NAFEMS

NAFEMS NORDIC CONFERENCE

22-23 May 2024 | Gothenburg, Sweden

neutral. independent. interdisciplinary.

Invitation and preliminary conference agenda

- Plenary presentations by Volvo Autonomous Solutions, VTI The Swedish National Road and Transport Research Institute, Volvo Cars
- High quality technical presentations
- Workshops on Artificial Intelligence / Machine Learning and Uncertainty Quantification
- Accompanying software exhibition
- Networking, exchange of experiences and information
- Open to NAFEMS members* and non-members

Gold sponsors

DASSAULT SYSTEMES

noesis a Cybernet Group Company

rescale

SIEMENS

Silver sponsors

BETA SIMULATION SOLUTIONS

FEMFAT software BY MAGNA POWERTRAIN

www.nafems.org/nordic24

* Free attendance for NAFEMS members by using four NAFEMS seminar credits.

Version 2 - 23.4.2024

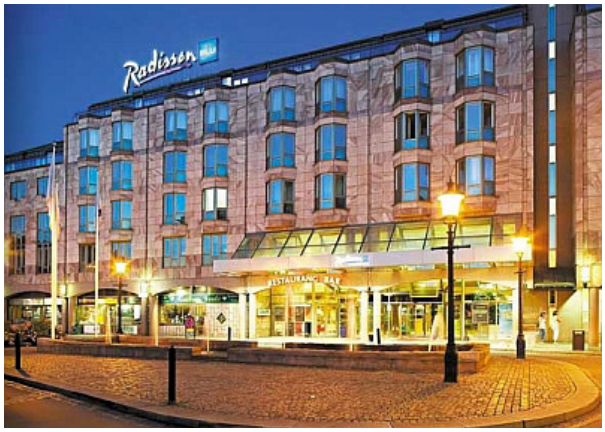
NAFEMS, the independent international association for the engineering modelling, analysis and simulation community, is holding its Nordic conference from 22 - 23 May 2024 in Göteborg, Sweden. This two-day conference will focus on existing best practices as well as state-of-the-art in FEA, CFD and associated technologies – ensuring delegates receive a fully comprehensive overview of the technology available to them.

The conference will increase awareness and provide a discussion forum for topics that are vital to engineering industrialists and academics, offering attendees an unrivalled combination of industrial knowledge, expertise and forward-thinking to aid their deployment of CAE over the next few years.

The conference welcomes participation from every type of organisation – large and small, across all industry sectors. It is open to both, members and non-members of NAFEMS, with members able to attend the event for free towards using four seminar credits, as part of their membership benefits package.

We are looking forward to welcome you in Göteborg, Sweden.

NAFEMS NORDIC Steering Committee



Radisson Blu Scandinavia Hotel

Hardware and software exhibition

If you are interested in participating as an exhibitor or sponsor, you can find an information brochure at www.nafems.org/nordic24.

Exhibition area in front of the conference rooms

NAFEMS NORDIC
Steering Committee members

J. Granlund (Dassault Systemes, SWE), Chair
P.-O. Jansell (Altair Engineering, SWE)
L. Pilgaard Mikkelsen (DTU, DEN)
A. Ptchelintsev (EDR & Medeso, FIN)
C.-F. Stein (FS Dynamics Sweden, SWE)
A. Jensen (Grundfos, DEN)
M. Andreasson (Hexagon, SWE)
T. Hansen (Novo Nordisk, DEN)
F. Santandrea (RISE Research Institutes of Sweden, SWE)
P. Poskiparta (Valmet Automotive, FIN)
J. Vernersen (Velux, DEN)
T. Frondelius (Wärtsilä, FIN)

Exhibitors 2024
(28 March)

- Altair Engineering
- BETA CAE Nordic
- Dassault Systèmes
- EikoSim
- Hexagon Manufacturing Intelligence
- Magna Powertrain Engineering Center Steyr
- NAFEMS
- Noesis Solutions
- Particleworks Europe
- Quanscient
- Rescale
- Siemens
- sustainedBIZZ
- ...

Venue and hotel accommodation

Radisson Blu Scandinavia Hotel
Södra Hamngatan 59
401 24 Göteborg, Sweden
Tel.: +46 31 758 5000, Fax: +46 31 758 5001
www.radissonblu.se/hotell-goteborg

NAFEMS NORDIC conference registrants can reserve a discounted room at the hotel. Please find a booking link on our conference website.

Conference registration

Please register by completing the attached registration form or online at www.nafems.org/nordic24

Conference language

English

Delegate fee (per person)

- Not-NAFEMS members: 750 Euro
- NAFEMS members using 4 seminar credits: free*
- NAFEMS member with no seminar credits: 500 Euro

All costs plus 25% Swedish VAT.

