

The conference schedule

Tuesday, 10 September 2019

18:00 - 20:00 Registration

Wednesday, 11 September 2019

8:00 - 10:00 Registration

8:30 - 9:00 **Coffee Break**

9:00 - 9:10 **Conference opening**

Session I: Heat treatment and thermomechanical processing of metals and Metal forming

Chairman: Associate Professor Adam Grajcar, DSc, Ph.D.; prof. Ing. Tibor Kvačkaj, CSc.

- 9:10 - 9:35 **Heat treatment strategies for hot-rolled and cold-rolled medium-Mn sheet steels**, Adam Grajcar, **Invited lecture**
- 9:35 - 10:00 **Mechanical properties of CuCrZr alloy processed by ECAP and asymmetric rolling at ambient and cryogenic conditions**, Tibor Kvačkaj, **Invited lecture**
- 10:00 - 10:20 **Combination of press-hardening and isothermal holding in the treatment of high-strength steel**, Hana Jirková
- 10:20 - 10:40 **Coffee Break**
- 10:40 - 11:00 **Evolution of Microstructure and Texture in FeCoCr(Al, Mn)_{0.25} Magnetic High Entropy Alloy During Thermomechanical Processing and Its Mechanical Properties**, Zaid Ahmed
- 11:00 - 11:20 **CFD simulation of the multiphase heat transfer during the quenching process**, Jan Novosád
- 11:20 - 11:40 **Induction hardening of steels with use of the device for incremental forming of round bars HDQT-R 30-12**, Michal Peković
- 11:40 - 12:00 **Coiling simulations of medium-Mn sheet steels using dilatometry**, Mateusz Morawiec
- 12:00 - 13:00 **Lunch at the hotel restaurant**

Session II: Mechanical testing and thermophysical measurement

Chairman: Ing. Pavel Žlábek, Ph.D.; Ing. Pavel Kejzlar, Ph.D.

- 13:00 - 13:20 **Small punch testing of Fe-Al based alloys with Ti and Nb additions**, Petr Dymáček
- 13:20 - 13:40 **Optimization of test specimen dimensions for thermal power station exposure device**, Eva Chvostová
- 13:40 - 14:00 **The effect of mechanical surface pre-treatment on the strength of the adhesive joint of high strength sheets**, Pavel Kejzlar
- 14:00 - 14:20 **Flash pulse phase thermography for a paint thickness determination**, Lukáš Muzika
- 14:20 - 14:40 **Coffee Break**
- 14:40 - 15:00 **Static and dynamic testing of a bogie**, Jan Tittel
- 15:00 - 15:20 **Microhardness measurement on heterogeneous joints**, Milan Vnouček
- 15:20 - 15:40 **Practice in Material Testing Using DIC Method**, Jakub Zďěblo

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Session III: Non-ferrous metals

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Chairman: Ing. Petr Dymáček, Ph.D.; Dr. Zaid Ahmed Mohammed

- 15:40 - 16:00 **Effect of revolutions number on mechanical properties of HPT processed copper**, Daniel Melzer
- 16:00 - 16:20 **Intermetallics formation during hot dip galvanizing of high carbon steel**, Peter Gogola
- 16:20 - 16:40 **Coffee Break**

Session IV: Nanotechnology and nanomaterials

Chairman: Ing. Petr Dymáček, Ph.D.; Dr. Zaid Ahmed Mohammed

- 16:40 - 17:00 **The effect of NPs addition on the photocatalytic and antibacterial effectivity of composite TiO₂/SiO₂ paint**, Michaela Jakubičková
- 17:00 - 17:20 **The effect of SiO₂ NPs addition on lubrication properties of 10W-40 engine oil**, Ondřej Seibert
- 17:20 - 17:40 **Advanced oxidation processes**, Lukáš Vála
- 17:40 - 18:40 Poster session
- 19:00 **Conference dinner at the hotel restaurant**

Thursday 12 September 2019

- 8:00 - 8:20 **Coffee Break**

Session IV: Nanotechnology and nanomaterials

Chairman: doc. Ing. Tomas Křenek Ph.D.; Ing. Tomáš Kovářík, Ph.D.

