

姜年权简介



一、个人基本情况:

姓名: 姜年权

性别: 男

职称职务: 教授、硕士生导师

最后学历、学位: 博士

通信地址: 温州大学数理与电子信息工程学院

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二、从事研究的专业领域及主要研究方向

研究的专业领域: 量子信息, 新能源, 超导理论

主要研究方向: 目前主要从事的研究有: 1. 通用量子计算机中央处理器的研究; 2. 新能源研究, 从全新的途径探究优于当前人们所熟知的各种新能源的能源利用方式; 3. 超导理论研究, 探究超导现象的根本机制及其理论。

三、主要工作经历及业绩

本人 2004 年于中科大博士毕业, 在 J. Phys. Chem. C, Electrochimica Acta, Phys. Rev. A, EPL 等知名期刊发表论文 80 余篇。主持及参与国家自然科学基金项目 4 项 (其中主持 2 项), 参与国家 863 计划项目 1 项, 参与浙江省自然科学基金项目 1 项, 主持温州市科技计划项目 1 项。获浙江省高等学校科研成果奖一次。是多家国际期刊审稿人。

主要经历如下:

2015 年 01 月~至今

温州大学

教授

2013 年 12 月~2014 年 12 月

英国 University College London 访问学者

2013 年 11 月~2013 年 12 月

温州大学

教授

2004年08月~2013年12月	温州大学	副教授
2004年06月~2004年08月	中国科技大学	留校任教
2000年09月~2004年06月	中国科技大学	硕、博士研究生

四、近年主持的主要科研教学项目

1. 1/6, 量子态表象变换中的经典变换及其应用的研究 (10947017/A05), 国家自然科学基金, 14 万元, 2010 01 —2012 12;
2. 5/25, 染料敏化太阳能电池成套关键技术研发 (2009AA050603), 国家高技术研究发展计划 (863 计划), 964 万元, 2009 01 —2011 12;
3. 1/1, 博士研究生启动基金(10447128), 国家自然科学基金, 2 万元, 2005 01 —2005 12;
4. 30/30, 大面积低价长寿命太阳能电池关键科学和技术问题的基础研究 (2006CB202600), 国家重点基础研究发展计划 (973 计划), 1690 万元, 2008 01 —2010 08;
5. 1/10, 高效低价太阳能电池电极的研究 (G20080046), 温州市科技计划项目, 10 万元, 2008 01 —2010 06;
6. 1/1, 染料敏化太阳能电池电子输运特性的研究 (KF200912), 中国科学院重点实验室开放课题, 2 万元, 2009 11 —2011 11;
7. 2/7, 基于光子回声技术的光量子信息固态存储研究 (11074190), 国家自然科学基金, 38 万元, 2011 01 —2013 12;
8. 3/7, 宽波段高效率深刻蚀圆形聚焦光栅及其在太阳能电池中的应用研究 (F050202), 国家自然科学基金, 83 万元, 2014 01-2017 12;
9. 2/7, 利用光子回声技术进行光量子信息固态存储的研究 (Y6090529), 浙江省自然科学基金, 5 万元, 2010 01 —2011 12;
10. 1/7 《高等量子力学》教学模式改革与实践, 温州大学学位与研究生教育教改项目研究经费, 0.8 万元, 2008 12 —2010 12;
11. 3/6, 原子频率梳光子回声技术的研究 (Y12A050015), 8 万元, 2012 01-2013 12;
12. 1/1, 新型太阳能高效转化纳米无机结材料及其在杂化太阳能电池中的应用 (Z20140422), 浙江省引进外国专家项目, 5 万元, 2014 01-2016 12。

五、主要学术研究论文:

(*为通讯作者)

