

Nan ZHANG

Curriculum Vitae

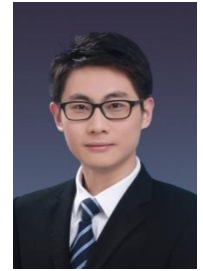
Research Fellow

Department of Quantum Materials, Science and Technology

International Iberian Nanotechnology Laboratory (INL)

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◆ QUALIFICATIONS

- **Experimental skills on synthesizing nano-materials (especially carbon-based materials):** Chemical Vapor Deposition, Electrochemical Deposition, Inkjet Printing, Thermal Evaporation, Electron Beam Evaporation and Nano-template Synthesis
- **Experimental skills on fabricating and testing energy storage devices:** Flexible and stretchable supercapacitor, lithium-ion battery, lithium sulphur battery
- **Experiences on operating scientific instruments:** Electrochemical Workstation, Scanning Electron Microscope, Atomic Force Microscope, Step Profiler, Glove Box, Dynamic Mechanical Analyzer, Raman Spectrometer, UV-vis-IR Spectrometer, Photoluminescence Spectrometer, Four Point Probe

◆ EDUCATION & ACADEMIC EXPERIENCES

2017-present **Research fellow**

(INL)

Nanomaterials for Energy group (Prof. Lifeng Liu)

International Iberian Nanotechnology Laboratory (INL), Braga, Portugal

- **Synthesis and characterization of Novel nano energy materials**
- **Fabrication of flexible all-solid-state batteries and supercapacitors**

2011-2016 **Ph.D. candidate in Condensed Matter Physics**

(IOP, CAS)

Nano-materials and Mesoscopic physics group (Prof. Weiya Zhou and Prof. Sishen Xie)

Institute of Physics (IOP), Chinese Academy of Sciences (CAS), Beijing, China

Supervisor: Prof. Weiya Zhou, Co-supervisor: Prof. Sishen Xie

- **Synthesis of continuously grown free-standing ultra-thin SWCNT films**
- **Investigation of pre-treatment techniques and percolation phenomenon of SWCNT**
- **Fabrication and characterization of carbon based composites**
- **Design and construction of functionalized energy storage devices**

2007-2011 **B.S. in Physics**

(OUC)

Department of Physics, Ocean University of China (OUC), Qingdao, China

- **Exploration of the absorption capacity of SWCNT aqueous solution**
- **Development of automatic control systems based on micro-controller**

◆ RESEARCH INTERESTS

- Controllable synthesis of novel nano-materials and nano-structures
- Development of functional and energy storage devices for flexible electronics
- Investigation of physical phenomena and mechanism in nano-materials

