



PROGRAM - TEKMEK RESEARCH DAYS 2025

Monday 19th of May

11:00 – 12:30

Registration & Lunch (Department of Engineering Mechanics, Teknikringen 8, entrance floor – **corridor and torget**)

12:30 – 13:00

Welcome and introduction to TEKMEK, Fredrik Lundell & Zuheir Barsoum

(Department of Engineering Mechanics, Teknikringen 8, entrance floor, room: **HUGIN & MUNIN**)

13:00 – 15:00

Sessions A and B

15:00 – 15:30

Coffee break

15:30 – 17:30

Sessions C

18:00 – 21:00

Dinner, Restaurang Syster & Bror (Drottning Kristinas väg 24)

Session A: Presentations (13:00 – 15:00, Department of Engineering Mechanics, Teknikringen 8, entrance floor, room: **HUGIN & MUNIN**)

Session chair: Fredrik Lundell

13:00 – 13:20

Composite materials in lightweight structures and their applications, Per Wennhage

13:20 – 13:40

Affordable microphone arrays with super-resolution in space and time, Elias Zea

13:40 – 14:00

Future and Sustainable Aviation, Mrudul Chellapurath

14:00 – 14:20

Thrombosis Operator Network - Bridging Scales in Pathophysiological Blood Flow through Neural Operators, Marco Laudato

14:20 – 14:40

Research activities within fatigue and reliability and their application on welded structures, Gustav Hultgren

14:40 – 15:00

Rail bus 2.0 – how to use new technologies to make an old concept fit for future requirements, Richard Persson & Sebastian Stichel

Coffee break (Teknikringen 8, entrance floor – corridor and torget)

Session B: Research centers (13:00 – 15:00, Department of Engineering Mechanics, Teknikringen 8, entrance floor, room: **Vehicle Engineering Lab**, Teknikringen 8, entrance floor)

Session chair: Lanie Gutierrez Farewik

13:00 – 13:15

Swedish Maritime Robotics Centre (SMaRC), Peter Sigray

13:15 – 13:30

Advanced Computing for Sustainable Thermal Management (AdTherm), Mihai Mihaescu

13:30 – 13:45

Center for Mechanics and Materials Design (MMD), Zuheir Barsoum

13:45 – 14:00

ECO2 Vehicle Design, Jenny Jerrelind

14:00 – 14:15

Swedish e-science Research Centre (SeRC), Dan Henningson

14:15 – 14:30

Linné FLOW Centre, Ardeshir Hanifi

14:30 – 14:45

Centre of Excellence in Production Research (xpres), Magnus Burman

Coffee will be available from 15:00

Session C: Laboratory visits (15:30 – 17:30)

Teknikringen 8:

- Laboratory for fluid physics, Shervin Bagheri
- Marcus Wallenberg Laboratory for Sound and Vibration, Susann Boij & Stefan Jacob
- Wind tunnel L2000, Fredrik Lundell
- Laboratory for Lightweight Structures, Monica Norrby
- Laboratory for Solid Mechanics, Martin Öberg
- Vehicle Engineering Lab, Carlos Casanueva

Osquars backe 18:

- Promobilia MoveAbility Lab, Lanie Gutierrez Farewik

Drottning Kristinas väg 40

- Integrated Transport Research Labs (ITRL), Mikael Nybacka

Dinner

Tuesday 20th of May

9:00 – 11:00

Session D

11:00 – 11:30

Coffee break

11:30 – 12:30

Session E

12:30 – 13:30

Ending remarks & Lunch

Session D: Presentations (9:00 – 11:00, Department of Engineering Mechanics, Teknikringen 8, entrance floor, room: **HUGIN & MUNIN**)

Session chair: Mihai Mihaescu

9:00 – 9:20

Cubesats and Space Robotics, Huina Mao

9:20 – 9:40

Fluid Mechanics - a basis for biomedical flows and applications, Lisa Prahl

9:40 – 10:00

Characterization and analysis of degradation and fracture in metallic materials, Carl Dahlberg

10:00 – 10:20

Challenges within vehicle dynamics, Annika Stensson Trigell

10:20 – 10:40

Digital Twins of Human Neuromusculoskeletal System, Ruoli Wang

10:40 – 11:00

Towards materials at extremes: from intense dynamic compression to expansion, Michael Liverts

Coffee break

Session E: Presentations (11:30 – 12:30, Department of Engineering Mechanics, Teknikringen 8, entrance floor, room: **HUGIN & MUNIN**)

Session chair: Zuheir Barsoum

11:30 – 11:50

Research activities within material mechanics – Showcasing applications for batteries, biomechanics and bio-based (meta-)materials, Alexander Grötsch

11:50 – 12:10

Including lifecycle and circular strategies in vehicle design, Johan Larsson

12:10 – 12:30

Sail trim on ocean-going vessels – automating traditional sailing skills? Antonia Hillenbrand

Ending remarks & Lunch