

**宋秀峰**

**基本信息：**

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**主要研究方向：**

1. 二维晶体材料及器件；
2. 荧光转换材料；
3. 光电器件(LED,光电探测器)。

**学术成果：**

主要围绕**光电材料与器件**开展研究，取得一系列研究成果。

1. 开展了稀土离子（Eu2+，Ce3+）掺杂硅基氮化物荧光粉的研究，实现的光谱强度与波长的有效调控，揭示了其强度猝灭与光谱红移随激活离子浓度变化的偶极子-偶极子相互作用物理机制；通过多元共掺杂实现了氮化物荧光粉的多光谱出射与调控，揭示了在氮化物中稀土离子之间能量传递机制，并实现了光谱强度的有效增强与量子效率的提高。
2. 开发了基于陶瓷封装的大功率LED，通过调控芯片的排布方式和封装结构，采用新型荧光粉涂布技术、芯片固晶技术和高效散热基板基板，实现了色温、显色性及亮度可调的LED光源，获得了基于陶瓷基板封装的高效LED光源，并实现产业化。
3. 开展了陶瓷基板表面金属化的研究，获得氧化铝陶瓷基板表面敷铜技术，提出了陶瓷基板表面涂覆氧化亚铜并还原制备铜金属层的方法，揭示了陶瓷-金属界面共晶连接的作用机制，并且实现了工业化生产，同时此项技术应用于大功率LED封装与无线射频技术中。

**科研项目：**

5. 基于Zhaga标准的高效LED光引擎关键技术开发与产业化，“龙城英才计划”领军人才优先支持项目，2014.10，主持(在研)；

4. BN白石墨烯对LED异质结载流子输运的调控效应,中国博士后科学基金资助项目(2014M560425一等资助), 2014.9-2016,主持(在研)；

3. BN白石墨烯在LED异质结中的载流子调控效应，江苏省科技计划项目(青年基金 BK20140787)， 2014.7-2017.6，主持(在研)；

2. BN白石墨烯的制备及导电性能的调控，南京理工大学科研启动项目， 2013.3-2015.3，主持(在研)；

1. 白光LED用硅基氮氧化物荧光材料的光谱调控与光谱增强，江苏省博士后科研资助计划项目(1101139C)， 2011-2013，主持(结题)。

**受教育经历：**

**2005/09 – 2010/12**南京航空航天大学，材料加工工程, 博士；

**2001/09 – 2005/06**临沂师范学院，物理学, 学士。

**研究工作经历：**

**2013/03－**至今，南京理工大学，材料科学与工程学院，讲师；

**2011/01-2013/03**，南京航空航天大学-南京汉德森科技股份有限公司，博士后。

**审稿：**

**学术论文:**

 **2014**

29. Xiaoming Li, Yanli Liu, Xiufeng Song, Hao Wang, Haoshuang Gu, Haibo Zeng. Intercrossed Carbon Nanorings with Pure Surface States as Low-Cost and Environment-Friendly Phosphors for White-Light-Emitting Diodes. Angew. Chem. Int. Edit.. DOI: 10.1002/anie.201406836.(IF：11.336)

28. Y.S. Zou, H.P. Wang, S.L. Zhang, D. Lou, Y.H. Dong, X.F. Song, H.B. Zeng. Structural, electrical and optical properties of Mg-doped CuAlO2 films by pulsed laser deposition. RSC Adv. 4 (78), 2014, 41294-41300. (IF：3.708)

27. Y.S. Zou, Y.C. Zhang, D. Lou, H.P. Wang, L. Gu, Y.H. Dong, K. Dou, **X.F. Song**, H.B. Zeng. Structural and optical properties of WO3 films deposited by pulsed laser deposition. J. Alloys Compd. 583, 2014, 465-470.(IF：2.726)

**2013**

26. **X Song**, J Hu, H Zeng. Two-dimensional semiconductors: recent progress and future perspectives. J. Mater. Chem. C 1 (17), 2013, 2952-2969.

