

**SUMMER SCHOOL**  
*Thessaloniki: 2 – 3 May 2007*  
**MULTISCALE MATERIAL MECHANICS AND ENGINEERING SCIENCES**  
**FROM MACRO TO NANO SCALES**

**PROGRAM**

*Wednesday, May 2<sup>nd</sup>*

**Main Amphitheater, Polytechnic School AUT**

**9:00 – 12:00**                    *Multiscale Mechanics and Materials Invited Lecturers*

- ❖ **M. Zaiser** (Edinburgh/UK)  
*Gradients and Randomness in Plastic Flow: Nanoscale Applications*
- ❖ **S. Forest** (Ecole des Mines/FR)  
*Mechanics of Generalized Continua and Metallic Foams: Applications to Automotive & Battery Industries*
- ❖ **P. Steinmann** (Kaiserslautern/DE)  
*Configurational Mechanics, Fracture and Applications to Metallic, Nonmetallic and Biological Materials*

**12:00 – 13:00**                    *Lunch Break*

**13:00 – 15:30**                    *Multidisciplinary Engineering Sciences Lectures\**

- ❖ **D. Kugiumtzis** (AUT /GR)  
*Non-Linear Time Series Analysis with Applications to Engineering*
- ❖ **A. Kazantzis** (Groningen/NL)  
*The influence of zonal dislocations in the macroscopic mechanical response of the Laves phase Cr<sub>2</sub>Nb*
- ❖ **G. Exadaktylos** (TUC/GR)  
*Some Aspects of 3D Numerical Modeling of Underground Excavations in Heterogeneous Rock Masses*
- ❖ **S. Kourkoulis** (NTUA/GR)  
*Joining fragmented architraves using Ti bars: The case of the Parthenon*

**DEFINO Final Meeting**

A Short Meeting between the DEFINO Scientists in Charge will be held in parallel with the above Session, pertaining to: (i) *Nodes' Scientific Outcome*, (ii) *Young Researchers' Main Results*, (iii) *Connections to Industry*, (iv) *Financial Report*, (v) *Residual/Overspent Funds*

**15:30 – 16:00**                    *Break*

**16:00 – 18:00**                    *Presentations by RTN/DEFINO Young Researchers/POSTERS*

**K. Aifantis** (Ecole de Mines/AUT), **A. Wiczorek** (AUT/Vienna), **F. Spieckermann** (AUT/Vienna), **G. Ribarik** (AUT /Eötvös), **I. Quintana-Alonso** (Cambridge)

**18:00 – 19:00**                    *Break*

**19:00 – 22:00**                    *Art – Science – Technology – Society – Interactions*

*Workshop I: The Ancient Hellenic Architecture and Technology*

- **C. Palyvou** (AUT/GR)  
*Prehistoric Aegean Architecture and Culture – Akrotiri Thera*
- **J. Seiradakis** (AUT/GR)  
*The Antikythera Mechanism-Calculator of the Hellenistic Period*

*Thursday, May 3<sup>rd</sup>*

**Main Amphitheater, Polytechnic School AUT**

**9:00 – 12:00**                    *Multiscale Mechanics and Materials Invited Lectures*

- ❖ **A. Ngan** (Hong Kong/HK)  
*Nanoindentation and Applications to Metallic, Nonmetallic & Biological Materials*
- ❖ **D. Bammann** (Sandia/US)  
*Continuum Mechanics of Structured Media. Defects and Industrial Applications*
- ❖ **V. Koutsos** (Edinburgh/UK)  
*Atomic Force Microscopy and Applications to Soft Matter and Biomedicine*

**12:00 – 13:00**                    *Lunch Break*

**13:00 – 15:30**                    *Multidisciplinary Engineering Sciences Lectures*

- ❖ **A. Konstantinidis** (AUT/GR)  
*Gradients, Wavelets and Neural Networks: Applications on Size Effects and Material Heterogeneity*
- ❖ **Ch. Polatoglou** (AUT /GR)  
*Strain in Nanostructures*
- ❖ **G. Dimitrakopoulos** (AUT /GR)  
*Defects and mismatch relaxation in III-N compound semiconductors*
- ❖ **T.V. Yioultsis** (AUT/GR)  
*Advanced Techniques of Computational Electromagnetics*

**15:30 – 16:00**                    *Break*

**16:00 – 18:00**                    *Presentations by Engineering Young Researchers/POSTERS*

**I. Kioseoglou** (AUT/GR), **G. Mokios** (AUT/GR), **A. Valsamidis** (Brussels/BE), **E. Glynos** (Edinburgh/UK)

**18:00 – 19:00**                    *Break*

**19:00 – 22:00**                    *Art – Science – Technology – Society – Interactions*

*Workshop II: The Scientist's Humane and the Human's Cosmological Perspective*

*Coordinators: P. Papadopoulos – S. Delivoyatzis*

- **G. Lazarides** (AUT/GR)  
*Elementary Particles and Microcosmology*
- **A. Strano** (Athens/GR)  
*Humanism and Science*
- **Discussion**