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## Yongji Guan, PhD

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### Education

- Sep 2016 – Jun 2019*   **Lanzhou University**  
Doctor of Philosophy, Radio Physics  
Lanzhou, Gansu, China
- Sep 2014 – Jun 2016*   **Lanzhou University**  
Master of Science, Radio Physics  
Lanzhou, Gansu, China
- Sep 2010 – Jun 2014*   **Lanzhou University**  
Bachelor of Engineering, Communication Engineering  
Lanzhou, Gansu, China

### Thesis

- Sep 2014 – Jun 2019*   **Doctor of Philosophy**  
Lanzhou University, School of Information Science and Engineering  
Lanzhou, Gansu, China  
Advisor: Prof. Xiaoping Zhang and Prof. Youquan Deng  
Dissertation title: Molecular Dynamics Study on Wetting Behaviour and Energy Harvesting of Nano-Confined Imidazolium Ionic Liquids
- Sep 2010 – Jun 2014*   **Bachelor of Engineering**  
Lanzhou University, School of Information Science and Engineering  
Lanzhou, Gansu, China  
Advisor: Prof. Xiaoping Zhang and Dr. Qunfeng Shao  
Dissertation title: Nano-Sized Water Droplet in an Electric Field Using Molecular Dynamics Simulation

### Research Experience

- Oct 2019 –present*   **PostDoc Position**  
Lanzhou University, School of Information Science and Engineering

Lanzhou, Gansu, China

Advisor: Prof. Xiaoping Zhang

International Postdoctoral Research Fellow

*Oct 2019 – present* **PostDoc Position**

Imperial College London, Department of Chemistry  
London, England, United Kingdom

Advisor: Prof. Tom Welton

Postdoctoral Research Fellow

## Awards & Grants

*May 2019* Scholarship: The International Postdoctoral Scholarship Fund of Lanzhou University

*Dec 2018* Scholarship: Liu Bing Alumni Scholarship

*Oct 2018* Scholarship: The First Prize Scholarship of Lanzhou University

*Dec 2017* Award: The title of Merit Postgraduate of Lanzhou University

*Oct 2017* Scholarship: The First Prize Scholarship of Lanzhou University

*Oct 2016* Scholarship: The First Prize Scholarship of Lanzhou University

*Oct 2015* Scholarship: The First Prize Scholarship of Lanzhou University

*Oct 2014* Scholarship: The First Prize Scholarship of Lanzhou University

## Projects

*lzujbky-2018-it62* The Fundamental Research Funds for the Central Universities

*2017YFA0403101* The National Key Research and Development Program of China

## Journal Publications

**Yongji Guan**, Jiao Zhang, Jinyuan Wang, Fulong Yang, Huanwang Jing, Xiaoping Zhang, Youquan Deng:  
*In-Depth Investigation on THz Spectrum of 1-Butyl-3-Methylimidazolium Dicyanamide Spreading on Graphene Surface by Computational Calculation*. Journal of Molecular Liquids 05/2020; 311:113353., DOI:10.1016/j.molliq.2020.113353