**2012**

25. H He, R Fu, F Qian, **X Song**. Luminescent properties of Li2CaSiO4: Eu2+ phosphor. J. Mater. Sci.: Mater. Electron. 23 (2), 2012, 599-604. (IF：1.486)

24. F Qian, R Fu, S Agathopoulos, X Gu, **X Song**. Synthesis and luminescence properties of a broad-band red phosphor Ca3Si2O7: Eu2+ for warm white light-emitting diodes. J. lumin., 132 (1), 2012, 71-75. (IF：2.144)

**2011**

23. R Li, R Fu, **X Song**, H He, X Yu, B He, Z Shi. Green emission from Tb-doped SrSi2O2N2 phosphors under ultraviolet light irradiation. J. Phys. Chem. Solids 72 (4), 2012, 233-235. (IF：1.381)

22. **X Song**, R Fu, S Agathopoulos, H He, X Zhao, X Yu. Synthesis of BaSi2O2N2:Ce3+,Eu2+ phosphors and determination of their luminescence properties. J. Am. Ceram. Soc., 94 (2), 2011, 501-507. (IF：2.272)

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21. R Fu, S Agathopoulos, **X Song**, X Zhao, H He, X Yu. Influence of energy transfer from Ce3+ to Eu2+ on luminescence properties of CaSi2O2N2:Ce3+, Eu2+ phosphors. Opt. Mater. 33 (1), 2010, 99-102. (IF：1.678)

20. H He, **XF Song**, RL Fu, Z Pan, X Zhao, Z Deng, Y Cao. Crystal structure and luminescence of Li2Ca0.7Sr0.3SiO4:Eu2+ and its application in multi-phosphor converted white LEDs. J. Alloys Compd., 493, 2010, 401-405. (IF：2.134)

19. H He, R Fu, X Zhao, **X Song**, Z Pan, S Zhang, Z Deng, Y Cao. Crystal Structure and Luminescent Properties of Eu2+-Doped Li2BaSiO4 with a Polymorph for White LEDs. Electrochem. Solid-State Lett. 13 (3), 2010, J21-J24. (IF：1.967)

18. H He, R Fu, **X Song**, R Li, Z Pan, X Zhao, Z Deng, Y Cao. Observation of Fluorescence and Phosphorescence in Ca2MgSi2O7: Eu2+, Dy3+ Phosphors. J. Electrochem. Soc., 157 (3), 2010, J69-J73(IF：2.42)

17. **X Song**, R Fu, S Agathopoulos, H He, X Zhao, R Li. Luminescence and Energy-Transfer Mechanism in SrSi2O2N2: Ce3+, Eu2+ Phosphors for White LEDs. J. Electrochem. Soc., 157 (2), 2010, J34-J38. (IF：2.42)

16 H He, R Fu, Y Cao, **X Song**, Z Pan, X Zhao, Q Xiao, R Li. Ce3+→Eu2+ energy transfer mechanism in the Li2SrSiO4: Eu2+, Ce3+ phosphor. Opt. Mater. 32 (5), 2010, 632-636. (IF：1.678)

**2009**

15. **X Song**, R Fu, H He. Frequency effects on the dielectric properties of AlN film deposited by radio frequency reactive magnetron sputtering. Microelectron. Eng., 86 (11), 2009, 2217-2221. (IF：1.488)

14. Z Pan, H He, R Fu, S Agathopoulos, **X Song**. Influence of Ba2+-doping on structural and luminescence properties of Sr2SiO4: Eu2+ phosphors. J. Lumin., 129 (9), 2009, 1105-1108 (IF：1.874)

13. **X Song**, R Fu, S Agathopoulos, H He, X Zhao, J Zeng. Luminescence and energy transfer of Mn2+co-doped SrSi2O2N2: Eu2+ green-emitting phosphors. Mater. Sci. Eng.: B, 164 (1), 2009, 12-15. (IF：1.577)

12. J Zeng, R Fu, Y Shen, H He, **X Song**. High thermal conductive epoxy molding compound with thermal conductive pathway. J. Appl. Polym. Sci., 113 (4), 2009, 2117-2125. (IF：1.187)

11. **X Song**, R Fu, S Agathopoulos, H He, X Zhao, S Zhang. Photoluminescence properties of Eu-activated CaSi2O2N2: Redshift and concentration quenching. J. Appl. Phys., 106, 2009, 033103 (IF：2.07)

10. H He, R Fu, X Zhang, **X Song**, X Zhao, Z Pan. Photoluminescence spectra tuning of Eu2+ activated orthosilicate phosphors used for white light emitting diodes. J. Mater. Sci.: Mater. Electron., 20 (5), 2009, 433-438(IF：1.019)