1. Yang-Qing Guo (郭羊青), Nian-Quan Jiang(姜年权)*, Controllably Coupling Superconducting Charge and Flux Qubits by Using Nanomechanical Resonator, *Chin. Phys. Lett.* 2017, 34 (5), 050302
2. Chunming Sun, Xiaodong Li, Guojie Wang, Pandeng Li, Wenjun Zhang, Tonggang Jiu, Nianquan Jiang* and Junfeng Fang, Highly efficient inverted polymer solar cells using fullerene derivative modified TiO₂ nanorods as the buffer layer, *RSC Adv.*, 2014,4, 19529-19532, DOI: 10.1039/C4RA02254H
3. Yanbo Guo, Guozhong Wang, Nianquan Jiang*, Generating χ -Type Four-Qubit Entangled States in Superconducting Transmon Qubit System, *International Journal of Theoretical Physics*, 2014, 53(9), 3135-3141, DOI: 10.1007/s10773-014-2110-0
4. Chunming Sun, Yulei Wu, Wenjun Zhang, Nianquan Jiang, Tonggang Jiu, and Junfeng Fang, Improving Efficiency by Hybrid TiO₂ Nanorods with 1,10-Phenanthroline as A Cathode Buffer Layer for Inverted Organic Solar Cells, *ACS Appl. Mater. Interfaces*, 2014, 6 (2), pp 739–744, DOI: 10.1021/am404423k
5. 李毅,寇东星,戴松元,姜年权*, 染料敏化太阳能电池中TiO₂薄膜微结构相关动力学研究, *太阳能学报.* 2014, 35 (1): 139-144
6. 赵英燕,高贵龙,唐龙英,姜年权*,基于电路量子电动力学系统实现一维cluster态的制备, *量子光学学报*, 2014年第20卷第1期 pp.46-50
7. Zhao Ying-Yan and Jiang Nian-Quan*, Mesoscopic entangled coherent states implemented with a circuit quantum electrodynamics system, *Chin. Phys. B Vol.* 22, No. 5 (2013) 050308
8. 赵英燕,王辉,陈娟,姜年权*,最优1→3对称型经济实态量子克隆的固态电路实现方案, *温州大学学报(自然科学版)*.2013年第 34 卷第 4 期 pp. 24-30
9. GAO Gui-Long, SONG Fu-Quan, HUANG Shou-Sheng, WANG Yan-Wei, FAN Zhi-Qiang, YUAN Xian-Zhang, JIANG Nian-Quan*, Producing and Distinguishing X-Type Four-Qubit States in Flux Qubits, *CHIN. PHYS. LETT.* Vol. 29, No. 4 (2012) 044214
10. Gao Gui-Long, Song Fu-Quan, Huang Shou-Sheng, Wang Hui, Yuan Xian-Zhang, Wang Ming-Feng, and Jiang Nian-Quan*, A simple scheme to generate X -type four-charge entangled states in circuit QED, *Chin. Phys. B Vol.* 21, No. 4 (2012) 044209
11. GAO Gui-Long, CAI Gen-Chang, HUANG Shou-Sheng, WANG Ming-Feng, and JIANG Nian-Quan*, One-Step Generation of Multi-Qubit GHZ and W States in Superconducting Transmon Qubit System, *Commun. Theor. Phys.* 57 (2012) 205-208
12. Zhi-song Yu, Gui-hua Ren, Hong-yi Fan, Gen-Chang Cai, Nian-Quan Jiang*, Fock-Space Projector Studied in Weyl Ordering Approach, *Int J Theor Phys* (2012) 51:2256–2261
13. Ying-Yan Zhao, Nian-Quan Jiang*, Generating mesoscopic entanglement of

coherence and squeezed states in circuit QED system, *Physics Letters A* 376 (2012) 3654-3657

14. 黄寿胜,薛丽,姜年权*,在腔 Q E D 中制备四原子的 $|D_4^{(2)}\rangle$ 态, *量子光学学报*, 18 (3): 241-245, 2012
15. 王利军, 陈双宏, 黄阳, 翁坚, 戴松元, 姜年权*, 染料敏化太阳电池中银电极性能的研究, *太阳能学报*, 33 (7): 1178-1181, 2012
16. Chen Jun-Hua, Fan Hong-Y, and Jiang Nian-Quan, Long-time limit behavior of the solution to an atom's master equation, *Chin. Phys. B* Vol. 21, No. 8 (2012) 083201
17. Gao GuiLong, Cai GenChang, Huang ShouSheng, Tang LongYing, Gu WenJing, Wang MingFeng and Jiang NianQuan*, 1→N quantum controlled phase gate realized in a circuit QED system, *Science China Physics, Mechanics and Astronomy*, 2012, Volume 55, Issue 8, pp 1422-1426
18. Nian-quan Jiang, Hong-yi Fan, Shuai Wang, Jun-hua Chen, Long-Ying Tang, Wen-Jing Gu, Gen-Chang Cai, Virial Theorem for Angular Displacement and Torque, *Int J Theor Phys* (2011) 50:3610–3615
19. Jiang Nian-Quan, Fan Hong-Yi, Xi Liu-Sheng, Tang Long-Ying, and Yuan Xian-Zhang, Evolution of a two-mode squeezed vacuum in the amplitude dissipative channel, *Chin. Phys. B* Vol. 20, No. 12 (2011) 120302
20. Gui-Long Gao, Liusheng Xi, Guoliang Gao, Jianping Zhong, Nian-Quan Jiang*, Preparing arbitrary mode superconducting LC entangled coherent state via a superconducting charge qubit, *Physics Letters A*, 375 (2011) 3946–3949
21. FAN HongYi, YUAN Hong Chun and JIANG NianQuan*, New identities about operator Hermite polynomials and their related, *Science China Physics, Mechanics and Astronomy*, 2011 Vol. 54 No. 12: 2145–2149
22. 陈双宏, 翁坚, 王利军, 张昌能, 黄阳, 姜年权, 戴松元, 负偏压作用下染料敏化太阳电池界面及光电性能研究, *物理学报*, Vol. 60, No. 12 (2011) 128404
23. Hong-Yi Fan, Hong-Chun Yuan, Xue-Xiang Xu and Nian-Quan Jiang*, New approach for obtaining the squeezing-enhanced state and its Wigner function by virtue of the Weyl–Wigner quantization scheme, *Phys. Scr.* 83 (2011) 015403
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26. Xue Li, Huang Shou-Sheng, Wu Lie, Ji Yong-Yun, and Jiang Nian-Quan*, Scheme to generate and discriminate a type of multipartite maximally entangled states in ion-trap, *Chin. Phys. B* 20 (2011) 050313
27. Li Xue, Lie Wu, Gen-Chang Cai and Nian-Quan Jiang*, Maximal entangled four-qubit state and its preparation in cavity QED system, *International Journal of*

