

Session Program

13-17 Sept 2021

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

B5_High entropy alloys

Virtual

Monday 13 September

11:00

B5_High entropy alloys: B5_1_Correlating phase stability and mechanical properties

Session | Location: Room 7

11:00–11:40

Phase stability, precipitation kinetics and their effects on the mechanical properties of CrMnFeCoNi high-entropy alloys (Keynote)

Speaker

Guillaume Laplanche

11:40–12:00

Phase stability and deformation behaviour of interstitial high-entropy alloys

Speaker

Prof. Zhiming Li

12:00–12:20

Ultrahigh-strength and ductile high-entropy alloys with coherent nano-lamellar architectures

Speaker

Dr Zengbao Jiao

12:20–12:40

Phase stability and transition-induced plasticity of body-centered cubic refractory high-entropy alloys from ab initio

Speaker

Dr Yuji Ikeda

12:40

14:00

B5_High entropy alloys: B5_2_Chemical effect on mechanical properties

Session | Location: Room 7

14:00–14:40

Local chemical fluctuation and its effects on mechanical properties of BCC high-entropy alloys (Keynote)

Speaker

Prof. Yuan Wu

14:40–15:00

Compositionally-invariant phase transformation control in AlTiVCr-based high entropy alloys

Speaker

Mr Paul Stavroulakis

15:00–15:20

Effects of solutes on saturation grain size, thermal stability and mechanical properties in medium and high entropy alloys

Speaker

Karsten Durst

15:20-15:40

Entropy effect on strength and hardness of hexagonal closest-packed high entropy alloy YGdTbDyHo**Speaker**

Mrs Laura Rosenkranz

15:40

16:00

B5_High entropy alloys: B5_3_CALPHAD assisted alloy design**Session** | **Location:** Room 7

16:00-16:40

Design of Corrosion and Irradiation Resistant Compositionally Complex Alloys Using a High-throughput Platform for Applications in Extreme Environments (Keynote)**Speaker**

Prof. Adrien Couet

16:40-17:00

High throughput screening and HEA/CCA concepts for new high performance Al alloys**Speaker**

Mr Patrick Conway

17:00-17:20

Development of Co-free CCA based on Calphad calculations and solid solution strengthening predictions within the Cr-Fe-Mn-Ni alloy system**Speaker**

Tanguy Manescau

17:20-17:40

Combinatorial computational design of $\gamma + \gamma'$ Co-free complex concentrated alloys (CCA) for nuclear applications.**Speaker**

Mr Dinesh Ram

17:40

Tuesday 14 September

09:50

B5_High entropy alloys: B5_4_Magnetism in HEAs

Session | Location: Room 7

09:50–10:30

Exceptional soft-magnetic properties in a FeCoNiPdCu high-entropy alloy (Keynote)

Speaker

Dr Primož Koželj

10:30–10:50

Tailoring Mechanical and Magnetic Properties of the FeCoNi(AlMn)_x High Entropy Alloys via Compositional Alterations

Speaker

Dr Anthoula Poulia

10:50–11:10

The nature of the magnetic state of a FeCoCrMnAl nanocomposite high-entropy alloy

Speaker

Dr Andreja Jelen

11:10–11:30

High-Entropy alloys as soft ferromagnets

Speaker

Dr Magdalena Wencka

11:30

11:50

B5_High entropy alloys: B5_5_Advanced characterizations

Session | Location: Room 7

11:50–12:30

High Entropy Alloy Surfaces: an Introduction with a Cantor Alloy (Keynote)

Speaker

Dr Julian Ledieu

12:30–12:50

Tensile properties of single crystalline derivatives of the high entropy alloy CrMnFeCoNi over a wide temperature range

Speaker

Mr Christian Gadelmeier

12:50–13:10

Understanding dislocation nucleation of refractory multi-principal element alloys using nanoindentation

Speaker

Silva Basu

13:10–13:30

Corrosion induced alloy sulfidation in a high-entropy alloy (HEA)

13:30

Speaker

Wencke Schulz

15:20

B5_High entropy alloys: B5_6_Strengthening mechanism**Session** | **Location:** Room 7

15:20–15:40

Strengthening in typical high entropy alloys (Highlight)**Speaker**

Prof. Zhaoping Lu

15:40–16:00

Theory of Yield Strength in BCC High Entropy Alloys**Speaker**

Francesco Maresca

16:00–16:20

Structure and superconductivity of tin-containing TiZrHf(Sn(Fe,Ni,Cu,Nb)) high-entropy alloys**Speaker**

Mrs Darja Gačnik

16:20–16:40

Corrosion Properties and Protective Oxide Film Characteristics of CrMnFeCoNi High Entropy Alloy and CrCoNi Medium Entropy Alloy**Speaker**

Mrs Annica Wetzel

16:40–17:00

Thermal memory effect in the non-equiatomic CoCrFeMnNi high-entropy alloy**Speaker**

