

**MODERN TRENDS IN MATERIAL ENGINEERING**  
**PING JUNIOR 2021**  
**PROCEEDINGS**

7. - 10.9.2021

PILSEN, CZECH REPUBLIC

# Regional Technological Institute EXPERIMENTAL FORMING LABORATORY

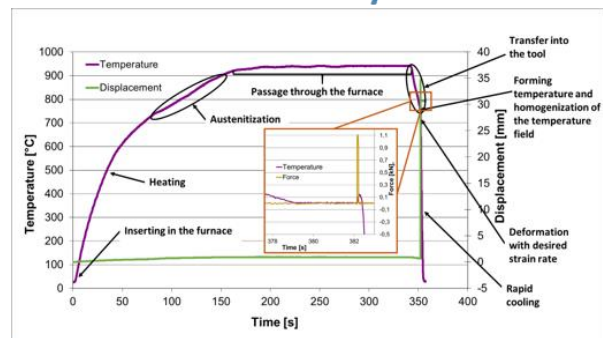
The Experimental Forming Laboratory works on heat treatment and thermomechanical treatment of metals and on testing new concepts in physical simulation of metalworking leading to optimization and integration of manufacturing processes. This effort can lead to extraordinary properties in materials and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



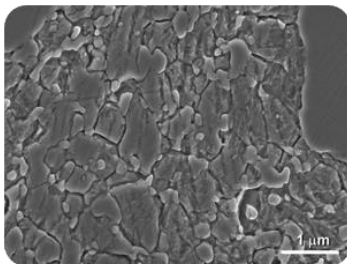
## Unconventional thermomechanical treatment of steels and alloys

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.



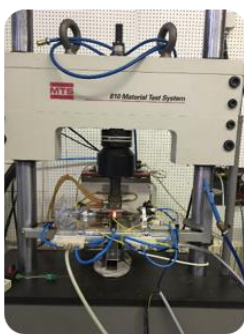
## Design of unconventional and unusual microstructures



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
- Wire-cut Electric Discharge Machine



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## Proceedings PING Junior 2021 - Modern Trends in Material Engineering

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# PING 2022

Seventh PING Conference

Modern trends in material engineering

13–16 September 2022

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 2022 Conference.**

CONFERENCE THEMES, DEADLINES, CONFERENCE FEE, INSTRUCTIONS FOR AUTHORS, REGISTRATION, SUBMISSION OF ABSTRACTS, PAYMENT AND OTHER INFORMATION: [WWW.PING.ZCU.CZ](http://WWW.PING.ZCU.CZ)

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