

# **Second Conference on Simulation and Multidisciplinary Design Optimization**

**23-24 May 2006, Belfort, France**



## **Program**

**Organized by :**



# CONFERENCE PROGRAM

**Tuesday 23th May 2006:**

<b>PLENARY SESSION</b>	
<b>8:00 – 9:00</b>	<b>Registration - Breakfast</b>
<b>9:00</b>	<b>Welcome and Opening Sessions</b> <b>P. Fournier</b> <i>Director of the UTBM</i>
<b>9:15</b>	<b>PS1. Design and Optimization of Composite Structures</b> Keynote lecture: Z. Gürdal <i>Delft University of Technology, Kluyverweg 1, 2629 HS Delft, The Netherlands</i>
<b>10:00 – 10:30</b>	<b>CAFE BREAK</b>
<b>Session 1 :</b> <b>Simulation and Modelling</b> Chair : M. Domaszewski & W.H. Zhang	
<b>10:30</b>	<b>S1.1. Simulation of corrosion resistance of porous coatings using mote Carlo technique</b> S. Guessasma <sup>a</sup> , R. Hamzaoui <sup>b</sup> , O.Elkedim <sup>c</sup> <i><sup>a</sup> INRA, unite BIA, Rue de la Géraudière, Nantes 44130, France.</i> <i><sup>b</sup> Groupe Nanomatériaux, UMR CNRS 5060, UTBM, F90010 Belfort cedex, France.</i> <i><sup>c</sup> FEMTO ST – CREST, I.U.T. de Belfort-Montbeliard, 90016 Belfort, France</i>
<b>11:00</b>	<b>S1.2. Simultaneous optimal design of control and geometry of a fuel cell system motor compressor group</b> A. Sari, D. Hissel ., C. Espanet. <i>L2ES, UFC/UTBM, EA3898 - Rue Ernest Thierry-Mieg - 90010 Belfort Cedex, France</i>
<b>11:30</b>	<b>S1.3. Thermo-elastic-viscous plastic modelling of the 304L stainless steel behaviour – High speed machining applications</b> A. Maurel, S. Thibaud, J.-C. Gelin <i>FEMTO-ST, UMR 6174, Department of Applied Mechanics, Equipe "Modélisation et Mise en Forme des Matériaux", 24, chemin de l'Epitaphe, 25000 Besancon – France</i>
<b>12:00</b>	<b>S1.4. Mechanical properties of open cell structures: finite element analysis</b> S. Guessasma, G. Della Valle <i>INRA, BIA Group, Rue de la Géraudière, Nantes 44130, France.</i>
<b>12 :30 - 14 :00</b>	<b>LUNCH</b>

**Tuesday 23th May 2006:**

<b>14 :00</b>	<b>PS2. Topology optimization</b> Keynote lecture: H Alicia Kim <i>University of Bath, Department of Mechanical Engineering, Bath BA2 7AY, UK</i>
<b>Session 2:</b> <b>Identification – Inverse problem</b> Chair : Z. Gürdal	
<b>14 :45</b>	<b>S2.1. Identification of plastic parameters for abradable materials by the finite element method</b> F. Peyraut <sup>1</sup> , J.-L. Seichepine <sup>1</sup> , H. I. Faraoun <sup>1</sup> , C. Coddet <sup>1</sup> , M Hertter <sup>2</sup> <i>1 LERMPS, Belfort-Montbéliard University of Technology, Belfort, France</i> <i>2 MTU Aero Engines GmbH &amp; Co. KG, Dachauer Stra ße 665, 80995 München, Germany</i>
<b>15:15</b>	<b>S2.2. Modal-Based Calibration of Bolted Steel frame.</b> J.L. Zapico <sup>a</sup> , A. González-Buelga <sup>b</sup> , M.P. González <sup>a</sup> , R. Alonso <sup>a</sup> <i>(a)University of Oviedo, Department of Construction and Manufacturing Engineering. Campus de Viesques, 33203 Gijón, Spain.</i> <i>(b)University of Bristol, Department of Mechanical Engineering. Queen's Building, University Walk, Bristol BS8 1TR, UK</i>
<b>15:45</b>	<b>S2.3. Application of inverse heat conduction method in two-phase flow.</b> H. Louahlia-Gualous, M.Karkri, E. Artioukhine <i>FEMTO-ST, CNRS UMR 6174, CREST, 2 avenue Jean Moulin 90000 Belfort, France.</i>
<b>16:15</b>	<b>S2.4. Modal Analysis of a Vibrating Structure by Time Domain Methods</b> B. Salhi; Minh Nghi TA and J. Lardies <i>FEMTO-ST; Department of Applied Mechanics, 24 rue de l'Epitaphe ;25000 Besançon</i>
<b>16:15 - 16:45</b>	<b>CAFE BREAK &amp; POSTERS</b>
<b>17:15</b>	<b>S2.5. Identification de la conductivité et de la chaleur volumique en régime transitoire en 1-D</b> K. Atchonouglo, C. Vallee et Z.-Q. Feng <i>Université de Poitiers ; Université d'Evry Val d'Essonne</i>
<b>19:45 – 22 :00</b>	<b>Diner in the Center of the Belfort (typical restaurant)</b>

