

## Nano-Indentation Material Characterization in Poromechanics

Chair: Prof. Christopher Bobko  
North Carolina State University, USA

### Session I (09:45 – 12:00; June 9, 2009, Room 555)

- **Keynote** - Prof. Franz-Josef Ulm (USA)  
*The Nanogranular Nature of Hydrated Porous Materials: Concrete, Shale and Bone*
- 133 J. Alberto Ortega, Christopher Bobko, Franz-Josef Ulm & Younane N. Abousleiman (USA)  
*The Nanogranular Origin of Macroscopic Elasticity Properties of Geomaterials*
- 141 Christopher P. Bobko & Franz-Josef Ulm (USA)  
*Assessing the Nanogranular Morphology, Elasticity, and Strength of Porous Clay in Shale by Nanoindentation*
- 125 Matthieu Vandamme & Franz-Josef Ulm (USA)  
*Nano-Porosity as the Governing Parameter of Creep of Calcium-Silicate-Hydrates*
- Andreas Fritsch, Luc Dormieux, Christian Hellmich, & Julien Sanahuja (Austria)  
*Elasticity and Strength of Porous Hydroxyapatite Biomaterials: A Continuum Micromechanics Approach*

### Session II (15:45 – 18:00; June 9, 2009, Room 477)

- 142 G. Constantinides, I. Kalcioglu, J.F. Smith & K.J. Van Vliet (Cyprus)  
*Nanoindentation in Fluid: A Pathway to Porochemical Materials Characterization*
- 135 Minh H. Tran, Younane N. Abousleiman, Son K. Hoang, J. Alberto Ortega & Franz-J. Ulm (USA)  
*The Make Up of Nano-Indentation in Engineering Applications*
- 97 Valeriya Shulakova, Marina Pervukhina, Tobias M. Muller, Maxim Lebedev, Fabian Wenzlau, Boris Gurevich & Ben Clennell (Australia)  
*Finite-Difference Simulations and Laboratory Measurements of Attenuation and Dispersion in Patchy-Saturated Rocks*
- 103 Siavash Ghabezloo, Jean Sulem, Sylvine Guedon & Jeremie Saint-Marc (France)  
*Poromechanical Behaviour of A Hardened Oil-Well Cement Paste*
- 224 Xiaojun Wang, Kolluru V. Subramaniam & Feng-Bao Lin (USA)  
*Investigation of Microstructure Evolution in Cement Paste through Setting using Poroelastic Parameters obtained from Ultrasonic Wave Reflection*