- Jiao Zhang<sup>1</sup>, **Yongji Guan**<sup>1</sup>, Jinyuan Wang, Fulong Yang, Huanwang Jing, Xiaoping Zhang, Youquan Deng: *Vibrational Spectrum of 1-Ethyl-3-Methylimidazolium Tetrafluoroborate on Graphene Surface*. Journal of Molecular Liquids 05/2020; 311:113340., DOI:10.1016/j.molliq.2020.113340
- Wenqiong Chen, **Yongji Guan**, Jiao Zhang, Junjie Pei, Xiaoping Zhang, Youquan Deng: *Atomistic Insight into Changes in the Vibrational Spectrum of Ionic Liquids under External Electric Field*. Acta Physico-Chimica Sinica 03/2020; 36(X):1-11., DOI:10.3866/PKU.WHXB202001004
- Jinyuan Wang, **Yongji Guan**, Xiaogang Yu, Youzhi Cao, Jiazang Chen, Yilin Wang, Bin Hu, Huanwang Jing: *Photoelectrocatalytic reduction of CO<sub>2</sub> to Paraffin Using p-n Heterojunctions*. iScience 12/2019; 23(1):100768., DOI:10.1016/j.isci.2019.100768
- Chao Du, **Yongji Guan**, Shimin Liu, Wenpeng Ni, Junjie Pei, Wei Zhang, Xiaoping Zhang, Y. F. Deng: *Highly Efficient and Non-Precious Metal for the Li-SOCl<sub>2</sub> Battery Using Nitrogen Doped Carbon Supported Cu Nanoparticles*. Journal of The Electrochemical Society 03/2019; 166(4):A641., DOI:10.1149/2.0701904jes
- Fulong Yang, Jianhao Gong, E. Yang, **Yongji Guan**, Xiaodong He, Shimin Liu, Xiaoping Zhang, Youquan Deng: *Ultrabroadband metamaterial absorbers based on ionic liquids*. Applied Physics A 02/2019; 125(2)., DOI:10.1007/s00339-019-2443-x
- Fulong Yang, Jiaohao Gong, E Yang, **Yongji Guan**, Xiaodong He, Shimin Liu, Xiaoping Zhang, Y. F. Deng: *Microwave-absorbing properties of room-temperature Ionic Liquids*. Journal of Physics D Applied Physics 01/2019; 52(15)., DOI:10.1088/1361-6463/ab016c
- Yongji Guan**, Wenqiong Chen, Jiao Zhang, Fulong Yang, Chao Du, Xiaoping Zhang, Y. F. Deng: *Ionic Liquid Filled Single-Walled Carbon Nanotubes for Flow-Induced Energy Harvesting*. The Journal of Physical Chemistry C 01/2019;., DOI:10.1021/acs.jpcc.8b11142
- Yongji Guan**, Qunfeng Shao, Wenqiong Chen, Zhang Jiao, Youquan Deng, Xiaoping Zhang: *Flow-induced Voltage Generation by Driving Imidazolium-Based Ionic Liquids over a Graphene Nano-Channel*. Journal of Materials Chemistry A 05/2018; 6(25)., DOI:10.1039/C8TA02629G
- Wenqiong Chen, **Yongji Guan**, Xiaoping Zhang, Youquan Deng: *Influence of External Electric Field on Vibrational Spectrum of Imidazolium-Based Ionic Liquids Probed by Molecular Dynamics Simulation*. Acta Physico-Chimica Sinica 04/2018; 34(8):1-9., DOI:10.3866/PKU.WHXB201801091
- Yongji Guan**, Qunfeng Shao, Wenqiong Chen, Shimin Liu, Xiaoping Zhang, Youquan Deng: *Dynamic Three-Dimensional Nano-Wetting Behaviour of Imidazolium Based Ionic Liquids Probed by Molecular Dynamics Simulation*. The Journal of Physical Chemistry C 09/2017; 121(42)., DOI:10.1021/acs.jpcc.7b07474
- Qunfeng Shao, Jingjing Jia, **Yongji Guan**, Xiaodong He, Xiaoping Zhang: *Flow-induced voltage generation by moving a nano-sized ionic liquids droplet over a graphene sheet: Molecular dynamics simulation*. The Journal of Chemical Physics 03/2016; 144(12):124703., DOI:10.1063/1.4944611

## Conference Proceedings

**Yongji Guan**, Qunfeng Shao, Xiaoping Zhang, Youquan Deng: *Flow-induced Voltage Generation by Driving Imidazolium-Based Ionic Liquids over a Graphene Nano-Channel*. The 6th Asian Pacific Congress on Ionic Liquid & Green Processes (APCIL-6), Tottori, Japan; 10/2018

**Yongji Guan**, Qunfeng Shao, Xiaoping Zhang: *Probing Nano-Wettability of Hydrophilic/Hydrophobic Ionic Liquids Using Molecular Dynamics Simulation*. The 8th International Conference on Molecular Simulations and Informatics Technology Application (8th-ICMS&I), Dalian, China; 09/2016

Zhiyun Li, Zhinan Wang, Pengfei Cao, **Yongji Guan**, Lin Cheng, Linshan Chen: *Near infrared plasmonic optical trapping based on hybrid metal nanorod*. 2016 Progress in Electromagnetic Research Symposium (PIERS); 08/2016, DOI:10.1109/PIERS.2016.7734436

## Research interest

<i>Nano-wetting of ionic liquids</i>	Spontaneously spreading on the solid surface
	Influence of water on the wetting of ionic liquids
	External field (electric and magnetic field) induced spreading on the solid substrate
<i>Flow-induced energy harvesting</i>	Driving ionic liquids droplet over monolayer graphene
	Flowing ionic liquids over graphene nano-channel
	Flowing ionic liquids over SWCNTs

## Service & leadership

<i>Journal Review</i>	Nano Energy
	The Journal of Physical Chemistry C
	Langmuir
	Chinese Physics B
	Journal of Molecular Liquids
<i>Conference Review</i>	2019 8th International Conference on Advanced Materials and Engineering Materials (8th ICAMEM2019)

## Skills & Activities

<i>Skills</i>	Molecular Dynamics Simulation, Ionic Liquids, Energy Harvesting, Quantum Chemistry, Modeling and Simulation, Soft Matter, Density Functional Theory
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*Languages* Chinese, English

*Scientific Memberships* The Royal Society of Chemistry  
The American Chemical Society

*Interests* Chinese Go;  
Badminton;  
poetry;