



MODERN TRENDS IN MATERIAL ENGINEERING

PING 2019

PROCEEDINGS

10. - 13. 9. 2019

PILSEN, CZECH REPUBLIC

Regional Technological Institute EXPERIMENTAL FORMING LABORATORY

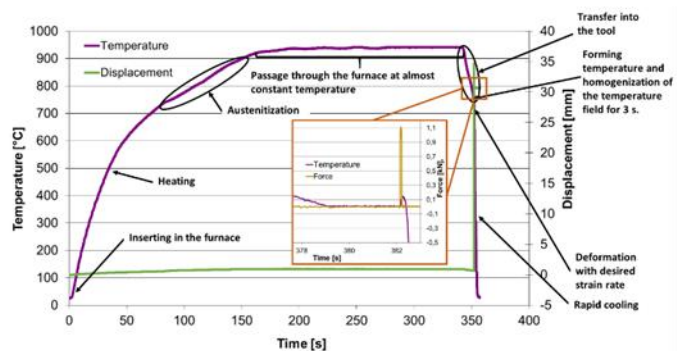
The Experimental Forming Laboratory works on heat treatment and thermomechanical treatment of metals and on testing new concepts in physical simulation of metalworking leading to optimization and integration of manufacturing processes. This effort can lead to extraordinary properties in materials and to greater effectiveness of manufacturing technologies.



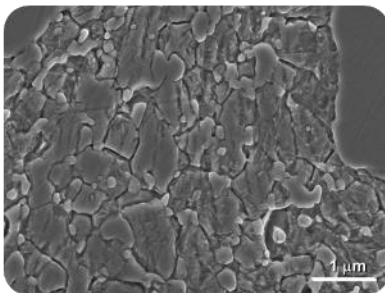
Unconventional thermomechanical treatment of steels and alloys

Development of new thermomechanical treatment sequences and processes for high-strength low-alloy steels and alloys.

Sophisticated microstructures produced by means of unconventional metallurgical treatment for excellent strength and stress-strain characteristics.



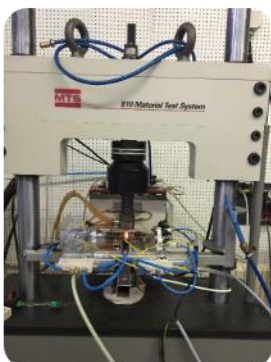
Design of unconventional and unusual microstructures



Development of new metalworking processes is focused on creating unusual microstructures in ordinary materials. The new microstructures lead to enhanced properties, such as wear, corrosion, creep and fatigue resistance.

KEY EQUIPMENT

- Thermomechanical simulator
- Equipment for developing incremental forming processes
- CNC cutting machine – waterjet and plasma cutting
 - MEBW-60/2 electron beam welder
- Equipment for bending and brake bending of precision sheet metal parts
- FASTCAM SA-X2 high-speed camera



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PING 2021

Fifth PING Conference

Modern trends in material engineering

7–10 September 2021

Pilsen, Czech Republic

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: WWW.PING.ZCU.CZ

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Dear reader,

I proudly present the abstracts collection of fourth conference PING 2019 – Modern Trends in Material Engineering. I wish to express my sincere thanks to all authors who have contributed to this conference and all who present their articles to the audience during the conference. I would also like to thank the editorial board members and all colleagues for their work.

In total of 60 abstracts represent the articles which deal with several topics, this time focused on mechanical testing, thermophysical measurement, heat and mechanical treatment, forming, ferrous/nonferrous metals, nanomaterials and nanotechnologies, microscopy and, last but not least, on additive manufacturing. It is a wide range of engineering topics and I hope our conference PING will be more and more attracting for high quality submissions and an ever-growing readership.

Next conference focusing on modern trends in material engineering will begin on 7th September 2021, and I look forward to seeing again a wide range of interesting topics. Now back to the PING 2019 - enjoy it!



Pavel Žlábek

Head of RTI laboratories