



July 4-11, 2017

Thessaloniki, Greece

<http://ams17.web.auth.gr>

Tentative Program

DAY 1: TUESDAY, July 4th, 2017

Venue: KEDEA

08:30 – 09:30 Registration

09:30 – 10:00 Welcome addresses

10:00 – 11:15 Multifunctional materials (D.C. Lagoudas)

- Active Materials: shape memory alloys, shape memory polymers, magnetic shape memory alloys
- Multifunctional composites
- Technical problems in the sector

11:15 – 11:30 Break

11:30 – 12:30 Porous materials and 3D scaffolds (N. Michailidis)

- Introduction to porous materials and scaffolds, and their applications
- Classification of porous materials and manufacturing processes
- Characterization of the porosity and pore reconstruction methods
- Mechanical properties and testing
- Technical problems in the sector

12:30 – 13:00 Introduction to Educational Assessment (J. Henderson)

13:00 – 14:00 Lunch

14:00 – 17:00 Laboratory hands on session PART 1

- Mechanical Testing

Venue: AUTH

20:00 – 22:00 Welcome dinner

DAY 2: WEDNESDAY, July 5th, 2017

Venue: ALUMIL–CFT

Visit to Alumil headquarters and CFT.

09:00 – 09:30 Presentation of Alumil–CFT activities

09:30 – 10:15 Continuum Thermodynamics (Th. Baxevanis, D.C. Lagoudas)

- Conservation principles
- 2nd law of thermodynamics
- Constitutive relations
- Internal state variables
- Elastic–plastic materials
- Shape memory alloys (SMAs)

10:15 – 11:15 Micromechanics / Thermomechanical behavior of active materials PART 1 (D.C. Lagoudas, F. Meraghni)

- Eshelby solution
- Effective properties
- Strain and stress concentration tensors
- Self-consistent; Mori Tanaka approximations for effective properties
- Experimentation and modeling

11:15 – 11:30 Break

- 11:30 – 12:15** Micromechanics / Thermomechanical behavior of active materials PART 2
(D.C. Lagoudas, F. Meraghni)
- 12:15 – 13:15** Corrosion of SMAs (H. Castaneda-Lopez)
- Introduction to the corrosion of SMAs
 - Electrochemical corrosion
- 13:15 – 13:45** Light lunch
- 14:30 – 15:30** Industrial visit to CFT
- 15:30 – 19:00** Small excursion and Dinner

DAY 3: THURSDAY, July 6th, 2017

Venue: BETA CAE SYSTEMS

Visit for training to BETA CAE SYSTEMS.

- 09:00 – 10:00** Company profile presentation – Introduction to CAE
- 10:00 – 11:30** Introduction to pre-processing – Composites modelling
- 11:30 – 12:00** Break
- 12:00 – 14:00** Pre & Post processing for composites
- 14:00 – 15:15** Lunch
- 15:15 – 16:00** Computational Fluid dynamics for Engineering applications
- 16:00 – 16:45** Design Optimization using Fluid-Structure Interaction and Kinematics Analysis
- Free time

DAY 4: FRIDAY, July 7th, 2017

- 09:00 – 11:15** Introduction to homogenization methods
(T. Baxevanis, N. Charalambakis, F. Meraghni) *Venue: AUTH-CompLab*
- Basic concepts
 - Periodic unit cell problem; boundary conditions
 - Elasticity problem, microequations and macroequations
 - Computational scheme and examples for various unit cell problems
 - Thermoelasticity
 - Inelastic unit cell problems
- 11:15 – 11:30** Break
- 11:30 – 14:00** Computer hands on session PART 1
(T. Baxevanis, N. Charalambakis, F. Meraghni) *Venue: AUTH-CompLab*
- 14:00 – 15:00** Lunch
- 15:00– 17:00** Laboratory hands on session PART 2 *Venue: AUTH*
- Corrosion
- Free time

DAY 5: SATURDAY, July 8th, 2017

Free day.

DAY 6: SUNDAY, July 9th, 2017

Excursion to Chalkidiki and exchange with the instructors.

DAY 7: MONDAY, July 10th, 2017

Venue: AUTH-CompLab

- 09:00 – 11:00** Computer hands on session PART 2
(N. Charalambakis)
- 11:00 – 11:15** Break
- 11:15 – 13:00** Work on technical projects
- 13:00 – 14:00** Lunch
- 14:00 – 15:00** Educational Assessment
- Free time for preparation of final presentations

Presentation of projects

09:00 – 11:00 Technical project presentations PART 1

11:00 – 11:30 Break

11:30 – 13:30 Technical project presentations PART 2

13:30 – 14:30 Lunch

14:30 – 15:30 Educational Assessment

20:00 – Dinner and presentation of certificates to participants

KEDEA: Aristotle University's Research Dissemination Center, 3is Septemvriou – Panepistimioupoli
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3) CompLab: Computer Lab, Civil Engineering Department, Thessaloniki, Greece

BETA: BETA CAE Systems S.A., Kato Scholari, Thessaloniki, GR-57500 Epanomi, Greece

ALUMIL: Alumil S.A., Aluminium extrusion, Showroom, Evosmos-Thessaloniki-Greece

CFT: CFT LTD, Carbon fiber technology, Industrial area, Kilkis, Greece

Organizing Institutions



Participating Institutions



Supporters

