

Curriculum Vita

26/06/13

Prof. KEREN AMIT

ID: 058381690

Born: Jan. 7 1964, Israel.

Marital Status: Married +3.

Address: Physics Department, Technion, Haifa, 32000, Israel.

ACADEMIC DEGREES

1994	Ph.D.	Physics Department, Columbia University, USA.
1989	B.Sc.	Physics, Tel Aviv University, Israel Mathematics, Tel Aviv University, Israel.

ACADEMIC APPOINTMENTS

1/6/2009	Prof.	Physics Department, Technion-Israel Institute of Technology
1/8/2003-1/8/2004	Visiting fellow	Mansfield College, Oxford University and Rutherford Appleton Lab. U.K.
6/8/2002	Associate Prof. with Tenure	Physics Department, Technion-Israel Institute of Technology
1/9/1997	Senior lecturer	Physics Department, Technion-Israel Institute of Technology.
1/1/1995 to 1/6/1997	Post doc	Physics department, Universite Paris-Sud (Orsay), France.

RESEARCH INTERESTS

- Magnetism, including spin glasses, frustrated magnets, and magnetic quantum tunneling.
- Superconductivity and in particular magnetic correlations in high temperature superconductors.
- Nuclear Magnetic Resonance and Nuclear Quadrupole Resonance (NMR/NQR).
- Muon Spin Resonance (MuSR).
- Neutron and Raman scattering
- Susceptibility.
- Crystal growth.

TEACHING EXPERIENCE

- Experimental techniques in solid state physics (graduate and undergraduate)
- Physics 2m (undergraduate)
- Physics 1 (undergraduate)
- Statistical Physics (undergraduate)
- Solid state physics (undergraduate)
- Quantum mechanics 1 (undergraduate)

PUBLIC PROFESSIONAL ACTIVITIES

- Member of the muon beam-time scheduling panel at ISIS U.K. (1998-2001).
- Member in the founding committee of the International Society of Muon Spectroscopy (ISMS).
- Fund raising tour for the ATS in association with the new physics building.
- Twice member of Ph.D. committees in the Univ. Paris-Sud (Orsay) France.
- Referee in Phys. Rev. Lett. and Phys. Rev. B.
- Israel Representative to the Highly Frustrated Magnets (HFM) program of the European Science Foundation (ESF).
- Israel delegation to the NMI3 2006 (EU neutron and muon international developing committees).

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- Member of the American Physical Society.
- Member of the International Muon Resonance Society.

HONORS

- 2005, The Henry Taub Prize for Excellence in Research on “Spin Glasses and Superconductivity”.
- 2004, Raymond and Miriam Klein Prize for the research on “Common Energy Scale for Magnetism and Superconductivity in Cuprates”.
- 1998, Excellent Research Project, Israeli Science Foundation.
- 1993, Brilliancy Award: Muon Spin Resonance Summer School, Maui.

GRADUATE STUDENTS

Graduated

- 2002, Zaher Salman, Ph.D., A μ SR AND NMR STUDY OF QUANTUM TUNNELING OF THE MAGNETIZATION IN HIGH SPIN MOLECULES.