- Quantum Information, 9(3) (2011) 875
28. Peng xu, Lie wu and Nian-quan jiang*, Realization of $1 \rightarrow n$ controlled phase gate in cavity QED, International Journal of Quantum Information, 9(2) (2011) 773-778
 29. XUE Li and JIANG Nian-Quan*, Implementing 1-M Economical Phase-Covariant Telecloning in Cavity QED, Commun. Theor. Phys. 55 (2011) 441–444
 30. FAN Hong-Yi and JIANG Nian-Quan*, Quantum Mechanical Correspondence of Poisson Integral Formula, Commun. Theor. Phys. 55 (2011) 217 – 220
 31. Nian-Quan Jiang, Hong-Yi Fan and Li-yun Hu, Evolution of chaotic field in laser process: Evolution law of density operator and photon number decay, J. Phys. A: Math. Theor. 44 (2011) 195302
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 33. Yong He and Nian-Quan Jiang*, Yong-Yun Ji, One-dimensional cluster state generated in one step via one cavity, Optics Communications, 283 (2010) 1979
 34. Yong He and Nian-Quan Jiang*, Schemes to generate and distinguish a type of genuine four-qubit entangled states in a cavity QED system, Optics Communications, 283 (2010) 1558
 35. Dong-Xing Kou, Wei-Qing Liu, Lin-Hua Hu, Song-Yuan Dai and Nian-Quan Jiang*, The investigation on the mechanism of enhanced performance of dye-sensitized solar cells after anode modified, Acta Phys. Sin, 59 (2010) 5857
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 41. Hong-Yi Fan and Nian-Quan Jiang*, Energy average formula of photon gas rederived by using the generalised Hermann–Feynman theorem, Chin. Phys. B, 19 (2010) 090301
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- for atomic qubit systems, *Chin. Phys. B*, 19 (2010) 090310
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 45. Hong-Yi Fan and Nian-Quan Jiang*, New Approach for Normalizing Photon-Added and Photon-Subtracted Squeezed States, *Chin. Phys. Lett.*, 27 (2010) 044206
 46. Hong-Yi Fan and Nian-Quan Jiang*, Quantum Mechanical Version for Bessel Beam's Propagation in ABCD Optical System, *Commun. Theor. Phys.*, 53 (2010) 473
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 49. Hong-yi Fan and Nian-quan Jiang*, Entangled state representation for describing both squeezing and entanglement involved in the parametric down-conversion process, *Phys. Scr.* 82 (2010) 055403
 50. Weiqing Liu, Dongxing Kou, Molang Cai, Linhua Hu, Jiang Sheng, Huajun Tian, Nianquan Jiang*, and Songyuan Dai, The Intrinsic Relation between the Dynamic Response and Surface Passivation in Dye-Sensitized Solar Cells Based on Different Electrolytes, *J. Phys. Chem. C*, 114 (2010) 9965
 51. 许朋, 薛丽, 何勇, 姜年权*, 两体纠缠态的应用, *温州大学学报 (自然科学版)* 第31卷 第2期 20-25页 2010
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 53. Hong-yi Fan and Nian-Quan Jiang*, Phase Operator and Phase State in Thermo Field Dynamics, *Mod. Phys. Lett. A*, 24 (2009) 1219
 54. 霍志鹏, 戴松元, 张昌能, 刘伟庆, 方霞琴, 蔡墨朗, 郭磊, 王孔嘉, 姜年权, 郑亦庄, 四(十二烷基)氯化氨基小分子凝胶电解质染料敏化太阳电池, *高等学校化学学报*, 30 (2009) 1214
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- Gained via Tripartite Entangled State Representation, *Commun. Theor. Phys.*, 49 (2008) 225
59. Hong-yi Fan and Nian-Quan Jiang*, Thermo Wigner operator in thermo field dynamics: its introduction and application, *Phys.Scr.*, 78 (2008) 045402
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 61. 张毅 姜年权*, EPR型连续变量纠缠态的正规乘积方法求解, *大学物理*, 27 (2008) 3
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六 、 指导研究生，本科生情况

目前指导在读硕士研究生4名，毕业硕士研究生15名，毕业硕士生考取一流大学或中科院博士研究生8名。研究生发表SCI论文20余篇，获浙江省优秀毕业生多名。