9. **X Song**, H He, R Fu, D Wang, X Zhao, Z Pan. Photoluminescent properties of SrSi2O2N2: Eu2+ phosphor: concentration related quenching and red shift behavior. J. Phys. D: Appl. Phys., 42 (6), 2009, 065409(IF：2.083)

8. J Zeng, R Fu, S Agathopoulos, S Zhang, **X Song**, H He. Numerical simulation of thermal conductivity of particle filled epoxy composites. J. Electronic Packaging, 131 (4), 2009, 041006.1-041006.7. (IF：0.781)

**2008**

7. H He, R Fu, H Wang, **X Song**, Z Pan, X Zhao, X Zhang, Y Cao. Li2SrSiO4: Eu2+ phosphor prepared by the Pechini method and its application in white light emitting diode. J. Mater. Res., 23 (12), 2008, 3288-3294.( IF：1.743)

6. **XF Song**, RL Fu, H He, DL Wang. Structure and Dielectric Properties of AlN Multilayered Film on Al Substrate. Key Eng. Mater., 368,2008, 1383-1385.

5. H He, RL Fu, **XF Song**, DL Wang. Luminescence Property of Eu2+ Doped Strontium Silicate Yellow Phosphor for White Light Emitting Diode. Key Eng. Mater., 368, 2008, 363-365.

4 H He, R Fu, **X Song**, D Wang, J Chen. White light-emitting Mg0.1Sr1.9SiO4: Eu2+ phosphors. J. Lumin., 128 (3), 2008, 489-493.( IF：1.628)

**2007**

1. H He, R Fu, Y Shen, Y Han, **X Song**. Preparation and properties of Si3N4/PS composites used for electronic packaging. Compos. Sci. Technol., 67 (11), 2007, 2493-2499. (IF：2.171)
2. H He, R Fu, D Wang, **X Song**, M Jing. A new method for preparation of direct bonding copper substrate on Al2O3. Mater. Lett., 61 (19), 2007, 4131-4133. (IF：1.625)

1. H He, R Fu, Y Han, Y Shen, **X Song**. Thermal conductivity of ceramic particle filled polymer composites and theoretical predictions. J. Mater. Sci., 42 (16), 2007, 6749-6754. (IF：1.081)

**专利:**

6. 朱正峰,邹友生,曾海波,**宋秀峰**.一种高纯和高结晶度的二硫化钛纳米片的制备方法.申请号: 201410232104.5,申请日:2014.05

5. **宋秀峰**,陆英艳,周鸣,刘乃涛,侯君凯,孙大兵.适用于LED照明的远程荧光体结构及其制备方法.申请号:201210198791.4,申请日:2012.06

4. **宋秀峰**,周鸣,刘乃涛,侯君凯,陆英艳.一种大功率LED封装的陶瓷基板的制备方法.申请号: 20110299348.1, 申请日:2011.10

3. 傅仁利,俞晓东,**宋秀峰**,井敏,李冉.一种基于电子浆料的敷铜陶瓷基板制造方法.申请号: 201010565232.3, 申请日:2010.11

2. 傅仁利,何洪,沈源,**宋秀峰**.具有导热路径的高导热环氧模塑料的制造方法.申请号:200710191000.4,申请日:2007.12

1. 傅仁利,李克,鞠生宏,何洪,沈源,**宋秀峰**.双热流计稳态法材料热导率测量方法.申请号: 200710132647.X,申请日:2007.9

Xiufeng Song

Lecture

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**Research Interests**

1. Two-dimensional crystal materials and devices;

2. Luminescence materials;

3. Optoelectronic devices (LED, photodetects).

**Education & Experience**

Dr. Xiufeng Song received his Ph. D degree from Nanjing University of Aeronautics and Astronautics in 2010. He worked as a postdoctoral researcher at Nanjing University of Aeronautics and Astronautics, and Nanjing Handson Co. Ltd..

He current works in Nanjing University of Science and Technology as a Lecture.

**Publications**

**2014**

27. Y.S. Zou, Y.C. Zhang, D. Lou, H.P. Wang, L. Gu, Y.H. Dong, K. Dou, **X.F. Song**, H.B. Zeng. Structural and optical properties of WO3 films deposited by pulsed laser deposition. J. Alloys Compd. 583, 2014, 465-470.(IF：2.726)

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