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WORK EXPERIENCE:

05/2020 – now: **Postdoctoral Fellow**, Department of Polymer Science and Engineering,
Zhejiang University

03/2018 – 04/2020: **R & D Engineer**, Hangzhou Gaoxi Technology Co., Ltd.

EDUCATION:

09/2012.9-03/2018: **Ph.D.** in Department of Polymer Science and Engineering, Zhejiang
University, Advisor: Prof. **Chao Gao**

11/2016-05/2017: **Ph.D.** in Center for Multidimensional Carbon Materials (CMCM), Institute for
Basic Science (IBS), Advisor: Prof. **Rodney S. Ruoff**

09/2008-06/2012: **B.S.** in Polymer Material and Engineering, Qingdao University of Science and
Technology, Advisor: Prof. **Wenjun Yang**

AWARDS AND HONORS:

- 06/2012 Outstanding Graduates of Qingdao University of Science and Technology
- 09/2012 PhD Scholarship from Zhejiang University, Excellent Graduate Students
- 09/2014 Scholarship from Zhongtian Technology, Excellent Graduate Students
- 09/2015 National Graduate Scholarship (Ranking No.1 among Doctors), Excellent Graduate Students
- 12/2015 First Prize of Zhejiang Chemical Society Innovation Award (Ranking No.1)
- 09/2016 Top Ten Academic Achievements of Zhejiang University

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- 09/2017 Da Sannong Scholarship, Excellent Graduate Students, Excellent doctoral dissertation funding
- 03/2018 Outstanding Graduates of Zhejiang Province
- 05/2020 Special funding for high level postdoctoral fellows of Zhejiang University
- 10/2020 China Postdoctoral Science Foundation

RESEARCH INTERESTS:

1. Preparation of 2D bulk nanofilm.

- a, Large area graphite nanofilm with high crystallinity.
- b, Large area graphene nanofilm with high in-plane crystallinity and controlled out-plane stacking order.
- c, Large area heterojunction nanofilm.

2. Mid-Infrared detector and meta-surface.

- a, Room temperature ultra-fast mid-Infrared photodetectors.
- b, Graphene based mid-Infrared meta-surfaces.
- c, Relationship between stacking order and plasmonic effect in Mid-Infrared meta-surfaces.

3. THz sensor and detector.

- a, MAG based meta-surface in THz bio-sensor with a good adjustability (from insulator to metal-like conductor) and ultra-low minimum sensitivity, two orders lower than that of metal.
- b, Defective-MAG (from graphene oxide or lignin)/PI/SLG based THz absorber for real-time monitoring bio-sensor.
- c, Mxene/PI/SLG based THz absorber with broad band linear detection concentration.
- d, Molecular selectivity of THz bio-sensor.
- e, Bulk graphene nanofilm-based THz photo-detector.

4. Mechanical, thermal, and thermoelectric behaviors of 2D bulk nano-films and -aerogels.

5. 2D materials-based target of laser particle accelerator.

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Papers under review and ready to contribute !

1. **L. Peng, S. Du, L. Liu**, S. Bodepudi, L. Li, W. Liu, Y. Xu*, C. Gao*, Macroscopic Assembled Graphene Based Room Temperature Ultra-fast Mid-Infrared Photodetectors. Under review.
2. Wendao Xu, Wenzhang Fang, Lijuan Xie, **Li Peng***, Yibin Ying* Wafer-Scale Carbon Nanofilms for Solid Terahertz Devices. Under review.
3. **L. Peng**, W. Fang, X. Cao, Chao Gao*, Macro-assembled graphene nanofilms with tunable stacking order. Ready to contribute !
4. **L. Peng**, C. Liang, G. Yan, Xu, F. Guo, Gao, C.* , All elastic graphene hierarchical aerofilms with extreme antifatigue in 77-1673 K. Ready to contribute !
5. W. Fang, W. Xu, Y., Ying*, **L. Peng***, In-situ detection type THz absorber. Ready to contribute !
6. W. Fang, W. Xu, Y., Ying*, **L. Peng***, In-situ detection type THz absorber. Ready to contribute !
7. W. Fang, X. Liu, **L. Peng***, Y. Xu* & C. Gao*, Wafer-scale Macro-assembled Graphene/Si Schottky Junction for Sensitive and Fast Direct X-ray Detection. Ready to contribute !
8. W. Xu, W. Fang, **L. Peng***, Y., Ying*. Wafer-scale structure and morphology tunable MAG for THz devices and sensors. Ready to contribute !
9. X. Le, W. Fang, **L. Peng***, J. Xie*, Humidity sensor by macro-assembled graphene oxide nanofilm. Ready to contribute !

