Curriculum Vitae

Name: Subroto Mukerjee

Current Employment: Assistant Professor
Department of Physics
Indian Institute of Science

Contact Information:

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Education:

- Ph.D. (Physics) Princeton University, 2000-2005
- M.S. (Physics), Indian Institute of Science, Bangalore, 1996-1999
- B. Sc. (Physics Hons.), University of Delhi, Delhi, 1993-1996

Employment:

- Apr. 2009 - present; Assistant Professor, Department of Physics, Indian Institute of Science, Bangalore
- Oct. 2005 - Mar. 2009; Postdoctoral fellow, Department of Physics, University of California, Berkeley

Awards and Honors:

- Award for excellence in teaching: Department of Physics, Princeton University - 2003.
- Joseph Henry Prize, Department of Physics, Princeton University, 2001.

- Graduate Student Fellowship, Princeton University, 2000-2001
- Meera Memorial Prize for the highest CGPA, Department of Physics, Indian Institute of Science, 1999.

Membership of Societies:

- Member of the American Society of Mechanical Engineers since 2008.
- Member of the American Physical Society since 2003.

Professional Activities:

- Advisory Committee, ICTS Condensed Matter Programme in Mahabaleshwar, International Centre for Theoretical Science, Dec. 2009.
- Organizer, Quantum Materials seminar series at UC Berkeley, 2007-2009.
- Organizer, Princeton Mini-School in Condensed Matter Physics, July 2005
- Organizer, Condensed Matter brown bag seminar series at Princeton University, 2003-2004
- Referee, Physical Review Letters, Physical Review B, Solid State Electronics

Publications:

1. *Dynamics after a sweep through a quantum critical point*, F. Pollmann, S. Mukerjee, A. G. Green and J. E. Moore, arXiv:0907.3206 (2009).
2. *Theory of finite-entanglement scaling at one-dimensional quantum critical points*, F. Pollmann, S. Mukerjee, A. Turner and J. E. Moore, Phys. Rev. Lett. **102**, 255701 (2009).
3. *Tuning the electronic effective mass in* $SrTiO_3$, M. L. Scullin, S. Mukerjee, J. Ravichandran, M. Huijben, J. E. Moore, A. Majumdar and R. Ramesh, arXiv:0809.4706, Submitted.
4. *Optimal thermoelectric figure of merit of a molecular junction*, P. Murphy, S. Mukerjee and J. E. Moore, Phys. Rev. B **78**, 161406(R) (2008).
5. *Signatures of diffusion and ballistic transport in the stiffness, dynamical correlation functions, and statistics of one-dimensional systems*, S. Mukerjee and B. S. Shastry, Phys. Rev. B **77**, 245131 (2008).
6. *Vortex lattice transitions in cyclic spinor condensates*, R. Barnett, S. Mukerjee and J. E. Moore, Phys. Rev. Lett. **100**, 240405 (2008).

7. *Anomalously large measured thermoelectric power factor in $Sr_{1-x}La_xTiO_3$ thin films due to $SrTiO_3$ substrate reduction*, M. L. Scullin, C. Yu, M. Huijben, S. Mukerjee, J. Seidel, Q. Zhan, J. Moore, A. Majumdar, and R. Ramesh, Appl. Phys. Lett. **92**, 202113 (2008).

8. *Dynamical models and the phase ordering kinetics of the $S = 1$ spinor condensate*, S. Mukerjee, C. Xu and J. E. Moore, Phys. Rev. B **76**, 104519 (2007).

9. *Dynamical thermal response functions for strongly correlated one-dimensional systems*, M. R. Peterson, S. Mukerjee, B. S. Shastry, J. O. Haerter, Phys. Rev. B **76**, 125110 (2007).

10. *Doping dependence of thermopower and thermoelectricity in strongly correlated systems*, S. Mukerjee and J. E. Moore, Appl. Phys. Lett. **90**, 112107 (2007).

11. *Topological defects and the superfluid transition of the $S = 1$ spinor condensate in two dimensions*, S. Mukerjee, C. Xu and J. E. Moore, Phys. Rev. Lett. **97**, 120406 (2006).

