

Symposium Program

Tuesday, 23. September 2003

7:30 p.m. **Welcome Reception**

Wednesday, 24. September 2003

9:00 p.m. **Opening**

Indentation Testing on Materials with Microstructures

9:10 a.m. **Application of multi-scale hardness testing and observation technique to metal research** / *Kensuke Miyahara (invited lecture)*

10:00 a.m. **Mechanical properties of treated and untreated wood cell walls** / *Thomas Schoeberl*

10:25 a.m. **Quasi-static and dynamic nanoindentation testing of single lamellar and inter-lamellar trabecular bone structures** / *Thorsten Staedler*

10:50 a.m. - 11:20 a.m. **Coffee Break**

11:20 a.m. **Nano-mechanical characterization of Ti-base nanostructure-dendrite composite** / *German Alcalá*

11:45 a.m. **Mechanical Properties of Thin SiO₂ Plasma Polymers as Hard Surface Layers on Aesthetic Organic Coatings** / *Lihong Yang*

12:10 p.m. **Determination of fracture toughness from nanoindentation measurements** / *Thorben Scholz*

12:35 p.m. **Structure refinement on hardness and fracture properties of nano-composite hard thin films** / *Ayat Karimi*

1:00 p.m. - 2:00 p.m. **Lunch**

nano Tribology

2:00 p.m. **The Gap between Nano and Micro Tribology** / *Bharat Bhushan (video, invited lecture)*

3:00 p.m. **Nano-Scratch Testing and Nanoindentation on thin DLC-Coatings for Micro Actuators – Friction, Wear and Plastic Deformation** / *Rolf Küster*

3:25 p.m. - 5:00 p.m. **Coffee Break & Poster Session**

5:00 p.m. **Nanoscratching on Crystal Surfaces** / *Gerd Kaupp*

5:25 p.m. **Surface topography and nanomechanical/tribological behaviour of ultrathin nitrides films PVD deposited on silicon without and with SiO₂ or Si₃N₄ ultrathin films as underlayer material** / *Zygmunt Rymuza*

5:50 p.m. **Study of the interfacial shear strength at the nanometer scale by scanning force microscopy (SFM)** / *Michel Troyon*

7:00 p.m. **Conference Dinner**

Thursday, 25. September 2003

Analysis of the deformation process under the indenter

- 9:00 a.m. **A method to extract plastic properties of bulk materials by instrumented sharp indentation taking into account the shape ratio** / *Simon Malherbe*
- 9:25 a.m. **Determining the modulus, Poisson ratio, thickness and density of thin coatings by combining acoustic and instrumented (nano)indentation test methods** / *Giles Aldrich-Smith*
- 9:50 a.m. **Neural Networks for identification of viscoplastic behaviour of thin film on a substrate from spherical indentation data** / *Edouard Tioulioukovski*
- 10:15 a.m. **Finite Element investigation of nanoIndentation in two-phase materials** / *Karsten Durst*
- 10:40 a.m. - 11:10 a.m. Coffee Break
- 11:10 a.m. **Obtaining mechanical parameters for metallisation stress sensor design using nanoindentation** / *Sorin M. Soare*
- 11:35 a.m. **Viscosity of glass at high contact pressure during indentation experiments** / *Holger Meinhard*
- 12:00 p.m. **Challenges and interesting observations associated with feedback-controlled nanoindentation** / *Oden Warren*
- 12:25 p.m. - 2:00 p.m. Lunch
- 2:00 p.m. **Comparison of Hardness and Young's modulus by Single Indentation and Multiple Unloading Indentation** / *Kirsten Schiffmann*
- 2:25 p.m. **An Investigation into the Comparability of Dynamic and Static Nanoindentation Measurements** / *Simon A. Hayes*
- 2:50 p.m. **Dynamic Indentation Measurements on amorphous materials** / *Jose Fernandez Palacio*
- 3:15 p.m. **The indentation size effect with pyramidal and spherical indenters** / *George Pharr (video, invited lecture)*
- 4:15 p.m. Farewell & Closing

Poster:

- 1) **The surface topography and nanomechanical properties of organosilicon ultrathin films deposited on polycarbonate by pulsed discharge at atmospheric pressure** / *Magdalena Ekwinska*
- 2) **A topography-analysis-based approach to improving the measurement accuracy of a nanoindentation instrument** / *Zhi Li*
- 3) **Experimental investigation of the FE-based computational model for predicting the interaction between nanoindenters and thin films** / *Zhi Li*
- 4) **Measurement capabilities in the field of Metrological Scanning Force Microscopes at PTB** / *Zhi Li*
- 5) **Metrology and Design Issues for Advanced Multi-range Nanomechanical Test Instruments** / *Anatas Daugela*
- 6) **Mechanical Defect Analysis using Ultrasonic Force Microscopy and Nanoindentation** / *Holm Geisler*
- 7) **Nanomechanical properties of compositional spreads possessing novel ferromagnetic shape-memory alloys** / *Ude D. Hangen, Oden Warren*

8) Influence of Storage and Experimental Environment on Nanoindentation Results on Human Teeth / *Thomas Schoeberl*