

NUMIFORM 2016

Second Announcement



Objective of the Conference

The NUMIFORM international conferences series introduced by Prof. O.C. Zienkiewicz in 1982 is taking place every three years at alternating locations around the globe. It aims to provide a forum where recent advances and future directions in the numerical simulations of manufacturing processes are discussed by engineers and scientists from industry and academia worldwide. The topics covered in the conference should be of great interest not only to numerical analysts but also to professionals and researchers involved in traditional and novel manufacturing technologies for conventional and emerging materials.

Location and Dates of the Conference

The conference takes place at University of Technology of Troyes (UTT), France, from Monday 4th to Thursday 7th of July 2016 as following:

- Monday 4th to Wednesday 6th : Oral and poster presentation as well as industrial exhibition
- Thursday 7th: Technical program with technical and touristic tours

Key Dates

- July 15th to October 30th, 2015: call for abstracts
- November 1st – 15th, 2015: notification of abstracts acceptance
- November 16th, 2015 to January 31st, 2016: submission of the full papers
- February 1st, to March 28th, 2016: Reviewing of the submitted full papers
- April 15th, 2015: Deadline for final acceptance of the full papers
- Registration:
 - March 30th to May 14th, 2016: Early registration
 - From May 15th, 2016: Late registration
- June 15th, 2016: Publication of the final program

Website

<http://numiform2016.utt.fr>

Contacts

General contact: numiform2016@utt.fr

Exhibition contact: numiform2016-exhibition-contact@utt.fr

Conference Fees

	Early registration (VAT incl.): Before May 14, 2016	Late registration (VAT incl.) from May 15, 2016	On-site registration (VAT incl.)
Senior	720 €	840 €	960 €
Student	360 €	420 €	600 €

Conference Topics

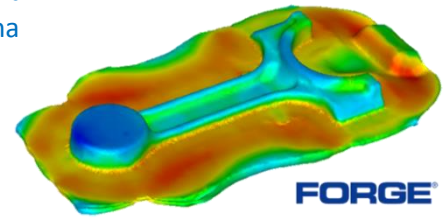
The conference topics are but not limited to:

Topic 1: Theoretical modeling and constitutive equations under large inelastic strains: Attention will be focused on the advanced modeling and coupling between various physical phenomena using both:

- Macroscopic or monoscale modeling of coupled multiphysic phenomena
- Micro-macro or multiscale modeling of coupled multiphysic phenomena

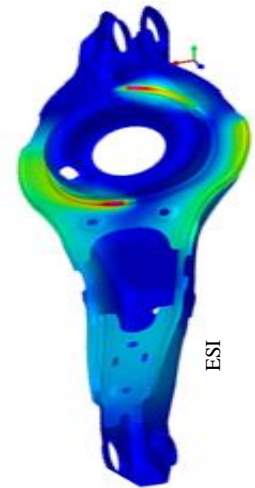
This includes:

- Modeling of the bulk materials behavior including the microstructural aspects
- Modeling of the contact interfaces behavior with friction and related phenomena
- Modeling of the material defects, wear and damages under large inelastic strains
- Heat transfer modeling in forming processes



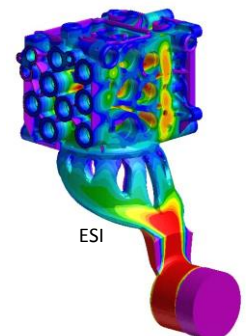
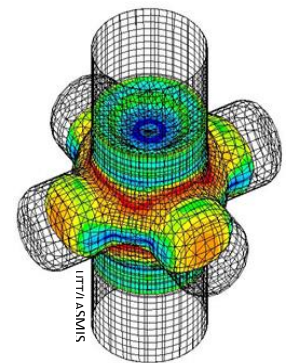
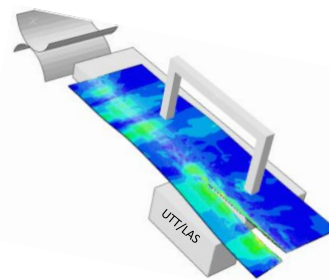
Topic 2: Numerical modeling and resolution schemes: This includes but not limited to:

