



SEMINAR
Institute of Theoretical and Applied Mechanics
of the Czech Academy of Sciences
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Institute of Theoretical and Applied Mechanics, CAS

invites you to lectures and discussion within
the lecture series **ITAM Seminar**

Digitalization of cultural heritage

given by Ing. Hana Hasníková, PhD., Dept. of Applied Mechanics and Structures, ITAM

During the lecture the possibilities of culture heritage digitalization, which was the main task of the internship abroad supported by The Ministry of Education, Youth and Sports of the Czech Republic, will be presented.

The interdisciplinary field on the borders of geomatics, architecture, culture heritage and graphical design is developing rapidly and its possibilities are wide. The topic will be described on the case study of Baroque Library in Klementinum, because the innovative workflow SCAN-to-BIM was used for the model creation. The workflow contains the following steps: in situ data collection by an ordinary surveying method (e.g. laser scanning, photogrammetry), the data processing to the form of a usable point cloud and the creation of 3D digital models (NURBS, BIM) overlapping into information database system or virtual reality.

Characterization of CFRP samples produced by resin infusion using the phase contrast and dark-field imaging

Design of the low-cost 3D laboratory platform rocker

given by Ing. Jan Sleichert, Dept. of Biomechanics, ITAM.

In this session, two main tasks of internship abroad supported by The Ministry of Education, Youth and Sports of the Czech Republic will be presented: 1) Multi-modal approach to characterize macro- and microstructural features in carbon fiber reinforced polymer samples produced by resin infusion; 2) Low-cost 3D laboratory rocker.

First section of the presentation will be focused on structural characterization of the CFRP samples produced by resin infusion. For this purpose, grating-based X-ray imaging of the samples was observed using Skyscan 1294 (desktop phase-contrast X-ray microtomograph) for detailed description the inner structure (fiber lay-up, defects). The second part will describe custom-designed 3D platform rocker which is already used to mixing contrast agent into a target tissue for enhance the radiodensity. This device was designed as a low-cost variant compared to the available commercial devices.

The lecture will be held on Wednesday, March 20, 2019 at 10:00 AM in the building of the Institute of Theoretical and Applied Mechanics, Prosecká 76, 190 00, Prague 9.