

Minerva Workshop
High Temperature Superconductivity: From Fundamentals to Applications

Organizers: G. Deutscher, Y. Yeshurun and G. Koren

April 12th-14th, 1999

Dan Carmel Hotel

Haifa, Israel

Program

Monday 12th April

ELECTRONIC PROPERTIES

- 08:30-09:10 **G. Deutscher**, Tel Aviv University
Introduction: Pseudo gap and coherence gap
- 09:10-9:35 **A. Cohen and Y. Dagan**, Tel Aviv University
Temperature Dependence of Andreev Reflections
- 09:35-10:00 **E. Farber**, Tel Aviv University
Low temperature behaviour of the penetration depth in high quality YBCO films: unconventional symmetry or fluctuation effects?
- 10:00-10:30 *Coffee Break*
- 10:30-11:15 **C.C. Tsuei**, Watson Research Center, IBM
Charge confinement in cuprate superconductors: an explanation of the normal state resistivity and pseudogap
- 11:15-12:00 **R. Hackl**, Walther-Meissner Institute, Garching
Evolution of electronic anisotropies in superconducting and antiferromagnetic cuprates: a Raman scattering study
- 12:00-14:30 *Lunch Break*
- 14:30-15:05 **L. Alff**, University of Köln
Unconventional order parameter symmetry in high-T_c superconductors: implications for Josephson junctions
- 15:05-15:25 **R. Krupke**, Tel Aviv University
Time reversal symmetry breaking effects at the surface of epitaxial YBCO a-axis films
- 15:25-16:00 **H. Hilgenkamp**, University of Augsburg
Can the critical current density of grain boundaries in high-T_c superconductors be enhanced?
- 16:00-16:30 *Coffee Break*
- 16:30-17:10 **E. Polturak**, Technion
Effective coherence length in bilayers of anisotropic HTS
- 17:10-17:50 **O. Neshor**, Technion
Directional tunneling in oxygen deficient YBCO edge junctions
- 17:50-18:05 **M. Weger**, Hebrew University
The ferroelectric scenario for the high temperature superconductors

Tuesday 13th April
VORTEX MATTER

- 08:30-09:00 **R. P. Huebener**, University of Tübingen
Hermann Rietschel: 1937-1998
- 09:00-09:35 **T. Natterman**, University of Köln
Vortex glass phases in HTS
- 09:35-10:10 **D. Giller**, Bar-Ilan University
Disorder-induced vortex solid-solid transition in HTS
- 10:10-10:40 *Coffee break*
- 10:40-11:15 **S. Soibel**, Weizmann Institute
Nucleation and propagation of the vortex-lattice melting transition
- 11:15-11:50 **N. Bontemps**, Ecole Normale Supérieure, Paris
Probing the liquid-solid phase diagram with microwave dissipation in BSCCO single crystal
- 11:50-16:00 *Lunch Break*

(Beirat Meeting I)
- 16:00-16:35 **D. Davidov**, Hebrew University
Study of HTS films using near field millimeter waves and microwaves microscopes
- 16:35-17:10 **B. Shapiro**, Bar-Ilan University
Explosive nucleation of superconductivity and vortex-antivortex liquid in Type-I and Type II systems
- 17:10-17:45 **G. Jung**, Ben-Gurion University
Coherent vortex motion in artificial periodic potential structures in HTS thin films
- 17:45-18:20 **V. Vlasko-Vlasov**, Argonne N.L.
Understanding magnetization in SC through magneto-optic imaging
- 20:00** *The Workshop Dinner (invitations required)*

Wednesday 14th April
APPLICATIONS

- 08:30-9:10 **P. Komarek**, Forschungszentrum, Karlsruhe
The worldwide effort on fault current limiters (FCL) with respect to their application potential
- 09:10-09:35 **A. Gerber**, Tel Aviv University
The FCL project in Ben Gurion and Tel Aviv Universities
- 09:35-10:00 **H. Neumüller**, Siemens
Development of Resistive Fault Current Limiters
- 10:00-10:30 *Coffee Break*
- 10:30-11:00 **M. Hein** University of Wuppertal
Microwave Surface Impedance of HTS: Features of the pair state, and potential for applications
- 11:00-11:30 **Y. Koral**, Elisra
The HTS Multiplexer and phase shifter project in Elisra, the Technion and Tel-Aviv University
- 11:30-12:00 **N. Levy**, Technion and **I. Okashi**, Tel Aviv University
Large area YBCO thin films for the Multiplexer project
- 12:00-14:00 *Lunch Break*
- 14:00-14:15 **A. Einav**, Chief Scientist, Ministry of National Infrastructure
HTS high power applications in Israel
- 14:15-14:30 **D. Weiner**, Israel Electricity Corporation, Haifa
SMES application in electricity utility
- 14:30-15:00 **R. Flükiger**, University of Geneva
Physical metallurgy and preparation of wires and tapes of HTS materials
- 15:00-15:30 **V. Beilin**, Hebrew University
Evolution of current controlling factors in the thermo-mechanical processing of Ag/Bi2223 superconducting tapes
- 15:30-16:00 **S. Wolfus**, Bar Ilan University
The HTS SMES project at Bar Ilan University
- 16:00-16:30 *Coffee Break*
- 16:30-17:00 **H. Kinder**, Technical University of München,
Large Area YBCO Films on single crystalline and textured substrates
- 17:00-17:15 **R.P. Huebener**, University of Tübingen
Quality testing of large area films of HTS
- 17:15-17:30 **G. Deutscher**, Tel Aviv University
Growth of YBCO films on metallic substrates
- 17:30-17:45 **E. Polturak**, Technion
The HTS experiment on the Technion satellite
- 17:45-18:00 **S. Reich**, Weizmann Institute of Science
Surface superconductivity in WO₃
- 18:00 *Concluding Remarks*
- 19:00 *Beirat Meeting II*