Lu Niu

Condensed Matter Theory Group School of Physics The University of Sydney Sydney, NSW 2006, Australia

Personal Information

Gender:	Male
Day of Birth:	May 12, 1993
Place of Birth:	Huairou District, Beijing, P.R.China
Nationality:	The People's Republic of China
Office:	Room 443, School of Physics A28

Research Interests

Quantum Computation:

Quantum circuit.

Ab Initio:

The surface effect of metal nano-particles.

Education

The University of Sydney

PhD of Science in Physics

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Subject:	Plasmonics	
Thesis:	Quantum Computation Logic Circuits Re	ealization Based on Plas-
	mon Effects.	
GPA:	Expected	
Supervisor:	Catherine Stampfl	
University of Sc	ience and Technology Beijing	Sep. 2015 – Jun. 2017

MPhil of Science in Physics

Atom and Molecular Physics
Effect of External Field on the IV Characteristics through the Molec- ular Nano-junction.
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Luxia Wang

Expertise and Technical Strengths

Programming:	C/C++, Fortran, Python, Julia (Main), Gnuplot, ĽTĘX
Software:	Linux, Git, TensorFlow, VASP, Octopus
Expertise:	Quantum Optics, Quantum Plasmonics, Computational Physics,
-	Mathematical Analysis, Algorithms
Language:	Mandarin Chinese (Native), English

Nork Experience

University of Science and Technology Beijing

Teaching Assistant on Analytical Mechanics Teaching Assistant on College Physics Spring, 2017 and Spring, 2016 Autumn, 2016 and Autumn, 2015

Jul. 2019 – Present

PhD Candidate in Physics

Email:	Luke.Niu@sydney.edu.au
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GitHub:	https://github.com/ConAntares
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Research Experience

Effect of External Field on the IV Characteristics through the Molecular Nanojunction

Sep. 2016 - Jun. 2017 @ USTB, Beijing, P.R.China

This research involves molecule physics. we analyzed the steady current between two electrodes under distinct bias voltages, and studied transient current under Gaussian pulse with different widths; we established the physical model of Molecular junction with external fields which could produce coupling with the molecule.

Plasmon-Enhanced Heterogeneous Electron Transfer with Continuous Band Energy Model

Apr. 2016 – Mar. 2017 @ USTB, Beijing, P.R.China

We calculated the Plasmon-Enhanced heterogeneous electron transfer in semiconductor continuous model with the master equation. And simulated the physical model and conducted the scientific calculation.

Molecular Emission Spectrum of Combined System and its Fourier Analysis

Dec. 2015 - Apr. 2016 @ USTB, Beijing, P.R.China

We probed into the emission spectrum of molecular with Fourier analysis. And built the equations set which describes the physical process of the molecule system excitation in the quantization radiation field.

Publications

2018

Lu Niu, Luxia Wang*; *Effect of External Field on the I-V Characteristics through the Molecular Nano-junction* (in Chinese); Acta Physica Sinica, 67, 027304 (2018).

2017

Dandan Zhao, Lu Niu, Luxia Wang*; *Plasmon Enhanced Heterogeneous Electron Transfer with Continuous Band Energy Model*; Chemical Physics, 493 (2017) 194-199.

References and Activites

2016

Nov. 14 – Nov.18, Beijing, The 2nd Joint Workshop on Condensed Matter Science, Peking University & IMPRS. @ PKU, Beijing, P.R.China.

Awards and Honors

Updated August 2019