These fees include attendance at the conference, one copy of the proceedings, lunches and break refreshments on each day and beverages and snacks in the evening of the first day. Hotel accommodation is not included.

* NAFEMS membership fee for companies/institutes

A standard NAFEMS site membership costs 1.365 Euro per year. An academic site membership costs 855 Euro per Jahr. Beneath many others, NAFEMS members will get eight seminar credits (1 credit = 1/2 seminar/conference day) per year.

NAFEMS members can use seminar credits towards free attendance at this event. This event will charge four seminar credits per delegate. You can register 2 delegates included in your membership to this conference! Please consider becoming NAFEMS member before registering!

Conference room

Cancellation policy

- Up to 6 weeks before the start: 100% refund
- Up to 1 week before the start: 25% refund, no seminar credits refunded
- Later and in the event of no-show: no refund

Substitute participants can be provided. The cancellation must be made in writing.

Hardware and software exhibition / sponsoring

We would like to extend an invitation to your company to be part of the conference as exhibitor and/or sponsor. Please request further information or download the exhibition and sponsorship opportunity brochure (pdf) at www.nafems.org/nordic24.

Conference organization

NAFEMS Deutschland, Österreich, Schweiz GmbH
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e-mail: info@nafems.de
www.nafems.org

About NAFEMS

NAFEMS is the International Association of the Engineering Modelling, Analysis and Simulation Community. Our principal aims are to:

- Improve the professional status of all persons engaged in the use of engineering simulation
- Establish best practice in engineering simulation
- Provide a focal point for the dissemination and exchange of information and knowledge relating to engineering simulation
- Promote collaboration and communication
- Act as an advocate for the deployment of simulation
- Continuously improve the education and training in the use of simulation techniques
- Be recognised as a valued independent authority that operates with neutrality and integrity

We focus on the practical application of numerical engineering simulation techniques such the Finite Element Method for Structural Analysis, Computational Fluid Dynamics, and Multibody Simulation. In addition to end users from all industry sectors, our stakeholders include technology providers, researchers and academics. Please find more information at www.nafems.org.

Conference website and online registration: www.nafems.org/nordic24

Agenda – Wednesday, 22 May 2024

Room A

Session 1 A – Keynote & plenary presentations 1

10:30 **Welcome and NAFEMS Introduction**
NAFEMS NORDIC Steering Committee, T. Morris, A. R. Oswald (NAFEMS)

10:40 **Keynote Presentation: Simulation-Based Decision Support for Transport System Development**
M. Eek (VTI The Swedish National Road and Transport Research Institute)

11:15 **Keynote Presentation: From CAE to SAE - From Computer- to Software Aided Engineering**
E. Drenth (Volvo Autonomous Solutions)

11:50 Lunch break

	Room A	Room B
	Session 2 A – AI/ML - 1	**Session 2 B – CFD / MBD**
12:50	**AI in FEM Simulation: Accelerated Optimization of Plastic Snap Hook Designs in the Automotive Industry** F. Dirisamer (Digital Physics AI)	**Evaluation of the Munk-Moment on a Wind Assisted Oil Tanker with CFD** A. Ommundsen (cDynamics)
13:15	**Machine Learning Optimization and Quick Verification of an Electric Vehicle Rocker Design** A. Papadopoulos (BETA CAE Systems)	**Electric Motor Direct Cooling: Assessment of Coolant Flowrate and Viscosity on Cooling Efficiency** M. Galbiati (Particleworks Europe)
13:40	**Machine Learning to Empower Engineering Organizations: Technology & Applications** T. Margaritis (Neural Concept)	**ODS&ODF - A Comprehensive Approach to Evaluate the Vehicle Stiffness using MBD** J. Weber, P. Ugale (Zeekr Technology Europe)
14:05	**AI Based Automatic Generation of Optimal Thermal System Architecturess** J.-P. Roux (DessIA Technologies)	**Analysing Ride Comfort in Realtime by Integrating Flexible Body in White** A. Chauhan (Dassault Systemes)
14:30	Break	
	Session 3 A – Fatigue / Fracture / Durability	**Session 3 B – AI/ML 2**
15:15	**The Discontinuous Strain Method: Accurately Representing Fatigue and Failure** L. Herrmann (Technical Univ. of Munich)	**Workshop:** **AI for Simulation Engineers** Moderated by M. Kassera (YasAI)
15:40	**Enhanced Low Cycle Fatigue Analysis** K. Hofwimmer (Magna Powertrain Engineering Center Steyr)	
16:05	**Integration of Fatigue Analysis in FEA Solver for a Faster and More Reliable Process** R. Helfrich (Intes)	
16:30	**Fatigue Life Investigation as a Part of a Complete Design Optimization Process** G. Korbetis, Christos Tegos (BETA CAE Systems)	
16:55	Break	
	Session 4 A – AI/ML 3 - HPC	**Session 4 B – Materials / Manufacturing**
17:35	**Enhancing Aircraft Safety Through Data-Driven Reduced Order Modelling for Birdstrike Analysis** R. Lombardi (Noesis Solutions); L. Hootsmans (GKN Fokker Aerospace)	**Fracture Modeling of Layered Composites in a Specialized Off-Axis Finite Element Framework (Winner NAFEMS NORDIC Student Award 2022)** L. Herrmann (Technical Univ. of Munich)
18:00	**Automated Report Generation: Utilizing Machine Learning and Python for Automation in FEA** A. Alper Akis (Enabl)	**Upgrade Parts´ Crashworthiness by Exploiting Injection Molding Manufacturing Effects** P. Fotopoulos (BETA CAE Systems); M. Richter (Matfem Ingenieurgesellschaft)
18:25	**Enabling Specialized Architectures for High-Performance Computing (HPC)** S. Zakrzewski (Rescale)	**Determination of Stresses in Vlasov Beam Sections** S. Erdoğan (Turkish Aerospace)
18:50	**Discussion**	**Post-Buckling Analysis of Composite Structures using FEM** K. Almaz (TU Delft)
19:15	End of presentation day 1	