PUBLICATIONS:

1. **W. Liu, J. Lv, L. Peng, H. Guo**, C. Liu, Y. Liu, W. Li, L. Li, L. Liu, S. Bodepudi, K. Shehzad, Z. Sun, T. Hasan, X. Duan*, X. Wang*, C. Gao* & Y. Xu*, Graphene-based charge-coupled device for broadband imaging. *Nature Electronics* **2021**.
2. **L. Peng, Y. Han**, M. Wang, X. Cao, Y. Liu, Y. Lu*, R. S. Ruoff* & Chao Gao*, Multifunctional macro-assembled graphene nanofilms with high crystallinity. *Advanced Materials* **2021**.
3. H. Huang, X. Ming, Y. Wang, F. Guo, Y. Liu, Z. Xu, **L. Peng*** & C. Gao*

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- Polyacrylonitrile-derived thermally conductive graphite film via graphene template effect. *Carbon* **2021**, 180, 197-203.
4. H. Huang, L. Peng*, W. Fang, Y. Liu, W. Gao, Z., Xu* and C. Gao*, Polyimide-pyrolyzed Carbon Wastes Approach to Scalable and Controlled Electrochemical Preparation of Size-Tunable Graphene. *Nanoscale* **2020**, 12, 11971-11978.
 5. X. Zhang, Y. Guo, Y. Liu, Z. Li, W. Fang, L. Peng*, J. Zhou*, Z. Xu, C. Gao*, Ultrathick and Highly Thermally Conductive Graphene Films by Self-fusion Strategy. *Carbon* **2020**, 167, 249-255.
 6. L. Peng, Z. Xu, Z. Liu, Y. Guo, P. Li & C. Gao*, Ultrahigh Thermal Conductive yet Superflexible Graphene Films. *Advanced Materials* **2017**, 29, 1700589.
 7. L. Peng, Y. Zheng, J. Li, Y. Jin, C. Gao*, Monolithic Neat Graphene Oxide Aerogel for Efficient Catalysis of S→O Acetyl Migration. *Acs Catalysis* **2015**, 5(6), 3387-3392.
 8. L. Peng, Z. Xu, Z. Liu, Y. Wei, H. Sun, Z. Li, Zhao X., C. Gao*, An Iron-based Green Approach to 1-h Production of Single-layer Graphene Oxide. *Nature communications* **2015**, 6, 5716.
 9. G. Wang, L. Peng, Y. Zheng, Y. Gao, X. Wu, T. Ren, C. Gao*; J. Han*, Novel Triethylamine Catalyzed S→O Acetyl Migration Reaction to Generate Candidate Thiols for Construction of Topological and Functional Sulfur-containing Polymers. *RSC Advances* **2015**, 5(8), 5674-5679.
 10. Y. Jin, J. Li, L. Peng, C. Gao*, Discovery of Neat Silica Gel as A Catalyst: An Example of S→O Acetyl Migration Reaction. *Chemical Communications* **2015**, 51(84), 15390-15393.
 11. Xu, Z., Peng, L., Liu, Y., Liu, Z., Sun, H., Gao, W., Gao, C.*, Experimental Guidance to Graphene Macroscopic Wet-Spun Fibers, Continuous Papers, and Ultralightweight Aerogels. *Chemistry of Materials* **2016**, 29(1), 319-330.
 12. Fang, B., Peng, L., Xu, Z., Gao, C.*, Wet-spinning of Continuous Montmorillonite-graphene Fibers for Fire-resistant Lightweight Conductors. *ACS nano* **2015**, 9(5), 5214-5222.
 13. Zheng, Y., Cai, S, Peng, L., Jin, Y., Xu, H., Weng, Z., Weng, Z., Gao, Z., Zhao, B, Gao, C.*, Group Interval-controlled Polymers: An Example of Epoxy Functional Polymers via Step-growth Thiol-yne Polymerization. *Polymer Chemistry* **2016**, 7(40), 6202-6210.
 14. Xu, Z., Liu, Y., Zhao, X., Peng, L., Sun, H., Xu, Y., Ren, X., Jin, C., Xu, P., Wang, M., Gao,

