

Program

	Plenary speakers, in lecture hall Runan (joint session)
	Lightweight Materials session, in lecture hall Palmstedtsalen
	Materials for Health session, in lecture hall Runan

Monday 30 September - Wednesday 2 October

"Material i våra liv"

Exhibition in Vovofoajén, lower level

Tuesday 1 October

08.15 - 09.00 Registration

09.00 - 09.10 *Welcome address*

Aleksandar Matic, Chalmers

09.10 - 09.55 *Biomaterials innovation and technology transfer*

William Bonfield, University of Cambridge, UK

09.55 - 10.20 Coffee break

SESSION 1

Lightweight Materials

Structural composite materials

Chair: Magnus Ekh, Chalmers

10.20 - 10.50 Keynote lecture:
Current problems and future challenges for structural composites

Maciej Wysocki, Swerea Sicomp

10.50 - 11.10 *Customised 3D fabrics for composite material components*

Nandan Khokar, Biteam AB

11.10 - 11.30 *An outlook into materials & composites in future cars*

Kaj Fredin, Volvo Car Corporation

11.30 - 12.00 *Efficient material usage in ship structures for safe and sustainable transportation*

Jonas Ringsberg, Chalmers

Materials for Health

Breakthroughs in Clinical Therapies and Paradigm Shifts in Industrial Processing

Chair: Peter Thomsen, Sahlgrenska Academy, GU

10.20 - 10.50 Keynote lecture:
A novel osseointegrated human-machine gateway

Rickard Brånemark
Sahlgrenska University Hospital

10.50 - 11.20 *Bone Conduction Hearing Implants*

Bo Håkansson, Chalmers

11.20 - 11.50 *Influence of interstitials on material properties of Ti6Al4V fabricated with Electron Beam Melting*

Mattias Fager, Arcam AB

12.00 - 13.00 Lunch break

13.00 - 13.45 *LIGHTer – Arena for lightweight solutions for a more sustainable world*
Boel Wadman, Swerea IVF

SESSION 2

Lightweight Materials

Cellulose Based Materials

Chair: Antal Boldizar, Chalmers

13.50 - 14.20 *Biobased nanocomposites*
Kristiina Oksman
Luleå University of Technology

14.20 - 14.50 *Progress in dissolving pulp manufacture*
Herbert Sixta
Aalto University, Finland

Materials for Health

Cells for Advanced Clinical Therapies

Chair: Julie Gold, Chalmers

13.50 - 14.10 *Engineering bone tissue substitutes from human induced pluripotent stem cells*
Giuseppe de Peppo
New York Stem Cell Foundation, USA

14.10 - 14.30 *Extracellular vesicles in cell-cell communication*
Karin Ekström
Sahlgrenska Academy, GU

14.30 - 14.50 *Potentials of mesenchymal stem cells in the translational medicine research field with focus on tissue engineering approaches for the degenerated intervertebral disc*
Helena Barreto Henriksson
Sahlgrenska University Hospital

14.50 - 15.20 Coffee break

SESSION 3

Lightweight Materials

Advances in materials and applications

Chair: Fang Liu, Chalmers

15.20 - 15.40 *Composites in aero engines*
Fredrik Edgren
GKN Aerospace Services

Materials for Health

Materials for Advanced Clinical Therapies

Chair: Marta Bally, Chalmers

15.20 - 15.40 *3D-printing and biofabrication of vascularized scaffolds for growth of organs*
Paul Gatenholm, Chalmers

15.40 - 16.00 *Rheocast Mg Al alloys for weight reduction in vehicles – corrosion properties*
Lars-Gunnar Johansson, Chalmers

16.00 - 16.20 *Hybrid nanocrystalline cellular materials for lightweight construction*
Uta Klement, Chalmers

16.20 - 18.30 Poster session

18.30 - 22.00 Dinner and entertainment

15.40 - 16.00 *Localized Controlled Drug Delivery from Mesoporous Implants*
Martin Andersson, Chalmers

16.00 - 16.20 *Local drug delivery from bone anchored implants*
Pentti Tengvall
Sahlgrenska Academy, GU

Wednesday Oct 2

09.00 - 09.45 *Learning about the blood coagulation system from the outside and inside with simple, low-cost inorganic materials*
Galen Stucky, University of California at Santa Barbara, USA

SESSION 4

Lightweight Materials

Electroactive composites

Chair: Kasper Moth-Poulsen, Chalmers

09.50 - 10.10 *Polymer semiconductors for renewable energy applications*
Christian Müller, Chalmers

10.10 - 10.30 *New piezoelectric textile fiber makes fabrics to sensors*
Bengt Hagström, Swerea IVF

10.30 - 11.00 Coffee break

Materials for Health

New Materials in Dentistry and Orthopaedics

Chair: Anna Martinelli, Chalmers

09.50 - 10.10 *Bioceramic in Dentistry and Orthopedics: "OLD"/"NEW"*
Wei Xia, Uppsala University

10.10 - 10.30 *Ordered materials for controlled release of pharmaceuticals*
Maria Wallin, Chalmers

SESSION 5

Lightweight Materials

Foamed structures

Chair: Christian Müller, Chalmers

11.00 - 11.30 *Advances in foamed materials*
Salvatore Iannace
University of Naples, Italy

Materials for Health

New Techniques for the Evaluation of Material – Cell Interactions

Chair: Margarita Trobos, Sahlgrenska Academy

11.00 - 11.20 *Spontaneous formation of parallel aligned macropores within polysaccharide gels*
Anna Ström, Chalmers

11.30 - 12.00 *Low density foams and aerogels from nanofibrillated cellulose*

Lars Wågberg
Royal Institute of Technology

12.00 - 12.20 *Microstructures of renewable materials*

Niklas Lorén, Swedish Institute for Food and Biotechnology

11.20 - 11.40 *Methodology for understanding the Osseointegration at different length scales*

Anders Palmquist
Sahlgrenska Academy, GU

11.40 - 12.00 *Emerging microscopy techniques for 3D imaging of soft and living matter*

Annika Enejder, Chalmers

12.00 - 12.20 *On incorporation of growth factors and proteins to biomaterials: future prospects for bone regeneration*

Ryo Jimbo, Malmö Högskola

12.20 - 13.20 Lunch break

SESSION 6

Lightweight Materials

Progress in textile materials

Chair: Hanna Härelind, Chalmers

Materials for Health

Bioanalytical Sensing

Chair: Martin Andersson, Chalmers

13.20 - 14.00 *Surface modification and functionalisation of textile materials: Digital finishing for functional and smart textile materials*

Vincent Nierstrasz
University of Borås

13.20 - 13.40 Keynote lecture:
Label-free biomolecular interaction analysis and equilibrium-fluctuation-based single-molecule dynamics

Fredrik Höök, Chalmers

13.40 - 14.00 *AH Peptide as a Broad-Spectrum Antiviral Drug: From Materials Science to Clinical Medicine*

Namjoon Cho, Nanyang Technological University, Singapore

14.05 - 14.50 *Designer Proteins for Injectable Stem Cell Transplantation*
Sarah Heilshorn, Stanford University, USA

14.50 - 15.00 Concluding remarks

15.00 - Coffee and mingling

Sneak preview of the brand new **Materials Processing Laboratory**