- Conventional FEM for forming simulation including 3D adaptive methods
- New numerical methods for solving highly nonlinear and fully coupled problems:
 - Meshless methods
 - Hybrid methods
 - Stochastic methods
- Advanced computational methods, Massively parallel computing methods
- Adaptive methods: 3D adaptive discretization, varying boundary conditions and contact with friction
- Hyper reduction methods for large unknowns problems
- Shape and or forming processes optimization methods
 - Inverse methods for material parameters identification
 - Methods for forming processes multi-criteria optimization



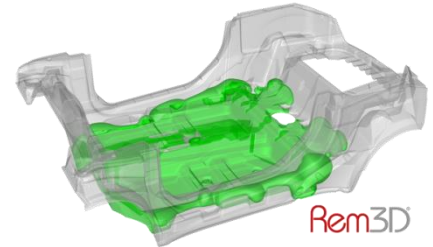
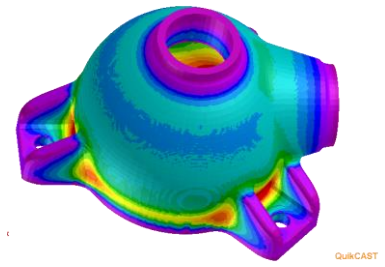
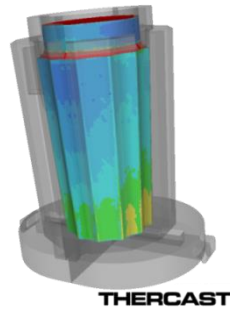
Topic 3: Application to metal or multi-metal forming processes: Applications to the forming of metallic materials to obtain the optimal mechanical components with more or less complex form. This includes but not limited to:

- Conventional processes:
 - Bulk metal forming: forging, stamping, extrusion, rolling, cold and hot forming ...
 - Sheet and tube metal forming processes: Extrusion, drawing, hydroforming, incremental forming, sheet metal formability, spring back modeling, cold and hot forming
 - Machining, metal cutting and polishing
 - Casting, molding processes
- Non-conventional and emerging processes:
 - Additive manufacturing
 - Semi-solid processes or thixoforming
 - Electromagnetic metal forming
 - Peen forming
- Thermomechanical assembly and joining processes:
 - Joining by purely mechanical processes: assembly by a rivet, a screw a bolt or assembly by clinching ...
 - Joining by welding: classical welding, laser welding, friction stir welding
- Metallic treatment:
 - Mechanical surface treatment: shot peening, laser peening, ...
 - Heat treatments : quenching,



Topic 4: Application to composites, polymers and other materials: Applications to the forming of composites, polymers, elastomers and other kind of materials to obtain optimal parts with more or less complex form. This includes but not limited to:

- Forming of composite materials: for various kinds of classical and emerging composites
 - Composite forming processes: RTM,, wet lay-up, Hand-Lay-up, vacuum bagging, compression molding, filament winding, pultrusion, ...
 - Composite manufacturing processes
- Forming of polymers (plasturgy) and other nonmetallic materials:
 - Reactive liquid molding
 - Crystallization
 - Injection molding, extrusion, ...



The mini-symposia: Together with the general sessions described above, several mini-symposia are proposed:

- MS1:** Generalized continua and nonlocal formulations
- MS2:** Microstructure modeling in forming processes
- MS3:** Defects and damage prediction in forming processes
- MS4:** Advanced modeling of contact interfaces in forming
- MS5:** Advanced anisotropic constitutive equations for forming processes simulation
- MS6:** Impact of the forming process on the fatigue life of structures
- MS7:** Advanced computational methods in forming processes simulation
- MS8:** Numerical modeling of additive manufacturing
- MS9:** Modeling and numerical simulation of thixoforming processes
- MS10:** Design, Optimization, Inverse Methods and Uncertainties in Forming Processes
- MS11:** Tribute to J.L. Chenot on the occasion of his 70th anniversary: 40 years of numerical simulation in material forming

Two industrial mini-symposia are also organized by Transvalor and ESI:

- IMS1:** Engineering simulation of bulk forming processes (by Transvalor)
- IMS2:** Engineering simulation of sheet forming processes (by ESI)