- 8:20 - 8:40 **Small-and wide-angle X-ray scattering (SAXS/WAXS) in materials science**, Petr Bělský
- 8:40 - 9:00 **Evaluation of Microstructural and Thermal Properties of Sol-Gel Derived Silica-Titania Based Porous Glasses**, Kalim Deshmukh
- 9:00 - 9:20 **Catalytic reduction of NO with CO over supported Fe-Based Catalysts**, Fatemeh Gholami
- 9:20 - 9:40 **Hierarchically porous aluminosilicate substrates as a promising carriers for photocatalytic nanoparticles**, Tomáš Kovářík, **Invited lecture**
- 9:40 - 10:00 **Titanium-based porous materials with nanostructured bioactive surface for enhanced osseointegration**, Tomáš Křenek, **Invited lecture**
- 10:00 - 10:20 **Preparation and characterization of PVA nanocomposites with bio-functionalized nanodiamonds**, Tomáš Remiš
- 10:20 - 10:40 **Coffee Break**

Session V: Additive manufacturing (3D printing) and Microscopy

Chairman: doc. Ing. Ludmila Kučerová, Ph.D.; Dr.-Ing. Hana Jirková, Ph.D.

- 10:40 - 11:00 **Intermetallic Phases in 3D Printed INCONEL 718**, Dagmar Jandová
- 11:00 - 11:20 **Additive manufacturing of maraging steel on low alloyed high strength TRIP steel**, Ludmila Kučerová
- 11:20 - 11:40 **Methodology for observation of maraging tool steel after 3D printing using FIB and STEM mode**, Kateřina Opatová
- 11:40 - 12:00 **Presentation of LAC furnaces - the processing of 3D printed parts and more**, Rudolf Woznica
- 12:00 - 12:20 **Residual stress investigation in additively manufactured samples**, Jaroslav Vavřík
- 12:20 - 13:25 **Lunch in the lounge B**

Session VI: ESF project of the University of West Bohemia

Chairman: doc. Ing. Miloslav Kepka, CSc.

- 13:25 - 13:45 **Design and Fatigue Testing under VHCF conditions**, Luis Reis, **Invited lecture**
13:45 - 14:05 **Ultra-low-cycle fatigue of pipeline steels**, Abílio de Jesus, **Invited lecture**
14:05 - 14:25 **Fatigue Behavior of Additive Manufactured Materials: An Investigation into Feedstock-Process-Structure-Property-Performance Relationships**, Nima Shamsaei, **Invited lecture**
14:25 - 14:45 **Heat treatment process effect on the fatigue properties of selected steels**, Vladimír Chmelko, **Invited lecture**
14:45 - 15:05 **Panel discussion to all presentations of this section**
15:05 - 15:25 **Coffee Break**

Funding of invited speakers of foreign professors in this conference session:

Project title: ESF projekt Západočeské univerzity v Plzni

Registration number of the project: CZ.02.2.69/0.0/0.0/16_015/0002287



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Session VII: Heat treatment and thermomechanical processing of metals and Metal forming

Chairman: doc. RNDr. Dagmar Jandová, Ph.D.; Dr.-Ing. Hana Jirková, Ph.D.

- 15:25 - 15:45 **Effect of Mn addition on serrated plastic flow behaviour in high-strength multiphase steels with retained austenite**, Aleksandra Kozłowska
15:45 - 16:05 **Material challenges of steam turbine blades operated in wet steam region - Part 1**, Jiří Kučera
16:05 - 16:25 **Material challenges of steam turbine blades operated in wet steam region - Part 2**, Jakub Vlasák
16:25 - 16:45 **Influence of higher partitioning temperatures on mechanical properties of heat treated high strength steel alloyed with 1.3% of chromium**, Tomáš Janda
16:45 - 17:05 **Effects of hot forging on the shape and size of prior austenite grain in HS 6-5-2 high-speed steel**, Soňa Benešová
17:05 - 17:25 **Coffee Break**
17:25 - 17:45 **Influence of chemical composition and parameters of heat treatment on the mechanical properties and microstructure of TRIP steels**, Dagmar Bublíková
17:45 - 18:05 **Rolling of ingots of third-generation high-strength steels into sheets**, Jiří Vrtáček