◆ PUBLICATIONS

- [1] **N. Zhang**, P. Luan, W. Zhou,* Q. Zhang, L. Cai, X. Zhang, W. Zhou, Q. Fan, F. Yang, D. Zhao, Y. Wang, S. Xie,* Highly stretchable pseudocapacitors based on buckled reticulate hybrid electrodes, *Nano Res.* **2014**, 7, 1680.
- [2] **N. Zhang**, W. Zhou,* Q. Zhang, P. Luan, L. Cai, F. Yang, X. Zhang, Q. Fan, W. Zhou, Z. Xiao, X. Gu, H. Chen, K. Li, S. Xiao, Y. Wang, H. Liu, S. Xie,* Biaxially stretchable supercapacitors based on the buckled hybrid fiber electrode array, *Nanoscale* **2015**, 7, 12492.
- [3] P. Luan, **N. Zhang** W. Zhou,* Z. Niu,* Q. Zhang, L. Cai, X. Zhang, F. Yang, Q. Fan, W. Zhou, Z. Xiao, X. Gu, H. Chen, K. Li, S. Xiao, Y. Wang, H. Liu, S. Xie,* Epidermal supercapacitor with high performance, accepted by *Adv. Funct. Mater.* **2016**, 26, 8178. (Joint first authors)
- [4] **N. Zhang**, Y. Zhu, W. Zhou,* H. Liu, S. Xie,* et al., Highly area-stretchable supercapacitor, in preparation. (Joint first authors)
- [5] **N. Zhang**, W. Zhou,* S. Xie,* et al, Transparent supercapacitor without percolation problem, in preparation.
- [6] L. Cai, L. Song,* P. Luan, Q. Zhang, **N. Zhang**, Q. Gao, D. Zhao, X. Zhang, M. Tu, F. Yang, W. Zhou, Q. Fan, J. Luo, W. Zhou, P. M. Ajayan, S. Xie,* Super-stretchable, Transparent Carbon Nanotube-Based Capacitive Strain Sensors for Human Motion Detection, *Sci. Rep.* **2013**, 3, 3038.
- [7] X. Zhang, L. Song, L. Cai, X. Tian, Q., X. Qi, W. Zhou, **N. Zhang**, F. Yang, Q. Fan, Y. Wang, H. Liu, X. Bai, W. Zhou,* S. Xie,* Optical visualization and polarized light absorption of single-wall carbon nanotube for verifying intrinsic thermal applications, *Light: Science& Applications* **2015**, 4, e318.
- [8] X. Zhang, F. Yang, D. Zhao, L. Cai, P. Luan, Q. Zhang, W. Zhou, **N. Zhang**, Q. Fan, Y. Wang, H. Liu, W. Zhou* and S. Xie,* Temperature dependent Raman spectra of isolated suspended single-walled carbon nanotubes, *Nanoscale* **2014**, 6, 3949.
- [9] W. B Zhou, Q. X. Fan, Q. Zhang, K. W. Li, L. Cai, X. G. Gu, F. Yang, **N. Zhang**, Z. J. Xiao, H. L. Chen, S. Q. Xiao, Y. C. Wang, H. P. Liu, W. Y. Zhou,* and S. S. Xie,* Ultrahigh-Power-Factor Carbon Nanotubes and an Ingenious Strategy for Thermoelectric Performance Evaluation, *Small* **2016**, DOI: 10.1002/sml.201600501
- [10] X. Gu, Q. Fan, F. Yang, L. Cai, **N. Zhang**, W. Zhou, W. Zhou,* S. Xie,* Hydro-actuation of hybrid carbon nanotube yarn muscles, *Nanoscale* **2016**, 8, 17881
- [11] W. B Zhou, Q. X. Fan, Q. Zhang, K. W. Li, L. Cai, X. G. Gu, F. Yang, **N. Zhang**, Z. J. Xiao, H. L. Chen, S. Q. Xiao, Y. C. Wang, H. P. Liu, W. Y. Zhou,* and S. S. Xie,* Ultrahigh-Power-Factor Carbon Nanotubes and an Ingenious Strategy for Thermoelectric Performance Evaluation, *Nat. Communi. Accepted.*
- [12] Q. Fan, Q. Zhang, W. Zhou, F. Yang, **N. Zhang**, S. Xiao, X. Gu, Z. Xiao, H. Chen, Y. Wang, H. P. Liu, W. Y. Zhou,* Highly conductive and transparent carbon nanotube-based electrodes for ultrathin and stretchable organic solar cells, *Chin. Phys. B* **2017**, 26, 28801
- [13] Q. Zhang, K. Li, Q. Fan, X. Xia, **N. Zhang**, Z. Xiao, W. Zhou, F. Yang, Y. Wang, H. Liu, W. Y. Zhou,* Performance improvement of continuous carbon nanotube fibers by acid treatment, *Chin. Phys. B* **2017**, 26, 28802
- [14] Q. Fan, Q. Zhang, W. Zhou, X. Xia, F. Yang, **N. Zhang**, S. Xiao, K. Li, X. Gu, Z. Xiao, H. Chen, Y. Wang, H. Liu, W. Zhou,* S. Xie,* Novel Approach to Enhance Efficiency of Hybrid Silicon-Based Solar Cells via Synergistic Effects of Polymer and Carbon Nanotube Composite Film, *Nano Energy*

2017, 33, 436.

[15] Weiya Zhou, Min Tu, Pingshan Luan, **Nan Zhang**, Sishen Xie. An all-solid winding-type supercapacitor. China Patent: 201310168082.6

◆ CONFERENCES

[1] 02/2015, 1st International Workshop on Engineering and Applications of Nanocarbon Materials, invited talk, “Carbon nanotubebased highly stretchable supercapacitors”, Weiya Zhou, **Nan Zhang (speaker)**, Zhiqiang Niu, Qiang Zhang, Xiao Zhang, Qingxia Fan, Sishen Xie

[2] 10/2014, 13th China International Conference on NanoScience and Technology, , “Highly stretchable supercapacitors based on carbon nanotube film”, invited talk, Weiya Zhou, **Nan Zhang (speaker)**

[3] 09/2014, 2014 National Conference on development of carbon materials and technique of carbon nano-material, invited talk, Weiya Zhou, **Nan Zhang (speaker)**, Zhiqiang Niu, Jinzhu Li, Qiang Zhang, Le Cai, Sishen Xie
