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Zhiqiang Li

Education:

Ph.D. Physics, University of California, San Diego (Expected winter 2007)

M.S. Physics, University of California, San Diego (2004)

B.S. Physics, Peking University, P.R. China (2002)

Positions:

Graduate Student Researcher, University of California, San Diego 2003-present

Teaching assistant, University of California, San Diego 2002-2003

Research:

Investigate electronic and magnetic properties of novel materials employing spectroscopic techniques such as infrared and magneto-optical spectroscopy, microscopy, and ellipsometry. Current projects include:

1: Electrostatic doping of novel materials using FET devices, organic electronics, charge transport in polymers and organic molecular crystals.

2: Magneto-optical and magneto-transport properties of graphite and graphene.

Publications:

1: Z.Q. Li, V. Podzorov, M.C. Martin, M.E. Gershenson and D.N. Basov, "*Infrared signatures of band-like transport in molecular crystal field-effect transistors*", in preparation.

2: Z. Q. Li, S.-W. Tsai, W. J. Padilla, S. V. Dordevic, K. S. Burch, Y. J. Wang, and D. N. Basov, "*Infrared probe of the anomalous magnetotransport of highly oriented pyrolytic graphite in the extreme quantum limit*", Phys. Rev. B 74, 195404 (2006).

3: Z. Q. Li, G. M. Wang, N. Sai, D. Moses, M. C. Martin, M. Di Ventra, A. J. Heeger, and D. N. Basov, "*Infrared Imaging of the Nanometer-Thick Accumulation Layer in Organic Field-Effect Transistors*", Nano Letters 6, 224 (2006).

4: Z.Q. Li, G.M. Wang, K.J. Mikolaitis, D.Moses, A. J. Heeger, and D.N. Basov, "*An infrared probe of tunable dielectrics in metal-oxide-semiconductor structures*", Appl. Phys. Lett. 86, 223506 (2005).

5: N. Sai, Z.Q. Li, M.C. Martin, D.N. Basov, and M. Di Ventra, "*Electronic excitations and metal-insulator transition in poly(3-hexylthiophene) organic field-effect transistors*", Phys. Rev. B 75, 045307 (2007).

6: Y. S. Lee, Z. Q. Li, W. J. Padilla, S. V. Dordevic, C. C. Homes, K. Segawa, Y. Ando, and D. N. Basov, "*Strong-coupling effects in cuprate high-T_c superconductors by magneto-optical studies*", Phys. Rev. B 72, 172511 (2005).

7: Y. S. Lee, K. Segawa, Z. Q. Li, W. J. Padilla, M. Dumm, S. V. Dordevic, C. C. Homes, Y. Ando, and D. N. Basov, "*Electrodynamics of the nodal metal state in weakly doped high-T_c cuprates*", Phys. Rev. B 72, 054529 (2005).

8: W.J. Padilla, Z.Q. Li, K.S. Burch, Y.S. Lee, K.J. Mikolaitis, and D.N. Basov, "*Broadband multi-interferometer spectroscopy in high magnetic field from THz to visible"*, Review of Scientific Instruments 75, 4710 (2004)

Invited Talks:

1: *Infrared probe of charge dynamics in field-effect transistors based on organic molecular crystals and polymers*

Physics Department Seminar, University of California, Riverside (November 2006)

2: *Magneto-infrared study of strong coupling effects in high Tc cuprates*

UCSD Physics department Condensed Matter Journal Club, (February, 2005)

Contributed Talks:

1: *Infrared Imaging of Charge Injection Landscape in Organic Field-Effect Transistors*

APS March Meeting, Baltimore, Maryland, (March, 2006)

2: *Infrared Probe of the Anomalous Magneto-transport of Graphite in the Extreme Quantum Limit*

APS March Meeting, Baltimore, Maryland, (March, 2006)

3. *Infrared spectroscopy of 2D electron gas in high magnetic field: a case study of graphite*

APS March Meeting, Los Angeles, California, (March, 2005)

4. *Probing strong coupling effects in high-Tc superconductors using IR spectroscopy in high magnetic field*

APS March Meeting, Los Angeles, California, (March, 2005)

5. *An infrared probe of tunable dielectrics in metal-oxide-semiconductor structures*

APS March Meeting, Los Angeles, California, (March, 2005)

Poster Presentations:

Functional oxides for a spectroscopic probe of charge injection in organic FET

UC/LANL workshop on complex functional oxides May, 2005

Infrared magneto-optics of a quasi-2D electron gas: a case study of graphite

Gordon Research Conference on Correlated Electron Systems June, 2004

Fellowships:

Cal-(IT)² Fellowship UCSD 2004-2005

ALS Doctorial Fellowship Lawrence Berkeley National Lab 2006

References

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