination Chemistry*, 2015, 41(7): 436-441. (SCI 四区)
- (16) **Jinping Song**, Qi Ma, Yong Guo, Chuan Dong. A simple and green approach for the preparation of chemical reduced graphene oxide by using guanidine hydrochloride. *中国科技论文在线*, 2015, 9: 1-5.
- (17) **Jinping Song**, Qi Ma, Shaomin Shuang, Yong Guo, Chuan Dong. Graphene/SnO<sub>2</sub>/Citric Acid Nanocomposites as the Excellent Sorbent for Removal of Crystal Violet and Methylene Blue. *Advanced Materials Research*, 2015, 1073-1076: 990-994.
- (18) Qi Ma, **Jinping Song\***(通讯作者), Shaomin Shuang, Yong Guo, Chuan Dong.

- Synthesis and characterization of graphene–Cu nanocomposites by one-pot solvothermal approach. *Applied Mechanics and Materials*, 2015, 723: 524-527.
- (19) 马琦, 张佳, 张慧, 汪梅芳, **宋金萍**, 郭永, 银纳米的制备及其对 L-谷氨酸的比色检测, *山西大同大学学报*, 2015, 31(6): 31-33.
- (20) **宋金萍**, 刘永文, 马琦, 郭永, 新型罗丹明衍生物荧光探针的合成及其对  $Al^{3+}$  离子的识别研究, *山西大同大学学报*, 2015, 31(1): 28-30.
- (21) **Jinping Song**, Pui Sai Lau, Meng Liu, Shaomin Shuang, Chuan Dong, Yingfu Li. A general strategy to create RNA aptamer sensors using “regulated” graphene oxide adsorption. *ACS Applied Materials & Interfaces*, 2014, 6: 21806-21812. (SCI 一区 Top 期刊)
- (22) Meng Liu, **Jinping Song**, Shaomin Shuang, Chuan Dong, John D. Brennan, Yingfu Li. A graphene-based biosensing platform based on the release of DNA probes and rolling circle amplification. *ACS Nano*, 2014, 8(6): 5564–5573. (SCI 一区 Top 期刊)
- (23) 马琦\*, **宋金萍**, 双少敏, 郭永, 董川\*, Luminol 在 GO (GN) /Nafion/GCE 上的电聚合, *吉首大学学报*, 2014, 35:74-77.
- (24) 李丽霞, 弓晓娟, **宋金萍**, 周叶红, 郭玉晶, 董川, 氧化石墨及石墨烯对阳离子染料的吸附行为研究, *科学学报*, 2014, 3: 323-326.
- (25) Qi Ma, **Jinping Song**, Chun Jin, Zuopeng Li, Jianhong Liu, Shuangming Meng, Jianguo Zhao, Yong Guo. A rapid and easy approach for the reduction of graphene oxide by formamidinesulfinic acid. *Carbon*, 2013, 54: 36-41. (SCI 一区 Top 期刊)
- (26) Jie Qiao, Yujin Guo, **Jinping Song**, Yongsheng Zhang, Tijing Sun, Shaomin Shuang, Chuan Dong. Synthesis of a palladium-graphene material and its application for formaldehyde determination. *Analytical Letters*, 2013, 46(9): 1454-1465. (SCI 四区)
- (27) **Jin-ping Song**, Jie Qiao, Shaomin Shuang, Yujing Guo and Chuan Dong. Synthesis of neutral red covalently functionalized graphene nanocomposite and the electrocatalytic properties toward uric acid. *Journal of Materials Chemistry*, 2012, 22: 602-608. (SCI 一区 Top 期刊)
- (28) **Jinping Song**, Hui Li, Jianbin Chao, Chuan Dong. Shaomin Shuang. Spectroscopic studies on the inclusion interaction of p-sulfonatocalix[6]arene with