Dr Stanislav Vrtnik

17:00

17:20

B5_High entropy alloys: B5_7_Eutectic and dual-phase HEAs**Session** | **Location:** Room 7

17:20–17:40

Tuning microstructures and mechanical properties of eutectic high-entropy alloy via powder metallurgy (Highlight)**Speaker**

Mr Liuliu Han

17:40–18:00

Development of eutectic refractory high entropy alloys**Speaker**

Dr Nikita Yurchenko

18:00–18:20

Additive manufacturing of eutectic high-entropy alloy with exceptional compressive properties**Speaker**

Mr Liuliu Han

18:20–18:40

Mechanical behavior of as-cast and aged AlCoCrFeNi_{2.1} eutectic high-entropy alloy at room and elevated temperature

Speaker

Dr Fevzi Kafexhiu

18:40–19:00

Surface hardening of the dual-phase medium entropy alloy AlCrFe₂Ni₂Mo_{0.1}

Speaker

Sergej Gein

19:00

Wednesday 15 September

09:50

B5_High entropy alloys: B5_8_Powder metallurgy and additive manufacturing

Session | Location: Room 7

09:50–10:10

Alloy Design and Microstructure Evolution in the Al_xTi_yCoCrFeNi Alloy System Synthe-sized by Laser Metal Deposition (Highlight)

Speaker

Dr Jörg Kaspar

10:10–10:30

Mechanical stability of selective laser melted metastable high entropy alloy upon annealing

Speaker

Mr Dingshun Yan

10:30–10:50

Additive Manufacturing of CoCrNi Medium Entropy Alloy

Speaker

Mr Sri Bala Aditya Malladi

10:50–11:10

Microstructural and mechanical characterization of AlCrFeMnTi light-weight high entropy alloy developed by mechanical alloying and spark plasma sintering

Speaker

Mr Armin Asghari-Alamdari

11:10–11:30

Microstructure and mechanical properties of Al-containing CoCuFeNi high entropy alloy elaborated by laser powder bed fusion

Speaker

Dr Kamel Moussaoui

11:30

11:50

B5_High entropy alloys: B5_9_Interstitials

Session | Location: Room 7

11:50–12:10

Interstitial effects on the incipient plasticity and dislocation behavior of a metastable high-entropy alloy (Highlight)

Speaker

Dr Kefu Gan

12:10–12:30

Investigation of the precipitation effects on the microstructure and mechanical properties of a nitrogen doped high entropy alloy

Speaker

Dr Mathieu Traversier

12:30-12:50

Structure and mechanical properties of nitrogen-doped CoCrFeMnNi high-entropy alloys after thermomechanical treatment.**Speaker**

Anastasiia Semeniuk

12:50-13:10

Process optimization for laser powder bed fusion of AlCrFe₂Ni₂ high entropy alloy**Speaker**

Dimitrios Vogiatzief

13:10-13:30

In situ alloying of powder to produce HEA using LMD**Speaker**

François Josse

13:30

15:30

B5_High entropy alloys: B5_10_High-temperature applications & Refractory HEAs**Session | Location:** Room 7

15:30-15:50

Effect of chemical composition and temperature on mechanical behavior of bcc structured refractory high entropy alloys**Speaker**

Dr Nikita Stepanov

15:50-16:10

Structure and mechanical properties of Ti-Nb-Hf-Al-Ta refractory high-entropy alloys**Speaker**

Ms Evgeniya Panina

16:10-16:30

Plastic flow localization phenomena in Ti-rich high-entropy alloys**Speaker**

Dr Sergey Zharebtsov

16:30-16:50

Mechanisms of plastic deformation in a precipitation strengthened Compositionally Complex Alloy for high temperature applications**Speaker**

Mr Florian Biermair

16:50-17:10

Investigation of electrochemical behaviour of AlCrFe₂Ni₂Mox alloys in 0.1M H₂SO₄**Speaker**

Jakub Czerski

17:10

17:30

B5_High entropy alloys: B5_11_Secere, dynamic and elevated-temperature deformation and miscellaneous**Session** | **Location:** Room 7

17:30-17:50

Tailoring the microstructure of CrFeCoNi and CrMnFeCoNi by Equal-Channel Angular Pressing and heat treatment to enhance the fatigue threshold against crack propagation**Speaker**

Mrs Lisa-Marie Rymer

17:50-18:10

Study on hot deformation behaviour and microstructure of CoCrFeMnNi HEA using constitutive modeling and processing map**Speaker**

Mr Madan Patnamsetty

18:10-18:30

Understanding the effect of severe warm-rolling on microstructure and texture of CoCrFeMnNi high entropy alloy**Speaker**

Jaydeep Saha

18:30-18:50

Dynamic compression response of meta-stable Fe₅₀Mn₃₀Co₁₀Cr₁₀ TRIP high entropy alloy**Speaker**

Mr Roopam Jain

18:50-19:10

Novel method for automatic detection of ordered structures in multicomponent alloys**Speaker**

George Varenikov

19:10