Friday 13 September 2019

- 9:00 - 9:30 **Departure by bus from hotel Primavera to the excursion to RTI**
9:30 - 10:30 **Excursion in the Regional Technological Institute at the University of West Bohemia**
10:30 **Closing of the conference**
10:30 - 11:00 **Departure by bus from RTI to Hotel Primavera**

E-posters

Posters will be presented as E-POSTERS on the conference websites as well as projected during the poster session - presentation of each poster - ca 1-2 minutes (optional). E-posters will be available throughout the conference on the site www.ping.zcu.cz



The potential of application of Ni-layer for enhancement of utility properties of freight wagons, Zuzana Andršová

Mechanical and fracture properties of 316L steel grade prepared by L-PB, Jana Bidulská

Influence of heat treatment on properties of SD251-PH1 composite produced by additive SLM technology, David Bricín

The effect of application of the plaster as a mould material on the microstructure and properties of AlSi9 aluminium alloy, Tomasz Bucki

PEO layers on Mg-based metallic glass for decreasing hydrogen evolution, Katarzyna Cesarz-Andraczke

The structure and magnetic properties of rapidly quenched Fe₇₂Ni₈Nb₄Si₂B₁₄ alloy, Lukasz Hawelek

Effect of chromium on bainite transformation and microstructural evolution in austempered unconventional steels 42SiCr and 42SiMn, Štěpán Jeníček

Characterization and corrosion behavior of TiO₂ thin films deposited onto Mg-based alloy for orthopedic applications, Aneta Kania

The experimental investigation of behaviour of expanded polystyrene (EPS), Omid Khalaj

Design and optimization of a closed die forging of nickel-based superalloy turbine blade, Jakub Kotous

Optimization of workability technological testing for open-die forging, Jakub Kotous

Effect of soaking temperature on the microstructure and mechanical properties of heat treated Al-Si-Nb TRIP steel, Ludmila Kučerová

Stabilization of austenitic stainless steel used in nuclear industry – Project introduction, Josef Mach

Composition and morphology of composite coatings, Jan Novotný

Influence of temperature and speed of the laser head on the final structure surface hardened steel ČSN 12050 (EN 10083-2 steel 1.1191), Pavel Peukert

Innovative manufacturing technology of components of machine from amorphous materials, Wirginia Pilarczyk

Effect of processing parameters on microstructure and properties of CuSn10P1 alloy fabricated by SLM, Marcin Polak

Characterization of Low Cycle Fatigue Parameters of Rotor Steel using Sub-sized Specimens, Radek Procházka

The influence of hot forging on the size and frequency of carbides in HS 6-5-2, Vojtěch Průcha

Optimization of metallic glasses for additive technologies. The role of entropy and enthalpy in formation of amorphous structure, Adrian Radon

Effects of Deformation on the Behaviour of Chromium Carbides in Tool Steel Studied by Use of Semi-Solid Forming, Kateřina Rubešová