**Wednesday 24th May 2006 :**

<b>PLENARY SESSION</b>	
<b>9:00</b>	<p><b>PS3. Industrial Applications of an Optimized Conception approach</b> Keynote lecture: J. Zarka <i>CADLM Co., Paris , France</i></p>
<b>9:45</b>	<p><b>PS4. Topology optimization of material microstructures</b> Keynote lecture: W. H. Zhang <i>Institute of Mechatronic Engineering, Northwestern Polytechnical University, Xi'an, 710072, Shaanxi, China</i></p>
<b>10:30 – 11:00</b>	<b>CAFE BREAK &amp; POSTERS</b>
<p><b>Session 3 :</b> <b>Structural Optimization</b> Chair : H Alicia Kim &amp; J. Zarka</p>	
<b>11:00</b>	<p><b>S3.1. Optimisation technique for long and thin anisotropic laminated fibre composite plates</b> J. Enrique Herencia #, Paul M. Weaver, Cezar G. Diaconu, Michael I. Friswell <i>Department of Aerospace Engineering, University of Bristol, Queen's Building, Bristol BS8 1TR, UK</i></p>
<b>11:30</b>	<p><b>S3.2. Response Surface Methodology Adapted to Multi-objective Optimization of Viscoelastically Damped Systems</b> A. M. G. De Lima*, S. Ghanmi<sup>++</sup>, N. Bouhaddi<sup>+</sup>, D. A. Rade* <i>(*) Federal University of Uberlandia – School of Mechanical Engineering, Campus Santa Monica – P.O. Box 593, CEP 38400, Uberlandia – MG – Brazil, (+) FEMTO-ST Institute, UMR 6174, Dept. LMAR, UFC, Besançon, France, (++) Nabeul Preparatory Engineering Intitut (IPEIN), 8000 M'rezgua, Nabeul, Tunisia</i></p>
<b>12:00</b>	<p><b>S3.3. Structural encoding for topology optimization with genetic algorithm</b> B. Sid*, F. Peyraut**, M. Domaszewski* <i>Université de Technologie Belfort-Montbéliard, *M3M Lab., **LERMPS Lab., 90010 Belfort Cedex, France</i></p>
<b>12 :30</b>	<p><b>S3.4 Multicriteria Optimization of composite structure</b> D. H. Bassir *, J.F. Maire ** <i>(*)Institut FEMTO-ST, Dept. LMAR, UMR 6174,24, rue de l'épitaphe, 25000 Besançon, France (**)ONERA, Dept MSE , 29 avenue de la division Leclerc, 92322 Chatillon Cedex</i></p>
<b>13 :00 - 14 :30</b>	<b>LUNCH</b>

**Wednesday 24th May 2006 :**

<b>14 :30</b>	<p><b>PS5. ACARE (Advisory Council for Aeronautics Research in Europe) and the aeronautics SRA</b>  <b>An overview.</b>  Keynote lecture: M. Kivel Mazuy  <i>C/O ASD-AeroSpace &amp; Defence, ASTERA, EREA Representative, Gulledelle 96, B-1200 Brussels, Belgium</i></p>
<p><b>Session 4 :</b>  <b>Optimal Process</b>  Chair : M. L.Boubakar &amp; J.L. Zapico Valle</p>	
<b>15:00</b>	<p><b>S4.1. Optimal and Robust Design of Mechanical Structures with uncertainties</b>  S. Ghanmi*, M-L. Bouazizi*, N. Bouhaddi<sup>+</sup>  * <i>Nabeul Preparatory Engineering Institute (IPEIN), 8000 M'ezgua, Nabeul – TUNISIA.</i> (+) <i>FEMTO ST Institute UMR 6174 – R. Chaléat Applied Mechanics Laboratory, University of Franche-Comté, 24 Chemin de l'Épitaphe 25000 Besançon - France</i></p>
<b>16:00</b>	<p><b>S4.2. Functional design through a PLM system for automatic creation of optimized 3D models.</b>  S. Gomes, J.B. Bluntzer, D.H. Bassir*  <i>UTBM, Laboratoire Systèmes et Transports, Equipe ERCOS, 90010 Belfort Cedex, France</i>  (*) <i>Institut FEMTO-ST, Dept. LMARC, UMR 6174, 24, rue de l'épitaphe, 25000 Besançon, France</i></p>
<b>15:30 - 16:00</b>	<b>CAFE BREAK</b>
<b>16:30</b>	<p><b>S4.3. A framework based on software components for design and optimization in engineering</b>  B. Delinchant, L. Gerbaud, F. Wurtz  <i>Laboratoire d'Electrotechnique de Grenoble, CNRS/INPG/UJF, B. P. 46, 38402 St Martin d'Herès, France</i></p>
<b>17:00</b>	<p><b>S4.4. Motor design optimization thanks to an hybrid method</b>  J-L. Hippolyte*, C. Espanet*, D. Chamagne*, C. Bloch**, P. Chatonnay***  (*) <i>L2ES, UFC/UTBM, Rue Ernest Thierry-Mieg 90010 Belfort Cedex, France.</i> (**) <i>SeT, UTBM, Rue Ernest Thierry-Mieg, 90010 Belfort Cedex, France.</i> (***) <i>LIFC, UFC, Cours Leprince-Ringuet, 25200 Montbéliard, France</i></p>
<b>17:30</b>	<b>CLOSING SESSIONS</b>