- 2003, Amit Kanigel, Ph.D., INTERPLAY BETWEEN MAGNETISM AND SUPERCONDUCTIVITY IN THE CUPRATES.
- 2003, Shahar Levi, MSc., DEVELOPMENT OF A NUCLEAR QUADRUPOLE BASED TECHNIQUE FOR MEASURING CHARGE HOMOGENEITY, AND ITS APPLICATION FOR YBCO.
- 2004, Oren Shafir, MSc., PROBING THE QUANTUM NATURE OF Fe_8 HIGH SPIN MOLECULES USING μ SR.
- 2004, Rinat Ofer, MSc., CORRELATION BETWEEN THE CRITICAL TEMPERATURE OF CUPRATES SUPERCONDUCTORS AND THEIR MAGNETIC INTERACTION
- 2004, Eva Segal, MSc., FRUSTRATION DRIVEN LATTICE DISTORTION IN $Y_2Mo_2O_7$.
- 2005, Alex Zakrassov, Ph.D., MOLECULAR BASED MAGNETIC MATERIALS (Secondary supervisor).
- 2008, Yoval Lubashevsky, MSc, THE ORIGIN OF THE PSEUDOGAP.
- 2008, Oren Ofer, Ph.D., THE IMPACT OF PERTURBATIONS ON FRUSTRATED MAGNETS.
- 2008, Rinat Ofer, Ph.D., UNDERDOPED CUPRATES: DETECTION OF CHARGE INHOMOGENEITY AND THE TRANSITION TO MAGNETIC ORDER.
- 2009, Oren Shafir, Ph.D. INVESTIGATING THE INFLUENCE OF NUCLEAR FLUCTUATIONS ON MAGNETIC QUANTUM TUNNELING.
- 2010, Ekaterian Suhovoy, MSc., PULSED ELECTRON SPIN RESONANCE IMAGING STUDY OF PARAMAGNETIC CENTERS IN THE SOLID PHASE.
- 2010 Lital Marcipar, MSc. GROUND STATE AND EXCITATIONS OF THE SPIN $\frac{1}{2}$ KAGOMÉ LATTICE.
- 2011 Eran Amit Ph.D. INVESTIGATING THE MECHANISM OF HIGH TEMPERATURE SUPERCONDUCTIVITY BY OXYGEN ISOTOPE SUBSTITUTION.
- 2011 Gil Drachuck, M.S, 2D SUPERCONDUCTIVITY IN $La_{2-x}Sr_xCuO_4$ SINGLE CRYSTALS, Graduated 2011.

Theses in Progress

- Expected graduation 2014, Gil Drachuck, Ph.D.
- Expected graduation 2014, Tom Leviant, Ph.D.
- Expected graduation 2013, Shahaf Asban, MSc.

Research assistants

- Menahem Shai
- Galina Bazalitzky

GRANTS

- 1997, Israel Science Foundation (**equipment**), \$80,000, A. Keren.
- 1997-2000, Israel Science Foundation, **Spin Glasses** \$135,000, A. Keren.
- 1998-2001, United States Israel Binational Science Foundation, **Super-Degenerate Magnets**, \$105,000, A. Keren, Y. J. Uemura (Columbia) and G. Luke (Columbia).
- 1999-2001, Israeli Ministry of Science, French-Israeli AFIRST grant, **Molecular Magnets** \$62,000, A. Keren, P. Mendels (Orsay), and M. Verdaguer (Jussieu).
- 2000, Technion internal grants, \$24,500, A. Keren.
- 2001-2005, Israel Science Foundation, **Connection Between Various Critical Temperatures** \$225,000, A. Keren.

- 2003-2005, Bichora, **Nano-Magnets**, \$ 155,000, A. Keren.
- 2004, **Internal funds for the purchasing of a SQUID magnetometer** \$220,000.
- 2005-2009, Israel Science Foundation, **Mechanism of High Temperature Superconductivity** \$270,000, A. Keren
- 2006, RBNI, **Single crystal lab for the technion**, \$200,000, A. Keren, E. Polturak, and G. Koren.
- 2006-2007, RBNI, **Magnetic quantum tunneling in the presence of nuclear fluctuations**. \$40,000, A. Keren and M. Kaftory.
- 2007-2010, Tashtiut, Ministry of science, \$120,000, **Chiral Lathanides Clusters as single-molecule magnets**, A. Shanzer, E. Zeldov, A. Keren.
- 2007-2011, BSF, \$200,000, **Ground state and excitation spectrum of the quantum kagome lattice**, A. Keren and Young Lee.
- 2008-2013, DIP. **Nanostructured hybrids of superconductors and ferromagnets**, K. Koren et al.
- 2009-2013, ISF, \$200,000, **Investigating the mechanism of high temperature superconductivity using single crystal**, A. Keren.
- 2011-2012, RBNI, \$40,000, Detection of photons emitted from molecular nano. A. Keren and S. Rahav.
- 2013-2016, GIF 200,000Euro, **Magnetic Equivalence of the Isotope Effect in Cuprates**, A. Keren and P. Lemmens.