

TUESDAY, 15 NOVEMBER 2016

A1 – PLENARY SESSION

- 10:30 **Welcome and NAFEMS Introduction Conference Committee and NAFEMS Multiphysics Working Group**
H. Nordborg (HSR University of Applied Sciences, SUI / Chairman NAFEMS MPWG); T. Morris (NAFEMS)
- 10:50 **Topology Optimization in Multiphysics Applications (154)**
O. Sigmund (Technical University of Denmark, DEN)
- 11:25 **Virtual Package Development Utilizing Multiphysics (11)**
E. Andreasson (Tetra Pak, SWE)
- 12:00 Lunch break

A2 – Fluid Structure Interaction I

- 13:00 **Large Deformation of Thin Rubber Sleeves in Flow Control Valves Using Strongly Coupled Fluid-Structure Interaction (23)**
A. Avci, M-A. Hodapp, M. Hasert (Festo, GER)
- 13:25 **Medical Predictive Models of Abdominal Aortic Aneurysm Patient Specific by Computational Modelling and Simulation Methods as Potential Support Research, Clinical Decision and Education in Healthcare (121)**
C. Maggari (Enabling Digital Dentistry, ITA)
- 13:50 **Towards a better Subsea Jumper Design (76)**
J. Iseler, G. Dimitrova, S. Ribeiro-Ayeh (Dassault Systemes, GER); P. Sobczak (Dassault Systemes, GBR); K. D'Souza (Dassault Systemes, USA)
- 14:15 **Quasi-Newton Methods for Unstable Partitioned Fluid-Structure Interaction (93)**
M. Koch (University of Bonn, GER)
- 14:40 **Coffee Break**

A3 – Medical

- 15:25 **Fluid-Structure Interaction in a Beating Human Whole Heart Model (155)**
A. Aksekov, V. Pokhilko, A. Yushenko (Tesis (Capvidia), RUS); B. Butz, P. Sridhar, K. D'Souza (Dassault Systemes Simulia, USA); W. Zietak, S. Soğançlı (Capvidia, BEL)
- 15:50 **Implementation of a Multiscale Multiphysics Framework to Model Whole Heart Electrophysiological and Mechanical Behavior (55)**
J. Yao, K. D'Souza, B. Baillargeon (Dassault Systemes Simulia, USA); B. Onal, T. Hund (Ohio State University, USA)
- 16:15 **Electro-Mechanical Modeling of Transcatheter Aortic Valve Deployment in the Simulia Living Heart Human Model (51)**
G. Marom, R. P. Ghosh, M. Bianchi, D. Bluestein (Stony Brook University, USA); K. D'Souza, B. Baillargeon, P. Sridhar (Dassault Systemes Simulia, USA)
- 16:40 **Challenges in Radio Frequency Tissue Ablation Simulations (67)**
N. Elabbasi, E. Schmitt, M. Hancock (Veryst Engineering, USA)

A4 – Multiphysics Tools & HPC

- 17:35 **Solving Large Fluid Structure Interaction Problems using Coupled Open Source Software (72)**
S. Hewitt, L. Margetts, A. Revell (University of Manchester, GBR); N. Ince, M. Willets (General Electric, USA)
- 18:00 **Aspects of Plasma Simulations (68)**
S. Hartridge, P. Hilscher, S. Holst (Siemens, GBR)
- 18:25 **Simulation of Cavitating Flows of Technical Liquids in Engineering Structures using Equilibrium Approach (81)**
A. Ivanov, A. Muslaev, A. Pavlov, T. Pavlova, V. Streltsov (Mentor Graphics, RUS); V. Volkov (Moscow Aviation Institute, RUS)

18:50 GET TOGETHER IN THE EXHIBITION

Beverages and snacks – time for discussions and product demonstrations

B2 – Electromagnetics I

- Coupled Simulations of Electric Arcs for Switching Devices (39)**
P. Bayrasy (Fraunhofer SCAI, GER)
- High-Intensity Discharge Lamps – A Multiphysics Challenge (31)**
B. Baumann, J. Schwieger, U. Stein, M. Wolff (HAW Hamburg, GER)
- Simulation-Based Development of Lightning Protection Devices (138)**
M. Mürmann, H. Nordborg, R. Fuchs (HSR University of Applied Sciences, SUI)

