

Session Program

13-17 Sept 2021

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

B1_Advanced steels and cast irons

Virtual

Monday 13 September

11:00

B1_Advanced steels and cast irons: B1_1_Cast Iron I

Session | Location: Room 4

11:00-11:20

Correlation between Solidification Rates, Microstructure Integrity and Tensile Plastic Behavior in High Silicon Strengthened Ductile Irons (Highlight)

Speaker

Dr Giuliano Angella

11:20-11:40

Fatigue of tool steel and ductile iron in the High and Very High Cycle Fatigue regime

Speaker

Prof. Jens Bergström

11:40-12:00

Erosive wear behavior of a high-chromium cast iron: effect of different destabilization heat treatments

Speaker

Annalisa Fortini

12:00

14:00

B1_Advanced steels and cast irons: B1_2_Cast Iron II and Steel Making

Session | Location: Room 4

14:00-14:20

Interaction of nitrogen with white solidified cast iron model alloys (Highlight)

Speaker

Andreas Leineweber

14:20-14:40

Artificial Intelligence Approaches to Determine Graphite Formation in Ductile Iron

Speaker

Maximilian Brait

14:40-15:00

Set-up of generalized dataset for crack-closure-mechanisms of cast steel

Speaker

Mr Michael Horvath

15:00-15:20

Scaling behaviour of Si-alloyed steel slabs under reheating conditions

Speaker

Mr Gregor Mikl

15:20

16:00

B1_Advanced steels and cast irons: B1_3_Secondary tempered bainite**Session** | **Location:** Room 4

16:00–16:40

Secondary hardening steels by combining nanostructured bainite with secondary precipitation to enhance service properties at elevated temperatures (Keynote)**Speaker**

Dr Matthias Kuntz

16:40–17:00

Tempering behaviour of Low Temperature Bainite**Speaker**

Dr Carlos Garcia-Mateo

17:00–17:20

Kinetics and microstructural evolutions during the tempering of nano-bainitic and martensitic low alloyed steel**Speaker**

Dr Steve Gaudiez

17:20

Tuesday 14 September

09:50

B1_Advanced steels and cast irons: B1_4_Stainless Steels

Session | Location: Room 4

09:50-10:10

In-situ SEM, in-situ HT-EBSD and correlated EDXS observation of martensite substructure evolution during martensitic transformation and its correlation with the prior austenite grain size and local chemical variations in a PH15-5 steel (Highlight)

Speaker

Thomas Hoenigmann

10:10-10:30

Effect of delta ferrite on the impact toughness of a PH 13-8 Mo stainless maraging steel

Speaker

Mr Andreas Rosenauer

10:30-10:50

Development of Nano (Yttria and Lanthana) Dispersed Duplex Stainless Steel

Speaker

Mr Ashwani Kumar

10:50-11:10

Innovative elaboration method of ODS ferritic steels reinforced by Y2Ti2O7 pyrochlore phase oxide

Speaker

Mr Guillaume Josserand

11:10

11:50

B1_Advanced steels and cast irons: B1_5_Advanced Processes

Session | Location: Room 4

11:50-12:10

Formation of ultrafine single-variant martensite from fine ferrite + Mn rich cementite microstructure and its mechanical properties

Speaker

Prof. Shiro Torizuka

12:10-12:30

In-situ study on the impact of cooling rate on the martensitic transformation in high carbon steels

Speaker

Mr Thomas Kohne

12:30-12:50

Innovative heat treatment leading to formation of nanocrystalline bainitic microstructure with carbides in high carbon steel

Speaker

Monika Węsierska-Hinca

12:50–13:10

Iron carburization assisted by electric current**Speaker**

Mr Maxime Monzey

13:10

15:20

B1_Advanced steels and cast irons: B1_6_Quench and Partitioning**Session** | **Location:** Room 4

15:20–15:40

Effect of retained austenite on the mechanical properties of lean medium Mn Q&P steels (Highlight)**Speaker**

Simone Kaar

15:40–16:00

Influence of the alloy concept on the global and local formability of galvanized Q&P- steels**Speaker**

Mr Matthias Wallner

16:00–16:20

Microstructure and mechanical properties of partially ferritic Q&P steels**Speaker**

Mr Christoph Kickingner

16:20–16:40

Tough Ultrahigh Strength Medium Carbon Steels Processed by Direct Quenching and Partitioning**Speaker**

