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李士本（博士，教授）

教育背景

1997 年 9 月 -2003 年 3 月　**博士研究生，**浙江大学物理学系，理学博士

1990 年 9 月 -1994 年 7 月　**本科生，**兰州大学现代物理系，理学学士

经历

工作经历

2019 年 07 月 -现在　**教授、硕士生导师，**　温州大学数理学院

2019 年 01 月 -2019 年 06 月　**教授、硕士生导师，**　温州大学数电学院

2018 年 12 月 -2003 年 03 月　**讲师、副教授、教授，**温州大学物电学院

学术交流

2011 年 12 月 -2012 年 08 月　**访问学者，**加拿大滑铁卢大学物理系

2005 年 04 月 -2007 年 04 月　**博士后，**浙江大学理学院

教学经历

近三年讲授主要课程

力学(本科生课程)　　理论力学(本科生课程)

高分子物理(研究生课程)　自然科学与人类(研究生课程)

研究领域

从事软物质理论与计算机模拟研究，采用分子动力学模拟、机器学习、自洽平均场理论等方法研究生物大分子、嵌段聚合物等软物质在外环境下的构象和物理响应。目前关注核酸等生物大分子在各种环境下的构象和力学性质。

代表性学术论文

[23]Kai Liu, Xuankang Mou, and **Shiben Li***, Stretching and twisting of double-stranded RNA under forces: Unwinding mechanism and base-pair dependent elasticity, *J. Chem. Phys.* DOI: 10.1063/5.0245191, **2025**.

[22]Tingting Liu, Kai Liu, Xuankang Mou, and **Shiben Li***, Temperature-induced swelling and unwinding of double-stranded DNA, *Phys. Chem. Chem. Phys.*, 27, 4129, **2025.**

[21]Cheng Zhang, Zhenguo Wang, Xianghong Wang*, Xuankang Mou, and **Shiben Li***, Influence of nanoparticles on cylinder-forming linear triblock copolymers, *Polymer*, 312, 127664, **2024**.

[20]Xuankang Mou, Kai Liu, Linli He, and **Shiben Li***, Mechanical response of double-stranded DNA: Bend, twist and overwind, *J. Chem. Phys.* 161, 085102, **2024**.

[19]Zihao Zhang, Xuankang Mou, Yahong Zhang, Linli He and **Shiben Li***, Influence of temperature on bend, twist and twist-bend coupling of dsDNA, *Phys. Chem. Chem. Phys.* 26, 8077, **2024**.

[18]Yahong Zhang, Linli He, and **Shiben Li***, Temperature dependence of DNA elasticity: An all-atom molecular dynamics simulation study, *J. Chem. Phys.* 158, 094902, **2023**.

[17]Jie Huang, Gang Huang*, and **Shiben Li***, A machine learning model to classify dynamic processes in liquid water, *ChemPhysChem.* 23, 42-49, **2022**. (selected as Front Cover, *ChemPhysChem*,**1/2022**, and Cover Profile, *ChemPhysChem*, 23, e202100867, **2022**).

[16]Jie Huang, **Shiben Li***, Xinghua Zhang*, and Gang Huang, Neural network model for structure factor of polymer systems, *J. Chem. Phys.* 153,124902, **2020**.

[15]Yue Shan, Xianghong Wang, Yongyun Ji, Linli He, and **Shiben Li***, Self-assembly of phospholipid molecules in solutions under shear flows: Microstructures and phase diagrams, *J. Chem. Phys.* 149, 244901, **2018**.

[14] Zhiyuan Wang, Xianghong Wang, Yongyun Ji, Xiaowei Qiang, Linli He, and **Shiben Li***, Bottlebrush block polymers in solutions: Self-assembled microstructures and interactions with lipid membranes, *Polymer*, 140, 304-304, **2018**.

[13] Xiaowei Qiang, Xianghong Wang, Yongyun Ji, **Shiben Li***, and Linli He*，Liquid-crystal self-assembly of lipid membranes on solutions: A dissipative particle dynamic simulation study, *Polymer*, 115, 1-11, **2017**.

[12] **Shiben Li***, Ying Jiang*, and Jeff Z. Y. Chen*, Complex liquid-crystal nanostructures in semiflexible ABC linear triblock copolymers: A self-consistent field theory, *J. Chem. Phys.*, 145, 184902, **2016**.

[11] Zhaoyan Lv, Ji Wu, Yongyun Ji, **Shiben Li***, and Xianghong Wang *, Morphologies and phase diagrams of ABC star triblock copolymers in cylindrical nanotubes with homogenous and patterned surfaces, *Polymer*, 95, 62-76, **2016**.

[10] Ji Wu, Xianghong Wang, Yongyun Ji, Linli He, and **Shiben Li***, Phase diagrams of diblock copolymers in electric fields: a self-consistent field theory study, *Phys. Chem. Chem. Phys.*, 18, 10309-10319, **2016**.

[9] **Shiben Li**, Ying Jiang*, and Jeff Z. Y. Chen, Phase transitions in semiflexible-rod diblock copolymers: a self-consistent field theory, *Soft Matter*, 10, 8932-8944, **2014**.

[8] **Shiben Li**, Ying Jiang, Yongyun Ji, and Xianghong Wang*, Electric-field-induced sphere-cylinder phase transitions of diblock copolymers, *Polymer*, 54, 6636-6643, **2013**.

[7] **Shiben Li***, Ying Jiang, and Jeff. Z. Y. Chen, Morphologies and phase diagrams of ABC star triblock copolymers confined in a spherical cavity, *Soft Matter*, 9, 4843-4854, **2013**.

[6] Wenjuan Qiu, Linli He, Yongyun Ji, Xianghong Wang, and **Shiben Li***, Phase diagrams of ABC linear triblock copolymers under nanopore confinements, *Polymer*, 53, 3392-3402, **2012**.

[5] **Shiben Li***, Wenjuan Qiu, Linxi Zhang, and Haojun Liang, Nanostructures and phase diagrams of ABC star triblock copolymers in pore geometries, *J. Chem. Phys.*, 136, 124906, **2012**.

[4] **Shiben Li***, Peng Chen, Linxi Zhang, and Haojun Liang, Geometric frustration phases of diblock copolymers in nanoparticles, *Langmuir*, 27, 5081-5089, **2011**.

[3] **Shiben Li***, Yongyun Ji, Peng Chen, Linxi Zhang, and Haojun Liang, Surface-induced phase transitions in dense nanoparticle arrays of lamella-forming diblock copolymers, *Polymer*, 51, 4994-5001, **2010**.

[2] **Shiben Li**, Peng Chen, Xianghong Wang, Linxi Zhang*, and Haojun Liang, Surface-induced morphologies of lamella-forming diblock copolymers, confined in nanorod arrays, *J. Chem. Phys.*, 130, 014902, **2009**.

[1] **Shiben Li***, Xianghong Wang, Linxi Zhang*, Haojun Liang, and Peng Chen, Concentric lamella structures of symmetric diblock copolymers confined, in cylindrical nanopores, *Polymer*, 50, 5149-5157, **2009**.

指导硕士生

已毕业硕士研究生 18 人，其中考取复旦大学、南开大学、武汉大学、南京大学、芬兰 Aalto 大学等博士研究生 9 人，毕业研究生中获浙江省优秀毕业研究生 2 人、浙江省优秀硕士论文 1 人、研究生国家奖学金 5 人、谷超豪奖学金 1 人。截止至 2025 年 3 月，在读物理学学术型硕士研究生 6 人。欢迎对本领域感兴趣的同学加入课题组。

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