Symposium
on
Multi-Scale Dislocation Dynamics

Funded by the
National Science Foundation

University of California in San Diego
La Jolla, CA

January 19-20, 2008

Chair: Xanthippi Markenscoff

Program
Saturday, January 19, 2008

9:30 – 10:15	**Vaclav Vitek** with R. Gröger	***Multiscale Modeling of Plastic Deformation of Transition BCC Metals From Atomic to Continuum Level***
10:15 – 11:00	**Gang Lu** with Emily Carter	***A True Quantum Formulation of Quasicontinuum Method***
11:00 – 11:15		**Coffee Break**
11:15 – 12:00	**Michael Ortiz** with A. Ramasubramaniam, M. P. Ariza	***A Discrete Mechanics Approach to Dislocation Dynamics in BCC Crystals***
12:00 – 12:45	**Vikram Gavini** with M. Ortiz and K. Bhattacharya	***Nucleation of prismatic dislocation loops - An electronic structure study***
12:45 – 1:45		**Lunch Break**
1:45– 2:30	**Nasr Ghoniem**	***Plasticity in Small Volumes***
2:30 – 3:00	**Ting Zhu** with Ju Li	***Interfacial Plasticity***
3:00 – 3:30	**Yuri Osetskiy** with D. Bacon	***New Results on Atomic Scale Dislocation Dynamics either in General Plasticity or in Application to Radiation Damage***
3:45 – 4:00		**Coffee Break**
4:00 – 4:30	**Daryl C. Chrzan**	***Structure of Dislocation Cores in GaAs: Theory and Experiment***
4:30– 5:00	**Elif Ertekin** with Daryl C. Chrzan	***Multi-scale Approach to Dislocation Dynamics in Carbon Nanotubes***
5:00- 5:30	**Hanchen Huang**	***Twinned Nanorods: Synthesis and Dislocation Anomaly***
6:45		**Dinner at Pacifica Del Mar**

Program
Sunday, January 20, 2008

9:00 – 9:45	**Wei Cai**	***Dislocation Dynamics and Plasticity in FCC and BCC Single Crystal Micro-Pillars***
9:45– 10:15	**Mike Baskes** with Wei Cai	***Atomistic calculations of dislocations in Au***
10:15 – 10:45	**Klaus Schwarz**	***Applied Dislocation Dynamics***
10:45 – 11:00		**Coffee Break**
11:00 – 11:30	**Kaushik Bhattacharya**	***Evolutionary processes in heterogeneous media***
11:30 – 12:00	**Xanthippi Markenscoff** with Luqun Ni with Surong Huang	***The Effective Mass of an Accelerating Dislocation*** **and** ***Can a Dislocation Accelerate through the Shear-Wave Speed Barrier?***
12:00 – 1:15		**Lunch**
1:15 – 1:45	**Mitchell Luskin** with Marcel Arndt and Matthew Dobson	***Goal-Oriented Atomistic-Continuum Modeling and Mesh Refinement for Dislocations***
1:45 – 2:15	**Yang Xiang**	***A generalized Peierls-Nabarro model for curved dislocations***
2:15 – 2:45	**Shaofan Li**	***A nonequilibrium molecular simulation of dislocation propagation***
2:45 – 3:15	**Nick Kioussis**	***Effect of Chemistry on Dislocation Core Properties: A Multiscale Approach***
3:15 – 3:30		**Coffee Break**
3:30 – 4:00	**Anter El-Azab**	***Statistical mechanics of dislocations—a multiscale framework for collective dislocation dynamics in deforming crystals***
4:00 – 4:30	**Amine Benzerga** with E. Van der Giessen	***Mechanism-based Discrete Dislocation Plasticity***
4:30 – 5:00	**Lucia Nicola** with A. Needleman, E. Van der Giessen	***Multi-asperity Contact***
5:00-6:00		**Panel Discussion: M. Baskes, D. Chrzan, N. Ghoniem, V. Pontikis, V. Vitek**
7:00		***Dinner TBD***