Yazhong Wang

136 Frelinghuysen Road, Piscataway, New Jersey, 08854

732-325-8898 yzwangru@gmail.com

Education

Rutgers (The State University of New Jersey) ***New Brunswick, NJ***

Ph.D. in Physics And Astronomy (3.95/4.0) Sept. 2012 - Present

Master in Computer Science (3.43/4.0) Sept. 2014 - Present

USTC (University of Science and Technology of China) ***Hefei, P.R.China***

Bachelor in Physics And Astronomy (3.73/4.0) Sept. 2008 - Jul. 2012

Research Experience

Research Assistant, Rutgers Center for Emergent Materials, USA Sept. 2013 - Present

- Synthesized and characterized Multiferroics for next generation high-efficiency low-power electronic devices

Research Assistant, Hefei National Lab. for Phys. Science at Microscale, China Oct. 2010 - Jul. 2012

- Improved the property of 2DEGS in heterojunctions using localized surface plasmon and indicated its use in MOSFET

Summer Intern, Electron Spectroscopy Laboratory, Korea Jul. - Sept. 2011

- Set up a high resolution Magneto-Optical Kerr System used to characterize the magnetic property on hard disk, etc.

Publications

- "Far-IR magnetospectroscopy of magnons and electromagnons in $bFeO_3$ single crystals at low temperatures", TN Stanislavchuk, Yazhong Wang, SW Cheong, AA Sirenko, **Physical Review B** 2017
- "The first room-temperature Sn insulator and its polarization switching kinetics", Yazhong Wang, Fei-Ting Huang, Xuan Luo, Bin Gao, SW Cheong, **Advanced Materials** 2017
- "Toward the intrinsic limit of the topological insulator Bi_2Se_3", Jixia Dai, Damien West, Xueyun Wang, Yazhong Wang, Daniel Kwok, SW Cheong, Weida Wu, **Physical Review Letters**, 2016
- "Topological defects at oxtahedral tilting plethora in bi-layered perovskites", Feiting Huang, Bin Gao, Jae Kim, Xuan Luo, Yazhong Wang, Ming Chu, Chuang Chang, Hwo Sheu, SW Cheong, **Quantum Materials**, Accepted, 2016
- "Magnon and electromagnon excitations in multiferroic $DyFeO_3$", TN Stanislavchuk, Yazhong Wang, Y Janssen, GL Carr, SW Cheong, AA Sirenko, **Physical Review B**, 2016
- "Experimental demonstration of hybrid improper ferroelectricity and the presence of abundant charged walls in $(Ca,Sr)_3Ti_2O_7$ crystals", YS Oh, X Luo, FT Huang, Y Wang, SW Cheong, **Nature Materials**, 2015
- "Unveiling hidden magnetism and giant magnetoelectricity in polar magnet $Fe_2Mo_3O_8$", Y Wang, GL Pascut, Bin Gao, TA Tyson, Kristjan Haule, Valery Kiryukhin, SW Cheong, **Scientific Reports**, 2015
- "Multiferroicity in doped hexagonal $LuFeO_3$", SM Disseler, Y Wang, etc, **Physical Review B**, 2015

Conferences and Talks

- "Unveiling hidden ferrimagnetism and giant magnetoelectricity in polar magnet $Fe_2Mo_3O_8$", **APS March Meeting**, Baltimore, USA, 2016
- "Cosmological experiment in condensed matter system", **Invited talk at NSF Data Science Workshop**, Seattle, USA, 2015
- "Magnetic and dielectric properties of $Dy(Tb)FeO_3$", **DOE (Dept. of Energy) Meeting**, Piscataway, USA, 2014
- "Unveiling the potential magnetoelectric coupling in $LuFe_xMn_{1-x}O_3$ and $YbFe_xMn_{1-x}O_3$", **DOE (Dept. of Energy) Meeting**, Piscataway, USA, 2014

Scholarships & Awards

2015	The best poster award of NSF Data Science Workshop ($1,000 travel award)	*Seattle, USA*
2011	National Scholarship (97^{th} percentile)	*USTC, P.R. China*
2008-10	Outstanding Student Scholarship Grade 3, 2, 1 (80^{th}, 90^{th}, 95^{th} percentile)	*USTC, P.R. China*

Programming Projects

Drug-drug interaction classification with topic modeling of biomedical text May. 2016

- Implemented the unsupervised DDI-LDA model instead of the traditional supervised SVM model
- Applied one filtration, which utilizes the machine-learning approach of Hidden Markov models, making our DDI-LDA model more robust to unbalanced data

Camera calibration and augmented reality Apr. 2016

- Performed calibration using 3D object with SVD and Linear Least Squares method
- Implemented camera calibration using 2D object and mapped a clip art image onto it
- Augmented camera images with 3D objects

Text reconstruction Dec. 2015

- Broke up an unsegmented string into a sequence of words in a way that minimized the total cost
- Reconstructed words from a dictionary to match a sequence of words without vowels and minimized the cost

Text spreadsheet (2D) using linked list Nov. 2014

- Implemented polymorphic cells to store numbers, strings or functions using list of list of cells
- Derived the function cell (mean, min, max) value from other cells and updated it when the spreadsheet was modified

Skills

Low & High temperature measurement

- MPMS (Magnetic Property Measurement System): temp. & magnetic field dependence of susceptibility
- PPMS (Physical Property Measurement System): resistivity, ac susceptibility and thermal conductivity
- I-V and Q-V measurements, High temperature resistivity

Programming

- Labview, C++, Matlab, MySQL, C, SQL, Origin Lab, Unity, FrontPage

Contributed Talks

- "Mueller matrix ellipsometry studies of the optical phonons and crystal field excitations in multiferroic orthoferrites $RFeO_3(R = Tb, Dy)$", **APS March Meeting**, Baltimore, USA, 2016
- "Magnetically induced ferroelectricity in single crystalline ferrimagnet, $Mn_2Mo_3O_8$", **APS March Meeting**, Baltimore, USA, 2016
- "Visualizing the native atomic defects in Bi_2Se_3 with scanning tunneling microscopy", **APS March Meeting**, San Antonio, USA, 2015
- "Hybrid Improper Ferroelectricity", **Invited Talk, APS March Meeting**, San Antonio, USA, 2015
- "Ru-Ru Dimers in honeycomb-layered Li_2RuO_3", **APS March Meeting**, Denver, USA, 2014

Synergistic Activities

2016	Mentor of 2 PSP (Partners in Science Program) students	*Rutgers, USA*
2015	Group leader of Rutgers international teaching assistans orientation	*Rutgers, USA*
2014	Mentor of one physics REU (Research Experiences for Undergraduates) student	*Rutgers, USA*