



## Pozvánka na přednášku / Lecture Announcement

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*Název / Title*

### Optimization of rheological models

*Přednášející / Lecturer*

**Adam Ciszewicz**

*Cracow University of Technology, Poland*

*Jazyk / Language: English*

**Monday 4. 12. 2023, 16:00 h**

FCE BUT, Brno, Veverí 331/95,

budova / Building C, místnost / Room 421

**zasedací místnost ústavu STM**

*Abstrakt / Abstract*

Rheology is a complex field of Mechanics, which takes into account stress and strain in materials, and their changes over time. Modeling such complicated relationship requires modern computer methods, such as sampling and optimization.

In the lecture we will cover the basics of rheology, including creep and stress relaxation, how to describe creep in polymers with simple mechanical models (ranging from 1-parameter to 4-parameter Burgers model), and how to find optimal parameters for these models with modern optimization approaches, including metaheuristic methods.

The lecture is based on classes available at the Faculty of Mechanical Engineering of Cracow University of Technology. In its basic form, it is taught as a part of "Strength of Materials" lab, while the variants of it, focusing on optimization, serve as a simple introduction to modern approaches in numerical estimation of model parameters.

The lecture will end with an open discussion regarding teaching and learning new methods.

*Přednášející / Lecturer*

Adam Ciszewicz is an Assistant Professor in the Department of Applied Mechanics and Biomechanics at Cracow University of Technology. He received his PhD in Mechanics in 2017 and ever since studied various problems in the field of Mechanics and Biomedical Engineering. His main research interest are in Metaheuristic Optimization (Genetic Algorithm and its variants: Real-Coded GA, structured GA; hybrid RC-GA with local methods; Differential Evolution) in various applications and Machine Learning, mainly for Computer Aided Surgery.

*Organizátor / Organizer*

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*Projekty / Projects*

- REG - region uczący się (European funds under OP Knowledge Education Development)