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发布者: 邓士豪 发布时间: 2019-09-05 浏览次数: 12594



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个人简介|Biography:

刘向军, 现是东华大学机械工程学院研究员、博士生导师, 微纳机电系统研究所所长。2009年获新加坡南洋理工大学及数据存储研究院理学博士学位。曾先后任日本日立研发中心研究员(2009-2010); 加拿大阿尔伯塔大学国家纳米研究院博士后研究员(2010-2012); 新加坡科技局高性能计算研究院科学家(2012-2019)。

Dr Liu is currently a research professor in the College of Mechanical Engineering, and director of Institute of Micro/Nano Electromechanical System at Donghua University (DHU). He received his Ph.D. degree from Nanyang Technological University and Data Storage Institute, Singapore in 2009. Prior to joining DHU, he worked as Researcher in Hitachi R&D Centre (2009-2010), Post-doctoral Research Fellow in National Institute for Nanotechnology at University of Alberta, Canada (2010-2012), and Scientist in Institute of High Performance Computing, A*STAR, Singapore (2012-2019).

研究方向|Research Areas:

微结构物性调控 |Micro-structure properties
微纳机电系统工程| Micro/Nano electromechanical system
微器件热扩散管理|Thermal management in micro-devices

获奖与项目|Awards and Projects:

2019上海市海外高层次人才(引进) |High-level talents from overseas in Shanghai
2020上海市高层次人才计划(海外) | High-level Talents-Plan in Shanghai
2021上海市首届“探索者计划”项目 |Research Fund from “Explorer Plan” in Shanghai: 功率芯片能量运输机理和高导低阻热界面材料的研究
2021国家自然科学基金“外国优秀青年学者”项目 |Research Fund for International Excellent Young Scientists

主讲课程|Courses

工程导论 |Introduction to Engineering
微纳米结构与系统物理基础(全英文) |Micro/Nano Structures and Systems: Basic Principles

近期发表论文|Publications:

- Liu, X.; Yu, Z.; Zhang, G.; Zhang, Y.-W. Remarkably high thermal-driven MoS₂ grain boundary migration mobility and its implications on defect healing. *Nanoscale*, 2020, 12, 17746.
- Liu, X.; Gao, J.; Zhang, G.; Zhao, J.; Zhang, Y.-W. The Remarkable role of grain boundaries in the thermal transport properties of phosphorene. *ACS Omega*, 2020, 5, 17416.
- Ren, K.; Liu, X.; Chen, S.; Cheng, Y.; Tang, W.; Zhang, G. Remarkable reduction of interfacial thermal resistance in nanophononic heterostructures. *Advanced Functional Materials* 2020, 2004003
- Zhao, Y.; Liu, X.; Rath, A.; Wu, J.; Li, B.; Zhou, W.; Xie, G.; Zhang, G.; Thong, J. T. L. Probing thermal transport across amorphous region embedded in a single crystalline silicon nanowire. *Scientific Reports*, 2020, 10, 821.
- Liu X., Zhou H., Zhang, G., Zhang Y.-W.** The effects of curvature on the thermal conduction of bent silicon nanowire. *Journal of Applied Physics* 2019, 125, 082525.
- Liu X., Gao J., Zhang, G., Zhang Y.-W.** Design of phosphorene/graphene heterojunctions for high and tunable interfacial thermal conductance. *Nanoscale* 2018, 10, 19854.
- Liu X., Zhang Y.-W.** Thermal properties of transition-metal dichalcogenide. *Chinese Physics B* 2018, 27, 034402.
- Liu X., Gao J., Zhang, G., Zhang Y.-W.** Unusual twisting phonons and breathing modes in tube-terminated phosphorene nanoribbons and their effects on thermal conductivity. *Advanced Functional Materials* 2017, 27, 1702776.
- Liu X., Gao J., Zhang, G., Zhang Y.-W.** MoS₂-graphene in-plane contact for high interfacial thermal conduction. *Nano Research*, 2017, 10, 2944.
- Liu X., Zhang, G., Zhang Y.-W.** Topological defects at the graphene/h-BN interface abnormally enhance its thermal conductance. *Nano Letters* 2016, 16(8), 4954.
- Liu X., Zhang, G., Zhang Y.-W.** Thermal conduction across one-dimensional interface between MoS₂ monolayer and metal electrode. *Nano Research* 2016, 9, 2372.
- Liu X., Zhang, G., Zhang Y.-W.** Surface morphology and strain coupling effects on phonon transport in silicon nanowires. *Materials Today: Proceedings* 2016, 3, 2759.
- Gao, J., **Liu, X.**, Zhang, G., Zhang, Y.-W. Nanotube-terminated zigzag edges of phosphorene formed by self-rolling reconstruction. *Nanoscale*, 2016, 8(41), 17940.
- Liu X., Zhang, G., Zhang Y.-W.** Graphene-based thermal modulators. *Nano Research* 2015, 8, 2755.