Organizing Committee

Chairman: Khemais Saanouni, Professor at UTT



Professor K. Saanouni, PhD from University of Technology of Compiègne (France) in Solid and Structural Mechanics (1988) is currently distinguished professor of applied and computational mechanics at the University of Technology of Troyes (France), where he founds and leads a research group working on advanced modeling in virtual metal forming. Prof. K. Saanouni is the author or co-author of more than 260 scientific publications. He has supervised more than 30 PhD theses. He is member of editorial board of 2 international journals: IJDM and IJFO, and member of organizing committee of more than 40 scientific events. He is the authors of an academic book entitled "Damage mechanics in metal forming. Advanced Modeling and Numerical Simulation", ISTE/Wiley, 2012, ISBN: 978-1-84821-348-7.

Co-Chairman: Argiris Kamoulakos, Scientific Director at ESI Group



Dr Argiris Kamoulakos has a BSc (Honours) degree in Aeronautics from The City University, London in 1980 and two MS, one in Aeronautics and Astronautics and the second in Mechanical Engineering from MIT, Boston in 1982. In 1987 he obtained a Ph.D. in Aeronautical Structures from Imperial College of Science Technology and Medicine in London. Dr Argiris Kamoulakos joined ESI Group in 1994 bringing more than 20 years of industrial experience in the applications of the Finite Element Method. His expertise covers linear/non linear as well as static/dynamic industrial application developments. He worked for WS Atkins R&D, ZENTEC (MARC UK), SAMTECH and SONACA. He is a Fellow of the Royal Aeronautical Society (FRAeS) and an Associate Fellow

of the American Institute of Aeronautics and Astronautics (AIAA).

Co-Chairman: Jean-Loup Chenot, Scientific Director at Transvalor SA



Dr Jean-Loup Chenot, Diploma Engineer from Polytechnique School of Paris (1968) and PhD from Pierre et Marie Curie University, Paris 6 (1973), is currently Scientific Director of Transvalor SA since 2014. He was Professor and Head of the CEMEF (School of Mines of Paris at Sophia Antipolis) from 1979 to 2008. Chairman of the NUMIFORM'1992 conference and member of the NUMIFORM Steering Committee since 1992. He was also consultant for CEMEF and TRANSVALOR SA between 2009 and 2013. Dr J.L. Chenot is a worldwide expert in numerical methods for metal forming processes and the co-author with R.H. Wagoner of the book "Metal forming analysis, Cambridge University Press, Cambridge, 2001".

Members of the Organizing Committee:

About 20 persons from UTT, ESI Group and Transvalor will be active members of the organizing committee.

International Scientific Committee

Agassant J.F., (CEMEF, France)

Altan T. (Ohio State University, USA)

Alves J. (University of Minho, Portugal)

Angelet de Saracibar C. (Univ.of Barcelona, Spain)

Asserin O. (CEA, Saclay, France)

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Barlat F. (Postech, Korea)

Bathala G.F. (Sao Polo University, Brazil)

Bay F. (CEMEF, France)

Bay N. (Technical University of Denmark)

BelhadjSalah H. (ENIM, Tunisia)

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Ceretti E. (University of Brescia, Italy)

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Chenot JL (Transvalor, France)

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 Geijselaers B. (Univ of Twente, the Neederlands)
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 Owen D.R.J (Swansea University, UK)
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 Tabourot L. (Université de Savoie, Annecy, France)
 Tekkaya A.E. (IUL, TU Dortmund, Germany)
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 Worswick M. (University of Waterloo, Canada)
 Wu P. (McMaster University, Canada)
 Yang D.Y (KAIST, Korea)
 Yilbas B. S. (KFUPM, Saudi Arabia)
 Yoon J-W (Deakin univ, Australia)
 Yoshida F. (Horishima, Japan)
 Yu H-L (Wollogong Univ, Australia)
 Zahrouni H. (Univ. Metz, France)
 Zeng P. (Tsinghua Univ, China))
 Zhang K.F. (Harbin, China)
 Zhang SH, (IMR, China)
 Zhao Q. (Shandong UNiv, China)