

Session IV

MECHATRONIC SYSTEMS

Committee: **Ing. Igor Béal, PhD. – chairperson**
doc. Ing. Mária Hyplusová, PhD.
Ing. Peter Ťapák, PhD.

8:30 - 11:30

- 1. Cost-effective 3D object reconstruction using photogrammetry and collaborative robot**

Martin Michalovič, Oto Haffner and Erik Kučera

- 2. Application for schedule sports competition**

Marian Choma and Jan Ciganek

- 3. When LLMs fall short**

Rastislav Tvarožek and Oto Haffner

- 4. Digital twin for battery systems: review and conceptual hybrid modeling framework**

Milan Plzák, Martin Baťa, Šimon Berta, Gabriel Gálik, Juraj Paulech,
Michal Miloslav Uličný and Andrej Üрге

- 5. Motor design, stability, and safety considerations for sensorless control of permanent magnet synchronous motors**

Michaela Beňušková

- 6. Algebraic deadbeat controller design for a laboratory model**

Matej Hanzalík and Alena Kozáková

- 7. Automatic reporting of energetic data**

Ľuboš Galandák, Zoltán Sztás, Oto Haffner and Erik Kučera

8. Proposal of generative 3D identifier framework for enhanced mixed reality applications in logistics

Kamil Kušnirák, Ondrej Kolimár, Oto Haffner and Erik Kucera

9. Architecture of OPC UA compatible controller for mechatronic systems using Petri nets in Python

Ondrej Kolimár, Kamil Kušnirák, Erik Kucera and Oto Haffner

10. Design of active suspension LQGI control of a half car vehicle model

Daniel Páček

14:00

Award Ceremony (AB-150)