

EDUCATION

- 2011 Ph. D., Physics, Bar-Ilan University, Israel
2006 M. Sc., Physics, Bar-Ilan University, Israel
2002-06 B. Sc. (cum laude), Physics & Computer Sciences, Bar-Ilan University, Israel

RESEARCH EXPERIENCE

- 2011-15 Postdoctoral Researcher, Mesoscopic Magnetic Imaging, Stanford University, USA
2002-11 Research & Teaching Assistant, Bar-Ilan University, Israel
2010 & 07 Visiting Researcher, Oxide Molecular Beam Epitaxy Group, Brookhaven National Laboratory, USA

HONORS

- 2009-11 Eshkol Fellowship, Israeli Ministry of Science and Technology
2008-09 Excellence in Research Award & Fellowship, Institute for Nanotechnology, Bar-Ilan University, Israel
2006-09 President's Graduate Fellowship, Bar-Ilan University, Israel

PUBLICATIONS

1. I. Sochnikov, L. Maier, C. A. Watson, J. R. Kirtley, C. Gould, G. Tkachov, E. M. Hankiewicz, C. Brüne, H. Buhmann, L. W. Molenkamp, and K. A. Moler, *Non-sinusoidal current-phase relationship in Josephson junctions of the 3D topological insulator HgTe*, **Physical Review Letters**, **114**, 066801 (2015).
2. I. Sochnikov, A. J. Bestwick, J. R. Williams, T. M. Lippman, I. R. Fisher, D. Goldhaber-Gordon, J. R. Kirtley, and K. A. Moler, *Direct measurement of current-phase relations in superconductor/ topological insulator/ superconductor junctions*, **Nano Letters** **13**, 3086, (2013).
3. I. Sochnikov, A. Shaulov, Y. Yeshurun, G. Logvenov and I. Bozovic, *Large oscillations of the magnetoresistance in nano-patterned high-temperature superconducting films*, **Nature Nanotechnology** **5**, 516 - 519 (2010).
4. I. Sochnikov, Y. Shokef, A. Shaulov, and Y. Yeshurun, *Single-loop like energy oscillations and staircase vortex occupation in superconducting double networks*, **Physical Review B** **84**, 024513 (2011).
5. I. Sochnikov, Y. Shokef, A. Shaulov, and Y. Yeshurun, *Dichotomic fluxoid quantization effects in a superconducting double network*, **Journal of Physics** **400**, 022110 (2011).
6. I. Sochnikov, Y. Shokef, G. Logvenov, I. Božović, A. Shaulov, and Y. Yeshurun, *Fluxoid quantization effects in high-Tc superconducting double networks*, **Journal of Physics (invited paper)** **400**, 022109 (2011).
7. I. Sochnikov, I. Bozovic, A. Shaulov, and Y. Yeshurun, *Uncorrelated behavior of fluxoids in superconducting double networks*, submitted, **Physical Review B** (2011).
8. I. Sochnikov, A. Shaulov, Y. Yeshurun, G. Logvenov, and I. Bozovic, *Oscillatory magnetoresistance in nano-patterned superconducting $La_{1.84}Sr_{0.16}CuO_4$ films*, **Physical Review B** **82**, 094513 (2010).
9. I. Sochnikov, A. Shaulov, Y. Yeshurun, G. Logvenov, and I. Bozovic, *Oscillatory magnetoresistance in nano-patterned superconducting $La_{1.84}Sr_{0.16}CuO_4$ films*, **Physical Review B** **82**, 094513 (2010).