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- C.*, Ultrastiff and Strong Graphene Fibers via Full-scale Synergetic Defect Engineering. *Advanced Materials* **2016**, 28(30), 6449-6456.
15. Xiao, Y., Xu, Z., Liu, Y., Peng, L., Xi, J., Fang, B., Guo, F., Li, P., Gao, C.*, Sheet Collapsing Approach for Rubber-like Graphene Papers. *ACS nano* **2017**, 11(8), 8092-8102.
 16. Tian, Q., Xu, Z., Liu, Y., Fang, B., Peng, L., Xi, J., Zheng Li, Gao, C. *, Dry Spinning Approach to Continuous Graphene Fibers with High Toughness. *Nanoscale* **2017**, 9(34), 12335-12342.
 17. Liu, Z., Li, Z., Xu, Z., Xia, Z., Hu, X., Kou, L., Peng, L., Wei, Y., Gao, C.*, Wet-spun Continuous Graphene Films. *Chemistry of Materials* **2014**, 26(23), 6786-6795.
 18. Chen, H., Chen, C., Liu, Y., Zhao, X., Ananth, N., Zheng, B., Peng, L., Huang, T., Gao, W., Gao, C.*, High-Quality Graphene Microflower Design for High Performance Li-S and Al-Ion Batteries. *Advanced Energy Materials* **2017**, 1700051.
 19. Wang, R., Xu, Z., Zhuang, J., Liu, Z., Peng, L., Li, Z., Gao, W., Gao, C. *, Highly Stretchable Graphene Fibers with Ultrafast Electrothermal Response for Low-Voltage Wearable Heaters. *Advanced Electronic Materials* **2017**, 3(2).
 20. Hu, X., Rajendran, S., Yao, Y., Liu, Z., Gopalsamy, K., Peng, L., Gao, C.*, (2016). A Novel Wet-spinning Method of Manufacturing Continuous Bio-inspired Composites Based on Graphene Oxide and Sodium Alginate. *Nano Research* **2016**, 9(3), 735-744.
 21. Y. Wei, X. Li, Z. Xu, H. Sun, Y. Zheng, L. Peng, Z. Liu, C. Gao* Solution Processible Fyperbranched Inverse-vulcanized Polymers as New Cathode Materials in Li-S Batteries. *Polymer Chemistry* **2015**, 6(6), 973-982.
 22. X. Lei, Z. Xu, H. Sun, S. Wang, C. Griesinger, L. Peng, C. Gao* R. X. Tan*, Graphene oxide liquid crystals as a versatile and tunable alignment medium for the measurement of residual dipolar couplings in organic solvents. *Journal of the American Chemical Society* **2014**, 136(32), 11280-11283.

PATENTS:

1. Chao Gao, Li Peng, Yanqiu Jiang, Yingjun Liu, SUPER-FLEXIBLE HIGH THERMAL CONDUCTIVE GRAPHENE FILM AND PREPARATION METHOD THEREFOR, **Japan Patent**, Patent Number: JP2017-564679.