Dr Sumit Ghosh

16:40–17:00

Thermal Stability of Retained Austenite of Martensitic Stainless Steels treated by Quenching and Partitioning**Speaker**

Ms Gaojie Li

17:00

17:20

B1_Advanced steels and cast irons: B1_7_Modelling of Advanced steels**Session** | **Location:** Room 4

17:20–17:40

Unraveling the mechanisms governing variant selection during ausforming treatments by Finite Elements and Crystal Plasticity (Highlight)**Speaker**

Ms Adriana Eres-Castellanos

17:40–18:00

Discrete Grain Growth Simulation Of Statistically Modeled Microstructure**Speaker**

Mr Marc Laub

18:00-18:20

Improvement and application a physical-based model of tempered martensite in low-carbon steels and their tensile properties

Speaker

Juan Macchi

18:20-18:40

Gibbs energy minimization model for the austenite-ferrite phase transformation in Fe-C-X-Y alloys

Speaker

Michel Perez

18:40-19:00

Modelling and verification of Quenching and Partitioning (Q&P) of nitrogen alloyed martensitic stainless steels

Speaker

Ms Simona Kresser

19:00

Wednesday 15 September

09:50

B1_Advanced steels and cast irons: B1_8_High Strength Low alloyed steels

Session | Location: Room 4

09:50-10:10

Influence of Nb and Ti on the recrystallization and precipitation behavior of HSLA steels (Highlight)

Speaker

Mr Stefan Monschein

10:10-10:30

Refinement of bainitic and martensitic microstructures after nitrogen enrichment of a low alloyed steel

Speaker

Madhumanti Mandal

10:30-10:50

Mechanisms for suppressing discontinuous precipitation and improving mechanical properties of NiAl-strengthened steels through nanoscale Cu partitioning

Speaker

Bingchen Zhou

10:50

11:50

B1_Advanced steels and cast irons: B1_9_Advanced Characterization of steels

Session | Location: Room 4

11:50-12:10

Characterization of high speed steels - In-situ experimental data and their evaluation supported by machine learning algorithms (Highlight)

Speaker

Prof. Ernst Gamsjäger

12:10-12:30

MX carbonitride precipitation in 2.25Cr-1Mo-0.25V multi-layer weld metal

Speaker

Ms Hannah Schönmaier

12:30-12:50

Use of time- and space-resolved in-situ high energy X-ray diffraction for the characterization of the compositional dependence of the austenite-to-ferrite transformation kinetics in steels

Speaker

Dr Imed-Eddine Benrabah

12:50-13:10

Description of bainite morphologies during anisothermal transformation in a microalloyed steel

13:10

Speaker

Mr David De-Castro

15:30

B1_Advanced steels and cast irons: B1_10_Advanced High Strength Steel Concepts**Session** | **Location:** Room 4

15:30-15:50

Development of a new high silicon 3rd generation AHSS (Highlight)**Speaker**

Dr Mattia Franceschi

15:50-16:10

Developing of new heat treatments of K340 steel**Speaker**

Krzysztof Chmielarz

16:10-16:30

Interrupted quenching and bainitizing below Ms of X38CrMoV5-1 steel - possibilities and limitations**Speaker**

Grzegorz Łukaszewicz

16:30-16:50

Investigating bainite formation in a low carbon steel in the presence of pre-existing martensite**Speaker**

Sharmistha Dhara

16:50-17:10

Novel Temperature Resistant Aero-engine Bearing Steel**Speaker**

Mr Jean-Baptiste Coudert

17:10

17:30

B1_Advanced steels and cast irons: B1_11_Processing of Advanced High Strength Steel**Session** | **Location:** Room 4

17:30-17:50

Liquid metal embrittlement of 3rd generation advanced high strength steel driven by nano-intermetallic phase formation along grain boundaries (Highlight)**Speaker**

Mr Yuki Ikeda

17:50-18:10

The effect of boron and silicon on liquid metal embrittlement in resistance spot welding of Zn-coated dual phase steel**Speaker**

Mrs Elahe Akbari

18:10-18:30

Effect of ultra-fast treatment on the microstructure of low alloyed steels: Experiment and simulation**Speaker**

Dr Marianthi Bouzouni

18:30