

HIGH PRESSURE PHASE TRANSFORMATIONS

ABOUT THE WORKSHOP

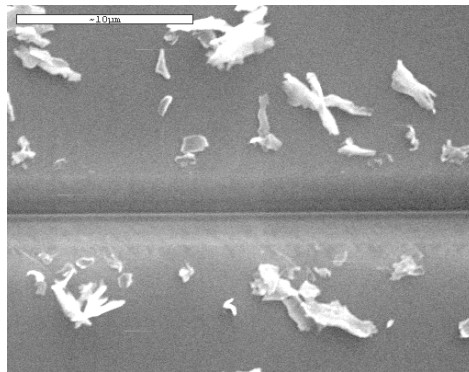
August 16-17,
2004

The workshop is a part of a National Science Foundation (NSF) Focused Research Group (FRG) research program. This research initiative includes materials scientists, manufacturing/mechanical engineers, and physicists. The goal of the workshop is to convene a larger audience to explore and discuss the nature of high pressure phase transformations that occur during indentation and machining processes and to elaborate on the research opportunities they provide. The workshop presentations and posters will convey information and theories about the latest research efforts in this field.

Visit our technical web site <http://www.micro.physics.ncsu.edu>

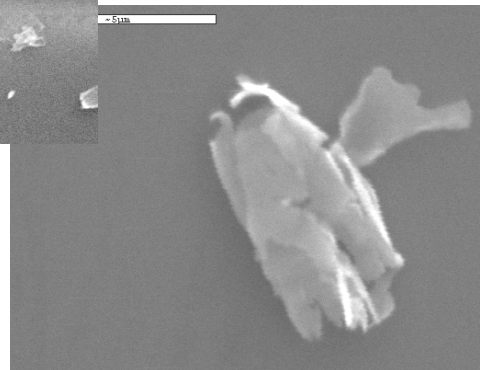
WORKSHOP LOCATION

North Carolina State University
EGRC Building
2410 Campus Shore Drive
NCSU Centennial Campus
Raleigh, NC 27695, USA



Ductile Scratch on Silicon and Generated Debris (NCSU)

Close-up of Ductile Debris (NCSU)



WORKSHOP GOALS

- Knowledge and awareness of recent advantages regarding the high pressure phase transformations of semiconductors and ceramics.
- Interact with the broader scientific community working on these materials.
- Discuss technical and manufacturing issues associated with advanced engineering of the materials.
- Participate with future program and planning activities.
- Characterize the role and influence of high-pressure phase transformations during manufacturing processes on silicon, germanium, silicon nitride and silicon carbide.

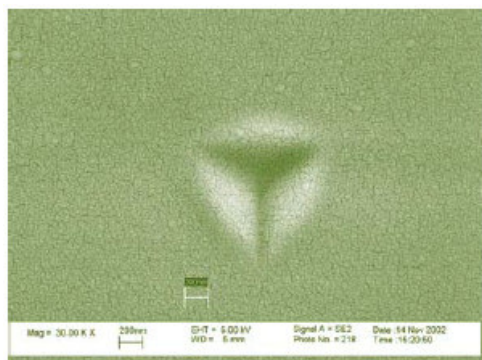
CALL FOR ABSTRACTS: TOPICS COVERED

One page abstracts are requested (see submission information below)

- High pressure phases (HPP) and phase transformations (HPPT) of semiconductors and ceramics: Si, Ge, Si_3N_4 , SiC, etc.
- HPP of other materials
- Machining and single point diamond turning
- Nano-indentation
- Polishing and chemo mechanical polishing
- Ductility of semiconductors and ceramics
- HPPT to metallic phases
- Mechanical, thermal, electrical and optical effects in HPP
- In-situ and post-process analysis of HPPT
- Amorphous and crystalline material dependences of HPPT
- Surface science and engineering
- Friction and wear at the nano-scale

WHO SHOULD ATTEND?

Engineers and Scientists working on advanced engineering materials and involved in design, testing, and manufacturing. Structural ceramics, microelectronics, and optical components will be highlighted. Knowledge about the high pressure behavior of semiconductors and ceramics will be emphasized.

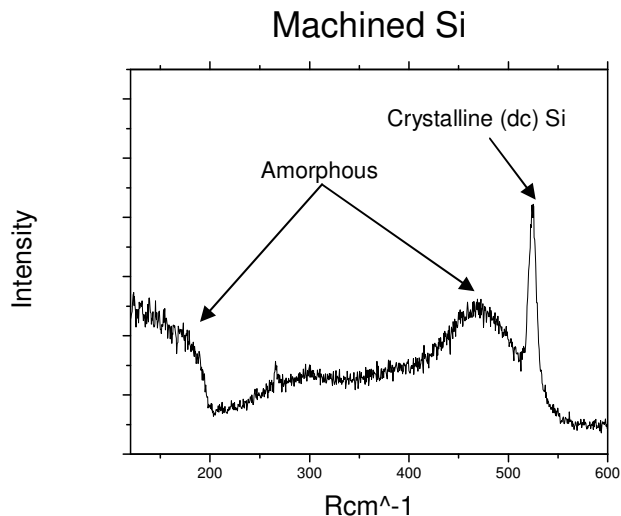


Ductile indent on single crystal SiC (UT-K)

Workshop fees, accommodations, schedules, and additional information will be distributed shortly.

To express interest in attending or to submit an abstract, please send e-mail with "HPPT Workshop" as subject line to:

Lara_Bodenhamer@ncsu.edu



Raman spectrum of diamond turned single crystal silicon in ductile regime (NCSU)

WORKSHOP ORGANIZERS

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Organizing Committee

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