12. *Towards a statistical theory of transport by strongly interacting fermions*, S. Mukerjee, V. Oganesyan and D. A. Huse, Phys Rev. B, **73**, 035113 (2006).

13. *Thermopower of the Hubbard model: Effects of multiple orbitals and magnetic fields*, S. Mukerjee, Phys. Rev. B, **72**, 195109 (2005).

14. *Nernst effect in the vortex liquid regime of a type-II superconductor*, S. Mukerjee and D. A. Huse, Phys. Rev. B, **70**, 014506 (2004).

15. *Ellipsometric investigation of strain reduction in $Si_{1-x-y}Ge_xC_y$ layers compared to $Si_{1-x}Ge_x$ on silicon*, S. Mukerjee and V. Venkataraman, Solid State Electronics, **45**(11), 1875 (2001).

16. *Characterization of strain in $Si_{1-x}Ge_x$ films using multiple angle of incidence ellipsometry*, S. Mukerjee and V. Venkataraman, Appl. Phys. Lett., **77**(22), 3259 (2000).

Workshop and Conference presentations:

1. *Thermal transport in strongly correlated systems*, S. Mukerjee, Series of invited lectures at the ICTS Condensed Matter Programme, Mahabaleshwar 2009.

2. *Thermoelectricity in oxides and weakly coupled single molecules*, S. Mukerjee, Invited talk, March meeting of the American Physical Society, Pittsburgh, 2009.

3. *Thermoelectricty in correlated sytems: Oxides and molecules*, S. Mukerjee, Invited talk, International mechanical engineering congress and exposition (IMECE08) of the American Society of Mechanical Engineers (ASME), Boston, 2008.

4. *Vortex lattice transitions in cyclic spinor condensates*, S. Mukerjee, R. Barnett and J. E. Moore, Contributed talk, The American Physical Society March meeting, New Orleans, 2008.

5. *Thermoelectricity in correlated materials*, S. Mukerjee, Invited talk, Workshop on correlated electrons and frustrated magnetism Goa, India 2007.

6. *Topological defects and the 2D superfluid transition in $S = 1$ spinor condensates*, S. Mukerjee, C. Xu and J. E. Moore, Workshop on correlated states in degenerate atomic gases, KITP, UC Santa Barbara, 2007.
Weblink: http://online.itp.ucsb.edu/online/coldatoms07/mukerjee/
(video, audio and slides)

7. *Topological defects and the 2D superfluid transition in $S = 1$ spinor condensates*, S. Mukerjee, C. Xu and J. E. Moore, Contributed Talk, The American Physical Society March meeting, Denver, 2007.

8. *Phase ordering kinetics of a spinor condensate*, S. Mukerjee, C. Xu and J. E. Moore, Contributed talk, The American Physical Society March meeting, Baltimore, 2006.

9. *Towards a statistical theory of transport in strongly correlated systems*, S. Mukerjee, V. Oganesyan and D. A. Huse, Contributed talk, The American Physical Society March meeting, Los Angeles, 2005.

10. *Transport with interactions: What is the random matrix theory here?*, S. Mukerjee and D. A. Huse, Poster presentation at the Gordon Research Conference on strongly correlated electrons, Mount Holyoke, 2004.

11. *Thermopower of strongly correlated systems in the atomic limit: Effects of magnetic fields and multiple orbitals*, S. Mukerjee, Contributed talk, The American Physical Society March meeting, Montreal, 2004.

12. *Numerical simulation of the Nernst effect in the vortex liquid regime of type-II superconductors with strong fluctuations*, S. Mukerjee and D. A. Huse, Contributed talk, The American Physical Society March meeting, Austin, 2003.

13. *Novel ellipsometric technique to measure strain in SiGe and SigeC thin films*, S. Mukerjee, S. Madhavi and V. Venkataraman, First International Workshop on New Group IV semiconductors (SiGeC), Sendai, Japan, 2001.

14. *Ellipsometric investigation of strain reduction in SiGeC layers compared to SiGe layers grown on SiGe*, S. Mukerjee and V. Venkataraman, International Conference on Communications, Computers and Devices (ICCCD 2000), IIT Kharagpur, 2000.