B3 – Electromagnetics II

- Structural and Electromagnetic Considerations of Realizing a High Speed Data Link in a Smart Watch (176)**
K. Krohne, T. Wittig, M. Rutschlin (Computer Simulation Technology, GER); K. Gundu, M. Chinnakonda, H. Surendranath (Dassault Systemes Simulia, USA)
- Thermo-Mechanical Simulation of a Combined HVDC Transformer-Rectifier Unit (141)**
T. Papadopoulos, C. Heinrich, S. Boschert (Siemens, GER)
- A Procedure for Electromagnetic-Structural Simulation of Shock Circuit Driven Buckling Instability on Foil-Sheet VPI Transformer Windings (59)**
L. De Mercato, A. Cremasco (ABB Trasfor, SUI); G. Franzoso (Cadferm, SUI)
- Simulation of Flow and Electro-Magnetic Induced Vibrations (171)**
N. Wirth (Fraunhofer SCAI, GER)

B4 – Multiphysics Tools & Algorithms

- Applications of MpCCI-Based Fluid/Structure Interactions Coupling to a Vibrational and a Rotational Blades (35)**
Y. Yang, W. Liou (Western Michigan University, USA); P. Bayrasy (Fraunhofer SCAI, GER)
- Smart Multiphysics: How to Improve Simulation Processes to Drive Designs? (64)**
H. Ekman (Altair, SWE)
- Accelerating Multiphysics Simulation and Validation (105)**
K. Kueres (Dassault Systemes, GBR); E. Brun (Dassault Systemes, FRA); G. Judex (Dassault Systemes, AUT); S. Prasad, B. Nandi, S. Tadepalli, K.C. Jen (Dassault Systemes, USA)

C2 – Coupling

- Simulation Driven Design of EGR Coolers (190)**
C. Wolfe, T. Berg (Ansys, USA); P. Mandloi, A. Shrivastava, S. Shrivastava, C. Patil, A. Kshatriya (Ansys, IND)
- Using Co-Simulation to Reduce the Calculation Time in Vehicle Dynamics (89)**
J. Kleinert, K. Wolf (Fraunhofer SCAI, GER); J. Christl, S. Kunz (EDAG Engineering, GER)
- A New Unified Flow for Seamless High Power Multiphysics Applications (180)**
C. Wolfe, V. Delafosse, S. Scampoli (Ansys, USA)
- Exhaust Manifold Thermal Analysis and Test Rig Optimization Study (47)**
B. Celikten, S. Eroglu (Ford Otomotiv Sanayi, TUR)

C3 – Vibro-Acoustics I

- Aero-Vibro-Acoustics for Wind Noise Application (184)**
C. Wolfe, S. Sovan (Ansys, USA); M. Oswald (Ansys Germany, GER)
- Coupled Fluid Flow and 3D Acoustics Simulation of an Ultrasonic Flow Sensor (109)**
V. Kumar, P. Papanthasiou, M. Bezdek (Endress+Hauser Flowtec, SUI)
- Multiphysics of Electrodynamic Loudspeakers (159)**
A. J. Svobodnik, T. Nizzoli (Konzept-X, GER)
- FEM AO Approach to Vibroacoustic Simulation: Fluid-Structure Interaction and Coupled Analyses (130)**
G. Miccoli (Imamoter, ITA); K. Vansant (Siemens PLM, BEL); C. Bertolini (Autoneum, SUI)

WEDNESDAY, 16 NOVEMBER 2016

A5 – PLENARY SESSION

- 08:25 **From Maxwell to Fourier and Newton: Thermal Management in Power Engineering** (42)
R. Bel Fdhila (ABB Corporate Research, SWE)
- 09:00 **Challenges in Combustion Chamber Design for Large 2 Stroke Diesels** (11)
H. Andersson (MAN Diesel & Turbo, DEN)
- 09:35 **Numerical Simulation of Fluid-Structure-Acoustics Interaction** (149)
M. Schäfer (Technical University Darmstadt, GER)
- 10:10 **Coffee Break**

