

ZERNIKE INSTITUTE COLLOQUIUM

Thursday, October 2nd, 2008

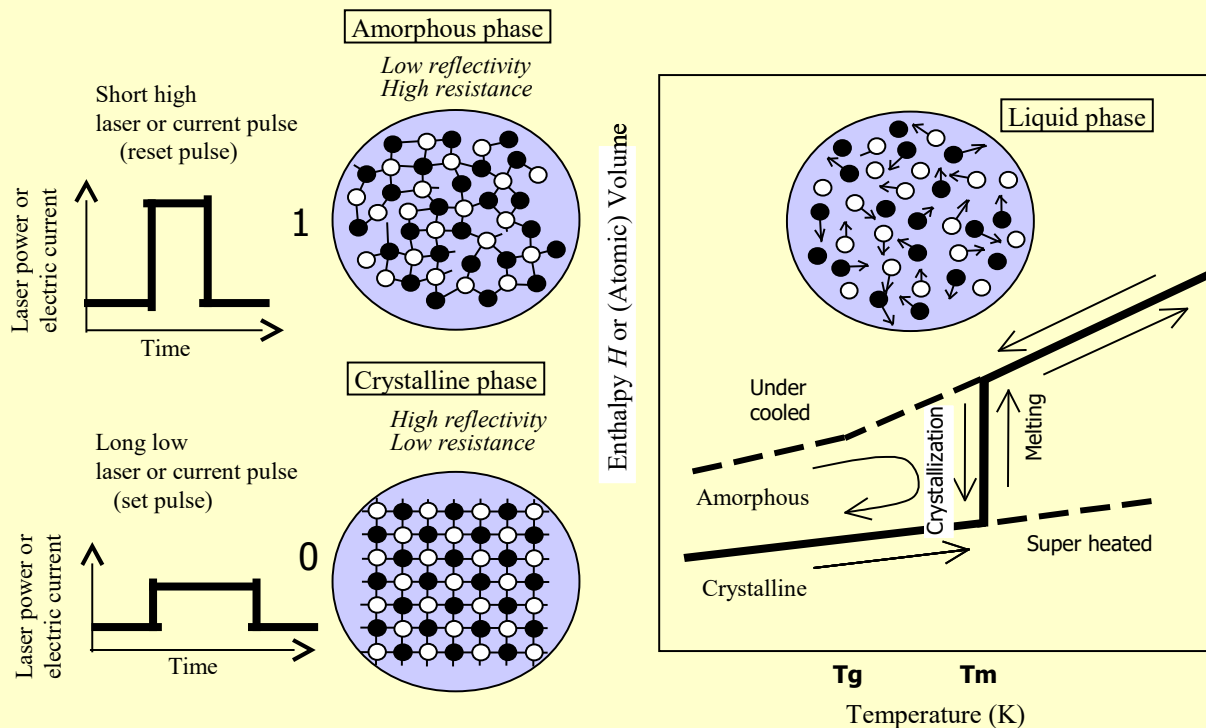
16:00h, Lecture Hall: 5111.0080

Coffee and cakes from 15:30h

Phase Change Materials: The Importance of Resonant Bonding

Prof. Matthias Wuttig

RWTH Aachen University, Germany



M. Wuttig and N. Yamada, Nature Materials 6, 824 (2007)

Phase change media are among the most promising materials in information technology. There are already employed in rewriteable optical data storage and are explored in non-volatile electronic devices to replace flash memory. These materials are characterized by a large property contrast between the amorphous and crystalline state. This contrast is attributed to a pronounced change in bonding between the two phases. It will be shown that the crystalline state of phase change materials has unique properties that can be attributed to resonance bonding. A map will be discussed which shows that phase change behaviour only exists for a selected range of chalcogenides with well defined structure and unique bonding properties.

