

Session Program

13-17 Sept 2021

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

***B6_Fatigue, wear and corrosion of materials
and structures***

Virtual

Thursday 16 September

09:50

B6_Fatigue, wear and corrosion of materials and structures: B6_1_Very High Cycle Fatigue

Session | Location: Room 4

09:50–10:10 **Frequency Effects during VHCF Testing of High Strength Steels**

Speaker

Prof. Ulrich Krupp

10:10–10:30

VHCF behaviour of structures and specimens made of a high-strength steel

Speaker

Mr Florian Himmelbauer

10:30–10:50

Hard metals in 20 kHz 3-point bending fatigue in the Very High Cycle Fatigue regime

Speaker

Mrs Aikaterini Chantziara

10:50–11:10

A new experimental wheel rail contact test bench to reproduce White Etching Layer on rail surface

Speaker

Sophie Cazottes

11:10–11:30

Decomposition of cementite in 100Cr6 steel during high-pressure torsion: influence of precipitate morphology, composition and matrix

Speaker

Mr Kiranbabu Srikakulapu

11:30

11:50

B6_Fatigue, wear and corrosion of materials and structures: B6_2_Hydrogen and Liquid Metal Embrittlement

Session | Location: Room 4

11:50–12:30

Heat treatment of ultra-high-strength steel fasteners for optimizing the hydrogen embrittlement resistivity (Keynote)

Speaker

Dr Andreas Drexler

12:30–12:50

Characterizing the hydrogen embrittlement of dual phase steels

Speaker

Mr Besim Helic

12:50–13:10

Combination of locally resolved detection and micromechanical techniques to investigate locally resolved hydrogen-assisted mechanical degradation

Speaker

Mr Patrick Grünewald

13:10–13:30

Investigation of hydrogen embrittlement in a high Mn twinning induced plasticity steel**Speaker**

Ms Heena Khanchandani

13:30

14:40

**B6_Fatigue, wear and corrosion of materials and structures:
B6_3_Fatigue I****Session** | **Location:** Room 4

14:40–15:00

Investigation of Cold Dwell Fatigue Phenomena in Near-alpha Titanium Alloys**Speaker**

Ms Zeliha İdil Kara

15:00–15:20

Comparison of Fatigue Properties of Au on Polyimide with and without a Cr Interlayer**Speaker**

Mr David Gebhart

15:20–15:40

Effects of grain size on fatigue crack propagation in rolled commercially pure titanium with harmonic structure**Speaker**

Prof. Yoshikazu Nakai

15:40–16:00

High-temperature fatigue modelling of a nickel-based superalloy at high stress regime**Speaker**

Dr Mahdiah Shahmardani

16:00–16:20

Fatigue failure and fatigue life on round thread rolling dies of electronic parking brake screws**Speaker**

Ms Yanxue Zhang

16:20

16:40

**B6_Fatigue, wear and corrosion of materials and structures:
B6_4_Surface Technology and Wear****Session** | **Location:** Room 4

16:40–17:00

Thermal oxidation process designs and their influence on characteristic surface properties of Ti6Al4V and TiZrNbHfTa**Speaker**

Mr Daniel Dickes

17:00-17:20

Design and characterization of abrasive-resistant alloys using data mining and machine learning**Speaker**

Ms Lisa Rateau

17:20-17:40

Investigation of the wear behaviour of a Fe-based hardfacing alloy elaborated by powder metallurgy route.**Speaker**

Dr Maria-Rosa Ardigo-Besnard

17:40-18:00

Tribological properties of hard anodized EN AW-4006 aluminium alloy: A comparison between dry and lubricated conditions**Speaker**

Enrico Baroni

18:00-18:20

Removal of oxide layers with commercially available Cr free solutions**Speaker**

Dr Ioana Carmen Vladu

18:20

Friday 17 September

09:50

B6_Fatigue, wear and corrosion of materials and structures: B6_5_Corrosion Engineering I

Session | Location: Room 4

09:50–10:10

Microstructure and resistance of Inconel 625 additively manufactured by L-DED and L-PBF technologies

Speaker

Mr Kewin Gola

10:10–10:30

Atomistic level into aqueous corrosion of aluminum-coated substrate

Speaker

Dr Marcela Trybula

10:30–10:50

On the use of liquorice extract as corrosion inhibitor of steel in simulated concrete pore solutions

Speaker

Francisco Velasco

10:50–11:10

Investigation of the corrosion resistance of TiNi alloys of various chemical compositions after deformation and thermal effects

Speaker

Dr Anna Churakova

11:10–11:30

Structure and kinetics of copper corrosion in humid air - reactive molecular dynamics vs experiment

Speaker

Dr Marcela Trybula

11:30

11:50

B6_Fatigue, wear and corrosion of materials and structures: B6_6_Corrosion Engineering II

Session | Location: Room 4

11:50–12:10

Computational thermodynamics based design of a novel low-cost corrosion and abrasion resistant stainless steel: A preliminary investigation

Speaker

Ms Majdouline Maher

12:10–12:30

Nanofibers reinforced coatings for protection of Al surfaces against corrosion

Speaker

Dr Ioana Carmen Vladu

12:30–12:50

Mechanical behavior in liquid lead-bismuth eutectic of some Alumina-Forming Austenitic (AFA) steels: effect of composition and aging at 650°C**Speaker**

Dr Ingrid Proriot Serre

12:50–13:10

Study on the crystallization process and temperatures throughout the continuous casting process of copper magnesium alloys**Speaker**

Mr Paweł Strzępek

13:10

14:40

**B6_Fatigue, wear and corrosion of materials and structures:
B6_7_Fatigue II****Session** | **Location:** Room 4

14:40–15:20

Characterisation of internal fatigue crack propagation in a titanium alloy (Keynote)**Speaker**

Jean-Yves Buffiere

15:20–15:40

Experimental Study of Welding Residual Stress Relaxation for the Assessment of Automotive Chassis components**Speaker**

Mr Hugo Tryla

15:40–16:00

HCF fatigue testing and analysis of nanometer-sized copper bending beams**Speaker**

Dr Florian Schaefer

16:00–16:20

Effect of solution annealing on fatigue crack propagation in the AISI 304L TRIP steel**Speaker**

Dr Michal Jambor

16:20

16:40

**B6_Fatigue, wear and corrosion of materials and structures:
B6_8_Fatigue III****Session** | **Location:** Room 4

16:40–17:00

Experimental study of rotating bending fatigue properties of a CoCrMo alloy treated by SMAT**Speaker**

Lucas Brasileiro

17:00–17:20

Cyclic behaviour of metastable 304L stainless steel: a comparison of conventionally- and SLM-processed material variants

Speaker

Dr Miroslav Šmíd

17:20–17:40

The effect of rolling orientation and corrosion environment on the fatigue life of AA 7075-T6

Speaker

Mr Alexandros Prospathopoulos

17:40–18:00

Influence of high retained austenite content on the defect tolerance of a bearing steel

Speaker

Mr Pascal Ostermayer

18:00