

MATERIALS FOR TOMORROW 2013

Preliminary Program (2013-08-29)

TUESDAY OCT 1

9.00 Welcome adress (Aleksandar Matic)

9.10 *Plenary talk (joint session)*

Title: Biomaterials innovation and technology transfer

Professor William Bonfield, Cambridge

9.55 – 10.20 Coffee break

10.20 – 12.00 Session 1 (split sessions)

LIGHTWEIGHT MATERIALS

Structural composite materials

Chair: Magnus Ekh, Dept of Applied Mechanics, Chalmers

10.20 – 10.50

Keynote lecture:

Current problems and future challenges for structural composites

Maciej Wisocki, 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 Plenary talk (joint session)

Title: *LIGHTer – Arena for lightweight solutions for a more sustainable world*

Boel Wadman, Swerea IVF

13.50 – 14.50 Session 2 (split sessions)

LIGHTWEIGHT MATERIALS

Cellulose based materials

Chair: *Antal Boldizar*

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

14.10 – 14.30

Extracellular vesicles in cell-cell communication

Karin Ekström, Sahlgrenska Academy, GU

14.30 - 14.50

Title TBA

Helena Barreto Henriksson, Sahlgrenska University Hospital

14.50 – 15.20 Coffee break

15.20 – 16.20 Session 3 (split sessions)

LIGHTWEIGHT MATERIALS

Advances in materials and applications

Chair: *Fang Liu*

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

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

16.20 – 18.30 Poster session

18.30 – 22.00 Dinner and entertainment

WEDNESDAY OCT 2

9.00 – 9.45 *Plenary talk (joint session)*

Title TBA

Professor Galen Stucky, UCSB

9.50 – 10.30 Session 4 (split sessions)

LIGHTWEIGHT MATERIALS

Electroactive composites

Chair: Kasper Moth-Poulsen

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

MATERIALS FOR HEALTH

New Materials in Dentistry and Orthopaedics

Chair: Anna Martinelli, Chalmers

09.50 – 10.10

Development of bioceramic materials for hard tissue applications

Håkan Engqvist, Uppsala University

10.10 – 10.30

Title TBA

10.30 – 11.00 Coffee break

11.00 – 12.20 Session 5 (split sessions)

LIGHTWEIGHT MATERIALS

Foamed structures

Chair: Christian Mueller

11.00 – 11.30

Advances in foamed materials

Salvatore Iannace, University of Naples

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, SIK

MATERIALS FOR HEALTH

New Techniques for the Evaluation of Material – Cell Interactions

Chair: Margarita Trobos, Sahlgrenska Academy, GU

11.00 – 11.20

Title TBA

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 Höskola (to be confirmed)

12.20 – 13.20 Lunch break

13.20 – 14.00 Session 6 (split sessions)

LIGHTWEIGHT MATERIALS

Progress in textile materials

Chair: Hanna Härelind

13.20 – 14.00

Surface modification and functionalisation of textile materials: Digital finishing for functional and smart textile materials

Vincent Nierstrasz, University of Borås

MATERIALS FOR HEALTH

Bioanalytical Sensing

Chair: Martin Andersson, Chalmers

13.20 – 13.40

Keynote lecture:

Title TBA

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 Plenary talk (joint session)

Designer Proteins for Injectable Stem Cell Transplantation

Sarah Heilshorn, Stanford University

14.50 – 15.00 Concluding remarks

15.00 - Coffee and mingling, SneakPreview of MPL lab