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2. Chao Gao, Yaochen Zheng, **Li Peng**, Shengying Cai, Zhulin Weng, Method for synthesis of polymer containing multiple epoxy groups, **American Patent**, Patent Number: US15305090.
3. Chao Gao, **Li Peng**, Zhen Xu, Method for preparing highly flexible graphene film assisted by ice crystals, **China Patent**, Patent Number: CN106185903B(2018).
4. Chao Gao, **Li Peng**, Yanqiu Jiang, Yingjun Liu, Super flexible high thermal conductivity graphene film and preparation method thereof, **China Patent**, Patent Number: N105523547B (2017).
5. Chao Gao, **Li Peng**, Danping Yu, Ying Shen, A gas molecule detection membrane, **China Patent**, Patent Number: CN108892125B (2020).
6. Chao Gao, **Li Peng**, Jihan Zhuang, Tian Yu, Method for preparing graphene transparent conductive film by high temperature treatment, **China Patent**, Patent Number: CN106186719B (2018).
7. Chao Gao, **Li Peng**, Yihan Liu, Yan Guo, Method for preparing graphene-based ultra-thin composite film, **China Patent**, Patent Number: CN108862262B (2020).
8. Chao Gao, **Li Peng**, Yihan Liu, Yan Guo, Graphene film-based low-frequency acoustic wave detector, **China Patent**, Patent Number: CN108871547B (2021).
9. Chao Gao, **Li Peng**, Yihan Liu, Yan Guo, High-strength graphene film and preparation method thereof, **China Patent**, Patent Number: CN108821263B (2020).
10. Chao Gao, **Li Peng**, Zhen Xu, Yan Guo, Method and device for concentrating large sheets of graphene oxide solution, **China Patent**, Patent Number: CN108117069B (2020).
11. Chao Gao, **Li Peng**, Zheng Liu, Ran Wang, Method for preparing super soft and light graphene electric heating film, **China Patent**, Patent Number: CN105692600B (2017).
12. Chao Gao, **Li Peng**, Haiyan Sun, Qing Yang, Method for preparing non-fragmented super large graphene oxide, **China Patent**, Patent Number: CN105692599B (2017).
13. Chao Gao, **Li Peng**, Zhen Xu, Preparation method of bromine-doped high-conductivity ultra-thin graphene film, **China Patent**, Patent Number: CN108249424B (2020).
14. Chao Gao, **Li Peng**, Method for preparing ultra-light graphene microspheres for solar energy absorption, **China Patent**, Patent Number: CN107651672B (2019).
15. Chao Gao, **Li Peng**, Zhen Xu, Graphene elastic film and preparation method thereof, **China**

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Patent, Patent Number: CN106185906B (2019).

16. Chao Gao, **Li Peng**, Danping Yu, Ying Shen, Nano-level sound wave generating film and nano-level sound wave generator, **China Patent**, Patent Number: CN108892133B (2020).
17. Chao Gao, **Li Peng**, Yu Jin, Jiachen Li, Yangyang Wei, Yaochen Zheng, Sulfhydryl modified graphene oxide and preparation method thereof, **China Patent**, Patent Number: CN104556012B (2016).
18. Chao Gao, **Li Peng**, Yihan Liu, Yan Guo, Preparation method of self-supporting graphene film, **China Patent**, Patent Number: CN108793124B (2020).
19. Chao Gao, **Li Peng**, Method for preparing graphene film by ultra-high pressure thermal reduction, **China Patent**, Patent Number: CN107758644B (2019).
20. Chao Gao, **Li Peng**, Bo Fang, Jin Han, Method for synthesizing bio-based rubber with soybean oil and epoxy soybean oil as raw materials, **China Patent**, Patent Number: CN104592487B (2016).
21. Chao Gao, **Li Peng**, Yu Jin, Jiachen Li, Yangyang Wei, Yaochen Zheng, Process for preparing single-layer graphene oxide with no pollution and low cost, **China Patent**, Patent Number: CN104386671B (2016).
22. Chao Gao, **Li Peng**, Zhen X Yan Guo, Preparation method and application of highly wrinkled graphene oxide film, **China Patent**, Patent Number: CN108358197B (2020).
23. Chao Gao, **Li Peng**, Chen Chen, Pure graphene composite electromagnetic shielding film and preparation method thereof, **China Patent**, Patent Number: CN106185905B (2018).