

## Seventh International Symposium on

**D**esign  
**M**odelling and  
**E**xperiments of  
**A**dvanced Structures and  
**S**mart  
**S**ystems

### DeMEASS VII

October 4-7, 2015

Radebeul (Germany),  
Radisson Blu Parkhotel Radebeul

#### Programme

##### Sunday, October 4

19:00          Welcome Dinner

##### Monday, October 5

###### Session 1:

09:15          **Thomas Wallmersperger**  
Welcome note

09:30          **F. Wittel, M. M. Hassani, M. Rüggeberg**  
Smart by nature – New perspectives on wood

10:00          **S. Hoffmann, H. Nasser, S. Belouettar, A. Deraemaeker**  
Structural design of modal sensors using an explicit parametric level set  
method

10:30 – 11:00 Coffee break

###### Session 2:

11:00          **G.M. Kulikov, S.V. Plotnikova**  
3D stress analysis of functionally graded layered piezoelectric shells

- 11:30 **T.H.C. Le, M. D'Ottavio, O. Polit**  
Numerical assessment of a new QC4 finite element for variable-kinematics composite plates
- 12:00 **Y. Koutsawa**  
Multi-site micromechanics approach for the overall multiphysical properties of multiferroics composite materials
- 12:30 **E. Zappino, E. Carrera, M. Cinefra**  
Numerical Analysis of Piezoceramic Actuators for Aeronautical Engine Applications

13:00 – 14:00 Lunch break

Session 3:

- 14:00 **F. Förster-Zügel, H.F. Schlaak**  
Numerical simulation of dielectric elastomer stack transducers
- 14:30 **M. Kleo, T. Wallmersperger**  
Thermal Investigation of Dielectric Elastomer Actuators
- 15:00 **M. Mehner, M. Allardißen, A. Voigt, U. Marschner, A. Richter**  
Modelling of a chemically-triggered, hydrogel-based Micro-Valve with Finite Elements
- 15:30 **A. Ehrenhofer, T. Wallmersperger**  
Permeation Control of Membranes: Concepts and Modelling
- 16:00 – 16:30 Coffee break
- 16:30 **P. Leichsenring, T. Wallmersperger**  
Challenges of modeling ionic gels by applying the theory of porous media
- 17:00 **M. Sobczyk, T. Wallmersperger**  
Numerical investigation on the behavior of chemically stimulated thin hydrogel layer systems
- 17:30 **P. Nardinocchi, M. Rossi, T. Wallmersperger**  
Electro-chemo-mechanical couplings in IPMCs
- 18:00 **K. Keller, A. Attaran, T. Wallmersperger**  
Hydrogel gripper - modelling and simulation
- 19:00 Dinner

Tuesday, October 6

Session 4:

- 09:00        **N.P.M. Werter, J. Sodja, G. Spirlet, R. De Breuker**  
Design and experiments of a warp induced camber and twist morphing leading and trailing edge device
- 09:30        **F. Duvigneau, U. Gabbert, R. Orszulik, S. Ringwelski**  
Smart noise attenuation of combustion engines
- 10:00        **R. Orszulik, U. Gabbert**  
Synchronization of Distributed Piezoelectric Actuators for Nanopositioning
- 10:30 – 11:00 Coffee break

Session 5:

- 11:00        **M. Petrolo, E. Carrera**  
Recent advances in the Component-Wise modeling of structures for damage and wave propagation problems
- 11:30        **G. Giunta, S. Belouettar, O. Polit, L. Gallimard, P. Vidal, M. D'Ottavio**  
An analysis of beams via hierarchical finite elements and a variables separation method
- 12:00        **M. Krommer, A. Humer, E. Staudigl, Y. Vetyukov**  
Nonlinear electromechanically coupled modeling of thin plates using a multiplicative decomposition of the deformation gradient
- 12:30        **Y. Vetyukov, M. Krommer**  
Multiplicative decomposition and incompatible undeformed state in the problem of buckling of axially moving plates
- 13:00 – 14:00 Lunch break
- 14:30        Special programme: Excursion
- 19:00        Dinner

Wednesday, October 7

Session 6:

- 09:30        **A. Rubiano, J.L. Ramirez, M.N. El Korso, N. Jouandeu, L. Gallimard, O. Polit**  
Human upper limb motion estimation based on electromyography signals
- 10:00        **J.L. Ramirez, A. Rubiano, N. Jouandeu, L. Gallimard, O. Polit**  
Morphological optimization of a soft finger mechanism using a black box optimizer
- 10:30-11:00    Coffee break
- 11:00        **C. Bellmann, T. Frank, G. Gerlach**  
Moisture induced changes of a humidity micro switch based on PVA/PAA
- 11:30        **M. Kästner, C. Spieler, P. Metsch**  
Magnetostriction of magnetorheological elastomers – finite element modelling and simulation
- 12:00        **O. Eberhardt, T. Wallmersperger**  
Determination of the tensile strength of a carbon nanotube fiber with a molecular mechanics approach
- 12:30        Closing Remarks
- 13:00        Lunch

End of the conference