- Liu X., Zhang, G., Zhang Y.-W. Surface-engineered nanoscale diamond films enable remarkable enhancement in thermal conductivity and anisotropy. **CARBON** **2015**, **94**, 760.
- Liu X., Zhang, G., Zhang Y.-W. Tunable Mechanical and Thermal Properties of One-Dimensional Carbyne Chain: Phase Transition and Microscopic Dynamics. **Journal of Physical Chemistry C** **2015**, **119**(42), 24156–24164.
- Guo T., Sha Z.-D., Liu X., Zhang G., Guo T., Pei Q.-X., Zhang Y.-W. Tuning the thermal conductivity of multi-layer graphene with interlayer bonding and tensile strain. **Applied Physics A** **2015**, **120**, 1275.
- Liu X., Zhang, G., Zhang Y.-W. Thermal conduction across graphene cross-linkers. **Journal of Physical Chemistry C** **2014**, **118**, 12541.
- Liu X., Zhang, G., Pei Q.-X., Zhang Y.-W. Modulating the thermal conductivity of silicon nanowires via surface amorphization. **Science China: Technological Science** **2014**, **57**, 699–705.
- Wu P. H., Quek S. S., Sha Z. D., Dong Z. L., Liu X. J., Zhang G., Pei Q. X., Zhang Y. W. Thermal transport behavior of polycrystalline graphene: A molecular dynamics study. **Journal of Applied Physics** **2014**, **116**, 204303.
- Liu X., Zhang, G., Pei Q.-X., Zhang Y.-W. Phonon thermal conductivity of monolayer MoS₂ sheet and nanoribbons. **Applied Physics Letters** **2013**, **103**, 133113.
- Kovalenko, A.; Kobryn, A.; Gusarov, S.; Lyubimova, O.; Liu, X.; Blinov, N.; Yoshida, M. Molecular theory of solvation for supramolecules and soft matter structures: application to ligand binding, ion channels, and oligomeric polyelectrolyte gelators. **Soft Matter** **2012**, **8**, 1508–1520.
- Liu, X.; Lyubimova, O.; Kobryn, A. E.; Gusarov, S.; Kovalenko, A. Mesoscopic study of dynamics and gelation ability of oligomeric electrolyte gelator with dissipative particle dynamics. **Procedia Computer Science** **2011**, **4**, 1031–1038.
- Lyubimova, O.; Liu, X.; Gusarov, S.; Kobryn, A. E.; Kovalenko, A. Solvation structure and gelation ability of polyelectrolytes: predictions by quantum chemistry methods and integral equation theory of molecular liquids. **Procedia Computer Science** **2011**, **4**, 1186–1192.
- Liu, X.; Amemiya, K.; Wong, C.H.; Yu, S. K.; Liu, B. Molecular dynamics study of dynamic behavior between head and ultrathin lubricant film. **Journal of Advanced Mechanical Design, System, and Manufacturing** **2010**, **4**, 56–60.
- Liu, X.; Yang, Y.W.; Yang, J.P. Direct simulation Monte Carlo on thermal distribution of rarefied gas under heated atomic force microscope nanoprobe. **Journal of Applied Physics** **2009**, **105**, 013508.
- Liu, X.; Yang, J.P.; Yang, Y.W. Heat conduction analysis of nano-tip and storage medium in thermal-assisted data storage using molecular dynamics simulation. **Molecular Simulation** **2008**, **34**, 57–63.
- Yang, Y.W.; Liu, X.; Yang, J.P. Nonequilibrium molecular dynamics simulation for size effects on thermal conductivity of Si nanostructures. **Molecular Simulation** **2008**, **34**, 51–56.

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