

Experimental Engineering and Applications

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This special issue of *Experimental Mechanics* contains selected papers presented at the 2nd International Conference on Advanced Computational Engineering and Experimenting (ACE-X 2008) held at Hotel Meliã (Barcelona), Spain during the period 14th–15th July, 2008.

During the conference, a special session related to *Adhesive Bonding* (organised by Prof. Lucas Filipe Martins da Silva and Prof. Juan Carlos Suárez Bermejo) was held. In addition, three short courses related to *Modelling and Testing of Cellular Materials* (organised by Prof. Andreas Öchsner), *Structural Hybrid Materials: Biomimetism and Bioinspiration* (organised by Prof. Juan Carlos Suárez Bermejo) and *Structural Analysis in Vehicle Engineering* (organised by Prof. Markus Merkel) were held.

This issue contains full length manuscripts covering a wide range of topics in experimental engineering. The contribution by *Shahani et al.* is related to the fatigue crack growth in pipes under cyclic bending loads. In their work, experiments are compared to numerical results obtained from finite element simulation. *Radnić* and *Matešan* report the long-term behaviour of steel-reinforced concrete shells under static loading. The fracture evaluation in a dome port under shock impact is experimentally investigated by *Kwon*

et al. and compared to numerical simulations. *Dubois* and co-workers report on the design of a testing rig to investigate the tag of carbon-epoxy prepregs. *Johani* and *Nobari* apply neural networks and modal data to investigate the dynamic behaviour of a structural adhesive. *Shim et al.* analyse the residual stresses in thick-walled cylinders considering the Bauschinger effect. *Cardoso et al.* present an inverse analysis to identify parameters of the Gurson damage model. *Choi et al.* investigate the nano-scale elastic modulus of thin Pt films based on the wrinkle pattern of buckled films whereas *Lee et al.* investigate thin Au films based on the microtensile test. *Ren and co-workers* analyse the elastic deformation of materials under distributed shear loads while the work by *Lee et al.* studies the biomechanical problem of dorsiflexion under eccentric exercise.

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