Preliminary agenda subject to alteration.

19:15 **Get together in the exhibition hall: networking and discussion with beverages and snacks**

Room A

Session 5 A – Keynote & plenary presentations 2

08:30 **Welcome and NAFEMS Introduction**
NAFEMS NORDIC Steering Committee, T. Morris, A. R. Oswald (NAFEMS)

08:35 **Keynote Presentation: Simulation Driven Development at Volvo Car Corp.**
H. Hasselblad (Volvo Cars)

09:10 **Highlights from Project TRUSTIT** (Towards a Rational Approach to Credibility of Numerical Simulations in Industrial Applications)
F. Santandrea (RISE Research Institutes of Sweden)

09:35 Break

Room A

Session 6 A – Multiphysics

10:15 **EV Battery Structural Simulation at Volvo Cars**
P. Gustavsson (Volvo Cars)

10:40 **Electric Vehicle NVH Design: Design Space Exploration of Battery Pack / Body in White Integration**
T. Khalitov, K. Govindarajan, M. Lampin (Siemens Digital Industries Software)

11:05 **Strongly Coupled Multiphysics Simulation of a Loudspeaker Driver using a Multiharmonic Approach**
A. Deshmukh, A. Halbach, B. Khouya, R. K. Nagaraja, V. Lahtinen (Quanscient)

11:30 **Electric Drive Engineering Workflow and Multiphysics Integration - Project Presentation**
J. Brunel (Siemens Digital Industries Software)

Room B

Session 6 B – Uncertainty Quantification

Workshop A Human Friendly Introduction to Uncertainty Quantification in Engineering Simulations
Moderated by F. Santandrea (RISE)

11:55 Lunch Break

Session 7 A – Verification & Validation

13:00 **Building Simulation Models Credibility: Application to a Large-Scale Aerospace Structure**
P. Baudoin, F. Mathieu (Eikosim); N. Swiergiel (ArianeGroup)

13:25 **EVIDENT: Investigating Model Validation Approaches**
E. Dartfeldt, T. Sjögren (RISE Research Institutes of Sweden); T. Bogdanoff, J. Olofsson (Jönköping Univ.)

13:50 **Structural Numerical and Experimental Investigation of Urea Mixer Component Thickness to Reduce Cost, Weight and Thermal Mass**
H. K. Kuna (Dinex)

Session 7 B – AI/ML 4

Workshop:
Project Planning for AI-supported CAE
Moderated by SustainedBizz

14:15 Break

Session 8 A – Plenary presentations 3 / Farewell

14:45 **Modern Digital Twin Solutions - Overview and Applications**
P.-O. Jansell (Altair Engineering)

15:10 **Recent Advances in Non-linear Industrial Non-parametric Optimization**
A. Jurinic (Dassault Systemes)

15:35 **Stability Analysis and Error Correction Procedure for Optimization Mathematical Problems**
M. Alshbool (Zayed Univ.)

16:00 **Summary of Key Outcomes from the NAFEMS NORDIC 2024 Regional Conference / Farewell**
NAFEMS Nordic Steering Committee

16:10 End of Conference

NAFEMS REGIONAL CONFERENCES 2024

Additional NAFEMS regional conferences will take place worldwide in spring and fall 2024:
www.nafems.org/nrc24

NWC25

NAFEMS WORLD CONGRESS

19-22 MAY 2025 | SALZBURG | AUSTRIA

A WORLD OF ENGINEERING SIMULATION

Safe the date!
Abstract submission deadline likely mid November 2024
www.nafems.org/congress

NAFEMS

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