DeMEASS V

October 28-31, 2012
Ulrichsberg, Austria

Hotel »
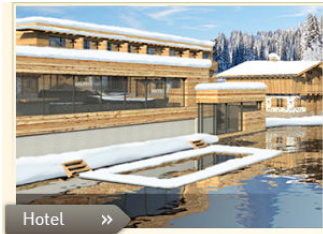
Fifth International
Symposium on

Design,
Modelling and
Experiments of
Advanced
Structures and
Systems

Draft Programme

HOSTING ORGANISATION

Austrian Center of Competence in Mechatronics, Linz, Austria

GENERAL CHAIRMEN

Erasmo Carrera, Politecnico di Torino, Italy
Thomas Wallmersperger, Technical University of Dresden, Germany
Olivier Polit, Univ. Paris Ouest-Nanterre-La Defense, France
Salim Belouettar, CRP Henri Tudor, Luxembourg
Michael Krommer, Johannes Kepler University Linz, Austria

ORGANIZING COMMITTEE CHAIRMAN

Michael Krommer, Johannes Kepler University Linz, Austria

organized by

Austrian Center of Competence in Mechatronics
Altenbergerstr.69, A-4040 Linz, Austria
www.accm.co.at

DeMEASS V
Design, **M**odelling and **E**xperiments of
Advanced **S**tructures and **S**ystems

SUNDAY, October 28th

Welcome Dinner: 19:30

MONDAY, October 29th

Welcome Messages: 09:00 - 09:15

Session M1: Chair – E. Carrera		
Time	Presenting Author	Title of Presentation
09:15 - 09:45	G. Giunto	Higher-Order Models for the Analysis of Functionally Graded Beams
09:45 - 10:15	O. Eberhardt	Calculation of the mechanical properties of Carbon Nanotubes using a Molecular Mechanics approach

Coffee Break: 10:15 - 10:35

Session M2: Chair – T. Wallmersperger		
Time	Presenting Author	Title of Presentation
10:35 - 11:05	M. Petrolo	Refined 1D-Elements for multifields analysis.
11:05 - 11:35	M. Filippi	On the use of refined 1D structural models for reinforced cylinders with ends sealed
11:35 - 12:05	E. Carrera	Accurate 1D structural models for the analysis of non-homogeneous biomechanical structures

Lunch: 12:05 – 13:30

Session M3: Chair – S. Bellouttar		
Time	Presenting Author	Title of Presentation
13:30 - 14:00	A. Attaran	Development of a Thermodynamically Consistent Model of Hydrogels and its Finite Element Implementation
14:00 - 14:30	S. Zwecker	Modeling and simulations of thin actuators made from dielectric elastomers considering viscoelasticity

DeMEASS V
Design, **M**odelling and **E**xperiments of
Advanced **S**tructures and **S**ystems

| 14:30 - 15:00 | M. Azaouzi | Finite Element Stent Design |
| 15:00 – 15:30 | M. El Hachemi | Wave damping using elastic metamaterial |

Coffee Break: 15:30 – 15:50

Session M4: Chair – O. Polit		
Time	Presenting Author	Title of Presentation
15:50 – 16:20	H.Q. Nguyen	Computation of the thermal dissipation during a fish eye crack growth in gigacycle fatigue regime
16:20 – 16:50	Ch. Wenzel	Coupling of incompatible kinematics via XVF
16:50 – 17:20	Y. Koutsawa	Effective properties estimation of multifunctional materials embedding active piezoelectric fibres

Dinner: 19:30

TUESDAY, October 30th

Session T1: Chair – H. Gattringer		
Time	Presenting Author	Title of Presentation
09:00 - 09:30	J. Mayr	Balancing a Bipedal Robot using Active Compliance Control
09:30 - 10:00	P. Beckerle	Integrated mechatronic drive trains with variable stiffness for bio- inspired robotics and active prostheses
10:00 - 10:30	R. Eder	Parameter Identification with Application to Robots and Machines

Coffee Break: 10:30 - 10:50

Session T2: Chair – J. Gerstmayr		
Time	Presenting Author	Title of Presentation
10:50 - 11:20	V. D'Alessandro	Modelling of aluminium foam sandwich panels
11:20 - 11:50	P. Berik	Dynamic sensing experiments of a smart sandwich plate with composite faces and d_{15} shear piezoceramic patched core

DeMEASS V
Design, **M**odelling and **E**xperiments of
Advanced **S**tructures and **S**ystems

ACCM
AUSTRIAN CENTER OF COMPETENCE IN MECHATRONICS

| 11:50 - 12:20 | A. Humer | Constitutive Modeling of Piezoelectric Materials by means of a Multiplicative Decomposition of the Deformation Gradient |

Lunch: 12:20 – 14:00

Social Programme & Dinner: 15:00 – open

Wednesday, October 31st

Session W1: Chair – M. Krommer		
Time	Presenting Author	Title of Presentation
09:00 - 09:30	R. de Breuker	Wind Tunnel Experiments of Aeroelatic Control Methods using Adaptive Structures
09:30 - 10:00	U. Gabbert	Active vibration and noise control in automotive applications
10:00 - 10:30	A. Deraemaeker	Design of shaped piezoelectric transducers attached to thin plate structures based on analytical equivalent loads
10:30 - 11:00	S. Duczek	Numerically efficient simulation of Lamb waves induced by piezoelectric transducers

Closure Lunch: 11:00 – 12:30