10. I. Sochnikov, A. Shaulov, T. Tamegai, and Y. Yeshurun, *Vortex phase transitions in $Bi_2Sr_2CaCu_2O_{8+x}$ probed by nonlinear AC magnetic response*, **Journal of Physics** **150** 052244 (2009).
11. I. Sochnikov, A. Shaulov, and Y. Yeshurun, *Investigation of the vortex order-disorder phase transition line in $Bi_2Sr_2CaCu_2O_{8+d}$ using AC techniques*, **Journal of Applied Physics** **103**, 07C705 (2008).
12. D. Barness, I. Sochnikov, B. Kalisky, A. Shaulov, and Y. Yeshurun, *Oscillatory magnetic relaxation in $Bi_2Sr_2CaCu_2O_{8+\delta}$* , **Physica C** **468**, 280 (2008).
13. Friedman, Y. Wolfus, F. Kopansky, I. Sochnikov, V. Roitberg, S. Asulay, B. Kalisky, and Y. Yeshurun, *I-V Curves of BSCCO Tape Carrying DC Current Exposed to Perpendicular and Parallel AC Fields*, **IEEE Transactions on Applied Superconductivity**, **15**, No. 2 (2005).

TALKS

2015 "Real time imaging of magnetic excitations in the spin ice $Ho_2Ti_2O_7$ ", invited talk, March Meeting, San Antonio, Texas, USA

2014 "Proximity induced superconductivity in the 3D topological insulator HgTe probed with scanning SQUID microscope", invited talk, Physics and Applications of Superconducting Hybrid Nano-Engineered Devices" (SHyNeD 2014) Santa Maria di Castellabate, Italy

2014 "Scanning SQUID microscopy of unconventional Josephson junctions", invited talk, Max Planck Research School entitled "Superconductivity and Magnetism at the Nanoscale", Max-Planck-Institute for Solid State Research, Stuttgart, Germany

2014 "Proximity induced superconductivity in the 3D topological insulator HgTe probed with scanning SQUID microscope", contributed talk, Low Temperature Physics 27 (LT27), Buenos Aires, Argentina

2014 "Proximity induced superconductivity in the 3D topological insulator HgTe probed with scanning SQUID microscope", contributed talk, APS March Meeting 2014, Denver, CO, USA

2013 "Direct measurement of current-phase relations in superconductor/ topological insulator/ superconductor junctions", invited talk, Vortex Matter in Nanostructured Superconductors (Vortex VIII), Greece

2013 "Direct measurement of current-phase relations in superconductor/ topological insulator/ superconductor junctions", contributed talk, March Meeting, Baltimore

2012 "Stability of half-quantum vortices in superconducting networks", contributed talk, March Meeting, Boston

2011 "Single-loop like energy oscillations and staircase vortex occupation in superconducting double networks", invited poster, Vortex Matter 2011 workshop, Chicago, USA

2011 "Large oscillations of the magnetoresistance in nano-patterned high-temperature superconducting films", contributed talk, at the March Meeting, APS, Dallas, USA

2010 "Large oscillations of the magnetoresistance in nano-patterned high-temperature superconducting films", invited talk, The sixth International conference on Mathematical Modeling and Computer Simulation of Materials Technologies, Israel

2010 "Large oscillations of the magnetoresistance in nano-patterned high-temperature superconducting films", Invited seminar, Brookhaven National Laboratory, USA

2010 "Large oscillations of the magnetoresistance in nano-patterned high-temperature superconducting films", contributed talk, Annual Israeli Physics Society Meeting

2010 "Oscillatory magnetoresistance in nano-patterned superconducting $La_{1.84}Sr_{0.16}CuO_4$ films", poster (best poster award), NanoIsrael conference

2010 “Large oscillations of the magnetoresistance in nano-patterned high-temperature superconducting films”, Hagoshrim internal conf., oral presentation, Institute for Nanotechnology and Advanced Materials, Bar-Ilan University, Israel.

2010 “Large oscillations of the magnetoresistance in nano-patterned high-temperature superconducting films”, poster presentation at Russell Berrie Nanotechnology Institute winter school, Dead Sea, Israel.

2007 “Investigation of the vortex order-disorder phase transition line in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$ using ac techniques”, contributed talk at 52nd Annual Conference on Magnetism and Magnetic Materials, Tampa, USA.