A6 – Multiphysics Methods

- 10:50 **Particle-Based Methods and What We Can Do With Them** (27)
B. Avci, P. Wriggers (University of Hannover, GER)
- 11:15 **Numerical Modelling of Pellet Combustion in a Domestic Oven by the Extended Discrete Element Method (XDEM)** (145)
B. Peters, M. Mohseni (University of Luxembourg, LUX)
- 11:40 **Integrative Simulation of Fiber Reinforced Plastics Simulation Base Material Calibration of Design Elements Manufactured from Fiber Reinforced Plastics** (168)
M. Werner (Robert Bosch, GER); D. Papatthanassiou, P. Luo (Robert Bosch, CHN)
- 12:05 **Numerical Simulation on the Effect of SLD Icing in Turbomachinery** (150)
M. Shimura, H. Mamori, N. Fukushima, M. Yamamoto (University of Tokyo, JAP)
- 12:30 **Lunch Break**

A7 – New Topics & Methods I

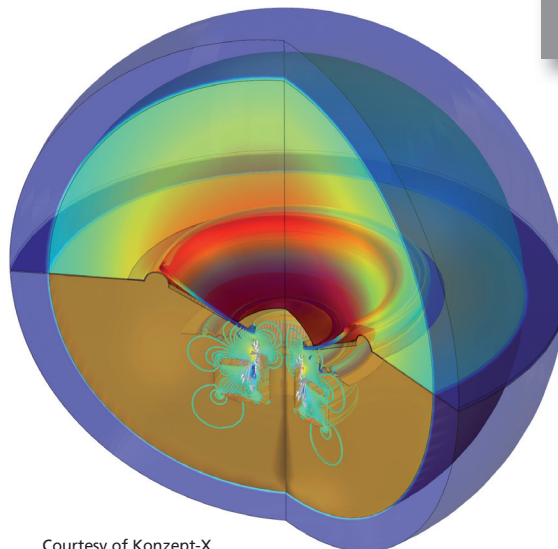
- 13:30 **Bringing Systems Simulation and 3D Simulations together using FMI and MpCCi** (85)
J. Kleinert, K. Wolf (Fraunhofer SCAI, GER); R. Meyer, C. Clauß (Fraunhofer IIS, GER); K. Hofmann, U. Grätz (ESI ITI, GER)
- 13:55 **The Large Impact of Small Things: Infinite Life Design of Plastic Components** (163)
L. Vallance (Dassault Systèmes Simulia, AUT); A. Winkler (Dassault Systèmes Simulia, SWE)
- 14:15 **On the Investigation of Cooling Rate Influenced by Neighboring Objects in Cluster Quenching Using New Approach in Meshing Technology and Multiphase Flow Solver** (101)
D. Greif, R. Kopun (AVL); J. Jan, E. Prabhu (Ford Motor Company, USA)
- 14:40 **Wrap-up / Farewell**
Conference Committee
- 15:00 **End of conference**

B6 – Fluid Structure Interaction II

- Hydromount Performance Characterization using Coupled Fluid Structure Interaction Simulation Methods** (191)
H. Zhang, I. Yavuz, P. Ding, M. Hebbes (Ansys, USA)
- Numerical Investigation of Nano-particle Deposition Phenomenon on Flat Plate in Rectangle Duct Flow** (134)
H. Miyake, M. Yamamoto, N. Fukushima, H. Mamori (Tokyo University of Science, JAP); J. Hara, M. Iwasaki, N. Matsudaira (Calsonic Kansei, JAP)
- An Integrated Simplified Approach to External Gear Pump Noise Field Prediction** (130)
G. Miccoli, E. Carletti, F. Pedrielli (Imamoter, ITA)
- Fluid-Structure Interaction Simulation of Racing Car Spoilers** (117)
B. Landvogt (Scapos, GER)

B7 – New Topics & Methods II

- Numerical Simulation on Decontamination Process of Droplet of Harmful Chemical Agent** (97)
T. Konno, M. Yamamoto, N. Fukushima, H. Mamori (Tokyo University of Science, JAP); H. Hiroki, M. Kawai, K. Sakamoto (IHI Corporation, JAP)
- A Co-Simulation Approach to Model the Thermal Behavior of Automotive Vehicles during Dynamic Driving Cycles** (43)
C. Brodbeck, P. Bayrasy (Fraunhofer SCAI, GER)
- Vacuum Oven Brazing Simulation (VOBS)** (13)
G. Apostolopoulos, R. Stauch, W. Kühnel (Mahle Behr, GER)



Courtesy of Konzept-X