- vitamin B<sub>6</sub>. *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, 2012, 72: 389-395. (SCI 四区)
- (29) Hui Li, **Jinping Song**, Jianbin Chao, Shaomin Shuang, Chuan Dong. Study on the inclusion behavior of p-sulfonatocalix[6]arene with propranolol by spectrofluorometry. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 2012, 97: 155-160. (SCI 二区)
- (30) **Jinping Song**, Yujing Guo, Qiang Zhao, Shaomin Shuang, Chuan Dong. Martin M.F. Choi, Assemblies of brilliant cresyl violet to DNA in the presence of  $\gamma$ -cyclodextrin. *Talanta*, 2010, 82: 681-686. (SCI 二区)
- (31) **Jinping Song**, Yujing Guo, Shaomin Shuang, Chuan Dong. Study on the inclusion interaction of ethyl violet with cyclodextrins by MWNTs/Nafion modified glassy carbon electrode. *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, 2010, 68: 467-473. (SCI 四区)
- (32) **Jinping Song**, Yujing Guo, Shaomin Shuang, Chuan Dong. Electrochemical behavior of brilliant cresyl violet at multi-wall carbon nanotubes/Nafion modified glassy carbon electrode and its interaction with cyclodextrins. *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, 2009, 64: 115-120. (SCI 四区)
- (33) **Jinping Song**, Yujing Guo, Shaomin Shuang, Chuan Dong. Study on the supramolecular systems of two basic violets with cyclodextrins by MWNTs/Nafion modified glassy carbon electrode. *Chinese Chemical Letters*, 2009, 20: 981-984. (SCI 四区)
- (34) Wenjuan Dong, **Jinping Song**, Chuan Dong, Martin M.F. Choi. Fluorescence quenching method for the determination of catechol with gold nanoparticles and tyrosinase hybrid system. *Chinese Chemical Letters*, 2010, 21(3): 346-348. (SCI 四区)
- (35) 薛科, **宋金萍**, 鞠东, 董川. 甲咪亚磺酸对活性艳红 M-3BE 的脱色效果. *应用化学(增刊)*, 2011, 28: 313-315.

#### 授权专利

- (1) **宋金萍**, 马琦, 刘慧君, 沈腊珍, 郭永, 冯峰, 氧化苏木精修饰石墨烯的制备方法, 中国发明专利, 授权专利号: ZL 2017 1 0792253.0.
- (2) **宋金萍**, 李忠平, 王丽华, 鞠东, 董川, 双少敏. 一种可显色褪色的儿童面

- 泥粉. 中国发明专利, 授权专利号: ZL 2010 1 0033348.2。
- (3) **宋金萍**, 张晓婷, 王毅, 董川, 双少敏. 一种具有指示功能的粘接剂. 中国发明专利, 授权专利号: ZL 2010 1 0163539.0。
  - (4) **宋金萍**, 卞伟, 鞠东, 董川, 双少敏. 活性染料微胶囊的制备方法. 中国发明专利, 授权专利号: ZL 2011 1 0024467.6。
  - (5) **宋金萍**, 马琦, 郭永, 一种酒精灯防风加热装置, 实用新型专利, 专利号: ZL 2015 2 0738868.1。
  - (6) **宋金萍**, 马琦, 郭永, 量筒放置架, 实用新型专利, 专利号: ZL 201520644366.2。
  - (7) **宋金萍**, 马琦, 郭永, 一种简易的容量瓶架, 实用新型专利, 专利号: ZL201520191822.2。
  - (8) **宋金萍**, 马琦, 郭永, 一种简易的实验室串联式水循环装置, 实用新型专利, 专利号: ZL 201520158511.6。
  - (9) 马琦, **宋金萍**, 郭永, 双少敏, 董川, 一种以盐酸胍为还原剂的石墨烯制备方法, 中国发明专利, 授权专利号: ZL201410490875.4。
  - (10) 梁中远, **宋金萍**, 董川, 双少敏, 一种具有指示功能的水性内墙涂料及其制备方法, 中国发明专利, 授权专利号: ZL 2015 1 0147612.8。

## 科研项目

- (1) 山西省自然科学基金, 金属配合物/石墨烯纳米复合材料用于免标记 DNA 电化学阻抗研究 (项目编号: 2015021049), 2015/5-2017/12, 3 万元, 主持。
- (2) 山西省高等学校科技创新项目, 金属配合物/石墨烯纳米复合材料用于免标记 DNA 电化学阻抗研究 (项目编号: 2015181), 2015/1-2018/1, 3 万元, 主持。
- (3) 山西省回国留学人员科研资助项目, 基于石墨烯/金纳米复合材料/金属配合物协同信号放大的 DNA 电化学阻抗传感器 (项目编号: 21016-105), 2016/6-2019/6, 3 万元, 主持。
- (4) 大同市科技攻关项目, 发光涂料的研发与应用 (项目编号: 2015019), 2015/10-2017/10, 5 万元, 主持。
- (5) 大同市重点研发项目, 一种可调谐碳点薄膜制备工艺研究 (项目编号: 2019027), 2019/8-2021/8, 5 万元, 主持。
- (6) 山西大同大学博士科研启动基金, 功能性石墨烯的制备及其对药物分子的检测 (项目编号: 2013-B-11), 10 万元, 主持。

## 2 教学成果

无

### 四、获奖情况

- (1) 荣获 2008 年度山西省科学技术奖二等奖，排名第六
- (2) 荣获 2008 年度山西省高等学校科技进步一等奖，排名第六
- (3) 荣获山西大同大学 2017 年度优秀班主任