



# TRAINING COURSE: 18<sup>th</sup>-19<sup>th</sup>, February

## Non-linear steel structural analysis with LS-DYNA software

### About lecturer:

**Sören Ehlers** is holding a D.Sc. degree from the Helsinki University of Technology, which he gained in the field of material modelling for non-linear finite element analysis. He is the author of several scientific papers and works as a research scientist at the Aalto University in Helsinki, Finland

### Supported by:

**TEMPUS** European Union's programme

**ASDEPP** - Advance Ship Design for Pollution Prevention,  
[www.mar.ist.utl.pt/asdepp/](http://www.mar.ist.utl.pt/asdepp/)

**Aalto University**, School of Science and Technology, Department of Applied Mechanics, Finland,  
[www.tkk.fi](http://www.tkk.fi)

**University of Rijeka** - Faculty of Engineering, Department of Naval Architecture and Ocean Engineering,  
[www.riteh.hr](http://www.riteh.hr)

**LSTC** - Livermore Software Technology Corporation, develops LS-DYNA and a suite of related and supporting engineering software products,  
[www.lstc.com](http://www.lstc.com)

**as2con**- Research and Consulting, LS-DYNA distributors for Croatia,  
[www.as2con.com](http://www.as2con.com)

**LS-DYNA** is a software for solving highly nonlinear transient problems enabling the solution of coupled multi-physics and multi-stage problems. LS-DYNA affords increased computation speed thereby improving scalability.

The developer of LS-DYNA, LSTC, USA continuously recodes existing algorithms and develops more efficient methodologies.

**Course Structure:** The course will be held in a computer equipped classroom to allow a straightforward utilization of the lecture contents. Example exercises will be used to visualize LS-DYNA's and LS-PrePosts' capabilities throughout the two day training. The course contents are based on the structural analysis section from the EU Programme Tempus Course: Collision and Grounding as Criteria in Ship Design. The emphasise of this training course is however on the numerical modelling alone.

### Course Schedule:

- DAY 1 - Thursday, February 18, 2010:**
  - General Introduction (LS-Prepost and LS-DYNA structure)
  - Non-linear material modelling (general material relations, tensile simulations)
- DAY 2 – Friday, February 19, 2010:**
  - Non-linear material modelling (mesh size sensitivity and failure)
  - Contact modelling and fracture

**TIME:** From 9 am until 15 pm each day, with lunch break from 12 am until 13 pm

**PLACE:** Faculty of Engineering, Vukovarska 58, Department of Naval Architecture and Ocean Engineering, TEMPUS classroom, 2<sup>nd</sup> floor

**PRICE:** Free of charge

### INFORMATION AND REGISTRATION:

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Contact person:

**Mrs. Nerina Čugelj,**

Secretary at Department of

Naval Architecture and

Ocean Engineering

Deadline for registration:

**February 17, 2010**

