

Session Program

13-17 Sept 2021

**EUROPEAN CONGRESS AND EXHIBITION ON
ADVANCED MATERIALS AND PROCESSES -
EUROMAT 2021**

F4_Bioinspired materials

Virtual

Wednesday 15 September

15:30

F4_Bioinspired materials: F4_1_Plant inspired movement

Session | Location: Room 15

15:30–16:10

Adaptive biomimetic actuator systems for artificial Venus flytraps (Keynote)

Speaker

Dr Falk Tauber

16:10–16:30

Intertwined searcher stems of climbing plants as concept generator for a new generation climbing soft robots

Speaker

Prof. Thomas Speck

16:30–16:50

Staying in touch - The European Mistletoe (*Viscum album*) and its multifunctional connection to the host

Speaker

Mr Max Mylo

16:50–17:10

Taking inspiration from leaf movement triggered by motor cells: the biomimetic cellular actuator

Speaker

Dr Olga Speck

17:10

17:30

F4_Bioinspired materials: F4_2_Plant inspired structure and mechanics

Session | Location: Room 15

17:30–18:10

Transition zones between rod-shaped and planar elements: A technical challenge solved by nature? (Keynote)

Speaker

Mr Max Langer

18:10–18:30

Citrus fruit peels as inspiration for highly damping materials systems

Speaker

Mr Maximilian Jentzsch

18:30–18:50

How trees change their ultrastructure upon mechanical stress: mapping biological adaptation by large area, high resolution X-ray diffraction imaging

Speaker

Prof. Helga Lichtenegger

18:50-19:10

Shape Optimization Problems in Plants Morphology- The ratio of flexural to torsional rigidity

Speaker

Steve Wolff-Vorbeck

19:10

Thursday 16 September

09:50

F4_Bioinspired materials: F4_3_Cells and tissue engineering

Session | Location: Room 15

09:50–10:30

Correlating the material properties of natural spider silk with its success for nerve regeneration (Keynote)

Speaker

Aida Naghilou

10:30–10:50

Contracting fibrin-platelet clot as an active material

Speaker

Yueyi Sun

10:50–11:10

Optimization of additively manufactured scaffolds for bone tissue engineering

Speaker

Patrick Dondl

11:10–11:30

Novel bioinspired GO-COOH decorated hybrid scaffolds based on natural polymers designed by electrospinning technique

Speaker

Dr Jana Ghitman

11:30

11:50

F4_Bioinspired materials: F4_4_Bio-inspired composites and functional materials

Session | Location: Room 15

11:50–12:30

Highly stable bio-phosphors for high power Bio-Hybrid Light-emitting Diodes (Keynote)

Speaker

Ms Sara Ferrara

12:30–12:50

Magnetic Nacre: Superior Mechanical and Magnetic Performance of Highly Anisotropic Sendust-Flake Composites Freeze Cast in a Uniform Magnetic Field

Speaker

Dr Kaiyang Yin

12:50–13:10

An ivory-like material for stereolithography based additive manufacturing

Speaker

Ms Thaddäa Rath

13:10–13:30

Controlling mechanical properties and gradients in bio-based cellulose-polymer composites

13:30

Speaker

Ms Sophie Koch

14:40

F4_Bioinspired materials: F4_5_Robotics and general mechanical concept derived from nature

Session | **Location:** Room 15

14:40-15:20

Protective properties of soft shell structure inspired by the exoskeleton of Daphnia (Keynote)

Speaker

Dr Viacheslav Slesarenko

15:20-15:40

Multi-material 3D-printer for rapid prototyping of soft robotic elements

Speaker

Mr Stefan Conrad

15:40-16:00

Multifunctional surfaces based on liquid infused nanofibers mats

Speaker

Dr Ioana Carmen Vladu

16:00-16:20

Bio-inspired programmable mechanical metamaterials with crack detection functionality

Speaker

Mr Naeim Ghavidelnia

16:20