TEM and SEM Investigation of AZO Thin Film Microstructure, Petra Šotová

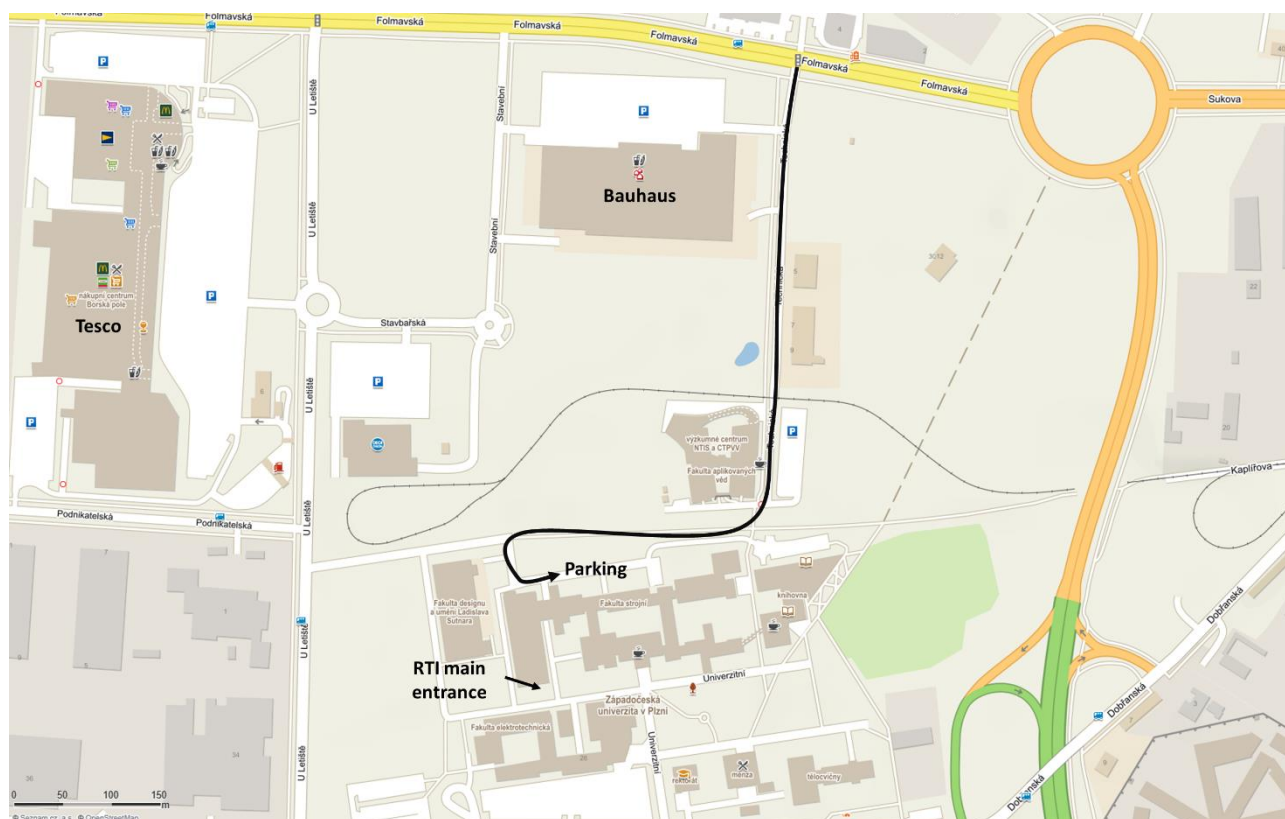
The effect of carbon addition on the structure and high – temperature strength of Fe₃Al – based iron aluminide doped by niobium, Martin Švec

Information for participants

Lunch will be situated at the Primavera hotel.

Conference dinner will be on Wednesday at 19:00 at the Primavera hotel.

Excursion to RTI / UWB – the transfer is arranged by bus from the hotel Primavera at 9:00, participants who come to RTI on their own should be at 9:30 in front of RTI's main entrance - see map. Parking spaces will be reserved for conference participants.



We warmly invite you to the next PING conference

which will take place in Pilsen in September 2021

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This conference is organized under the patronage of the Regional Institute of Technology of the University of West Bohemia in Pilsen www.rti.zcu.cz.



FACULTY OF MECHANICAL
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Fifth PING Conference

Modern trends in material engineering

7–10 September 2021

Pilsen, Czech Republic

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Conference Focus

The conference will focus on recent trends and findings in the field of material engineering. The conference will cover metallography and microstructure analysis (light, electron microscopy, X-ray diffraction phase analysis), forming, heat treatment, additive manufacturing (3D printing), mechanical testing, defectoscopy, physical testing (DTA, dilatometry, etc.), modelling and simulation. The conference will provide a unique opportunity to share the latest information and knowledge and discuss them with other experts in the field.

Conference Topics

- Metal forming
- Heat treatment and thermomechanical processing of metals
- High-strength steels
- Non-ferrous metals
- Mechanical testing and thermophysical measurement
- Modelling (of processes and materials) and simulations in heat treatment and metal forming
- Use of microscopy and X-ray methods in research and in dealing with process issues
- Characterisation of microstructures produced by heat treatment and thermomechanical processing
- New techniques and methods in metallography
- Nanomaterials - not limited to mechanical engineering
- Additive manufacturing (3D print)



We look forward to meeting you at the PING 2021 Conference.

CONFERENCE THEMES, DEADLINES, CONFERENCE FEE, INSTRUCTIONS FOR AUTHORS, REGISTRATION, SUBMISSION OF ABSTRACTS, PAYMENT AND OTHER INFORMATION:

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