Advanced mechatronics devices for smart technological solutions

UNIRI project uniri-tehnic-18-32 “Advanced mechatronics devices for smart technological solutions“

Team members

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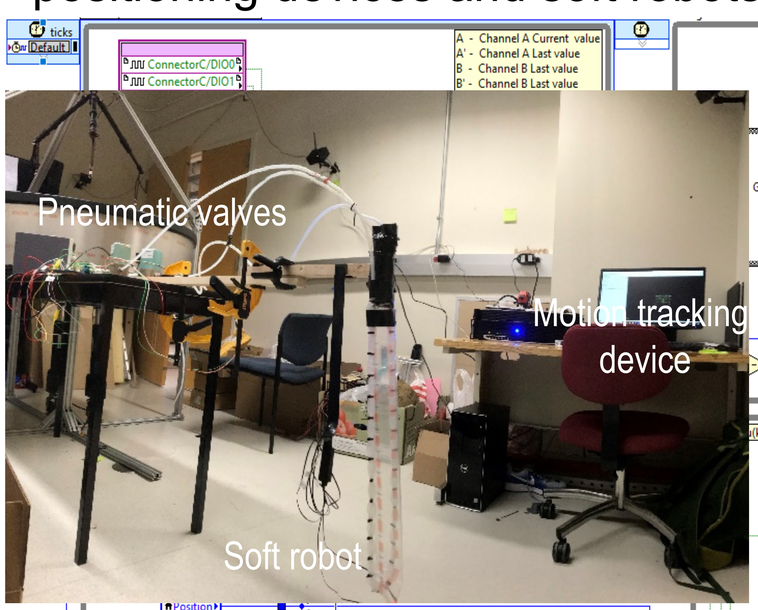
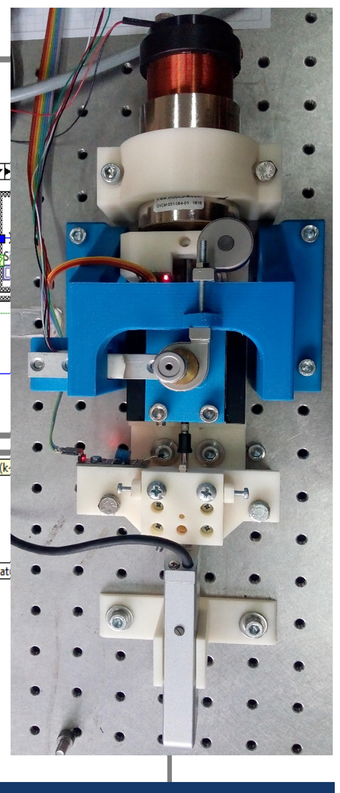
We are an **interdisciplinary team of** researchers that collaborates with academic and industrial partners in Croatia and abroad. Our **students** are involved in all our projects and research activities.

Mechatronics systems

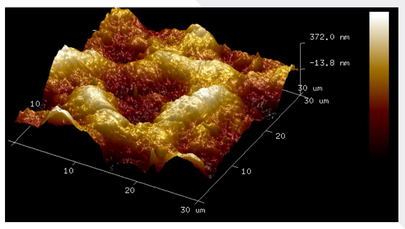
- Development, simulation, modelling and experimental characterization of integrated ultra-high precision positioning devices and soft robots

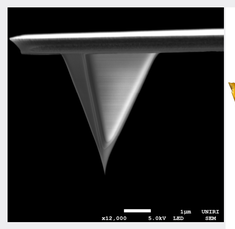


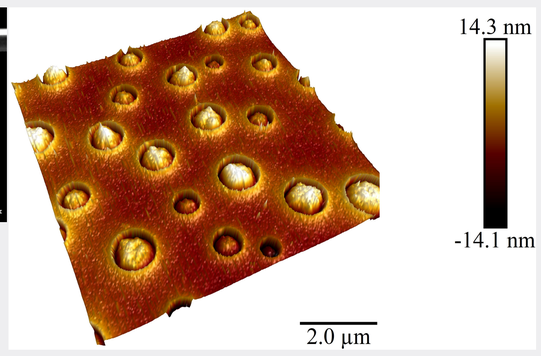


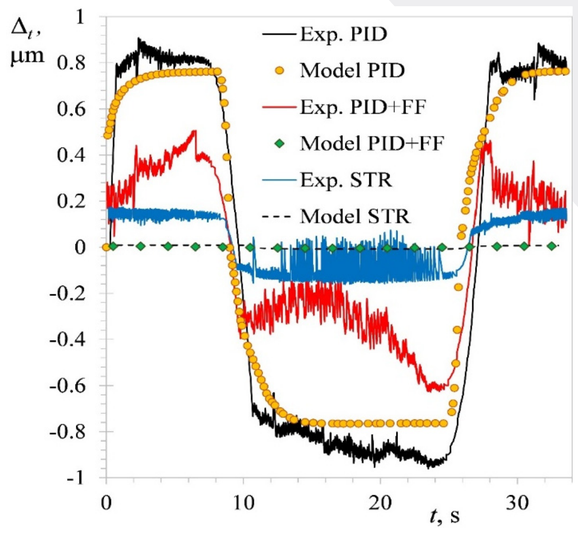
Tribology and nanotribology

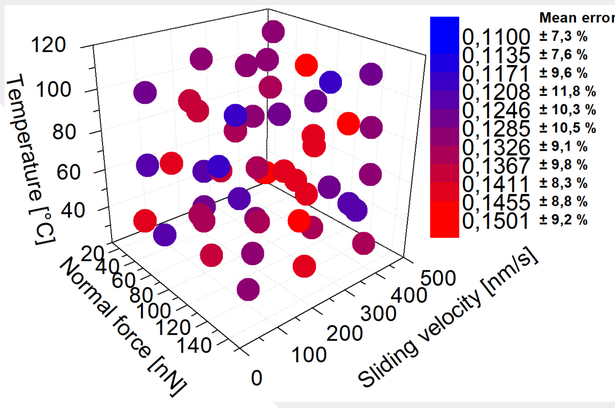
- Characterization, modelling and compensation of friction in the macro-, micro- and nanodomains





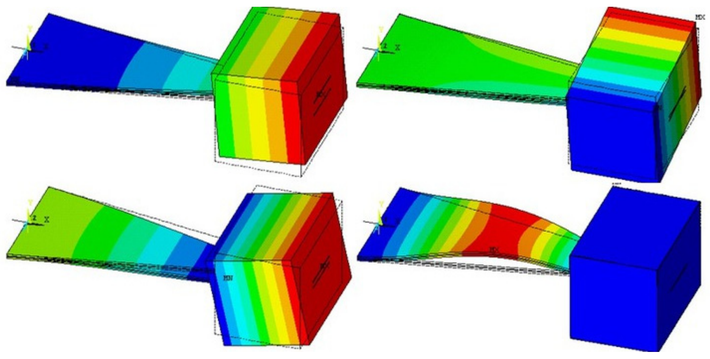


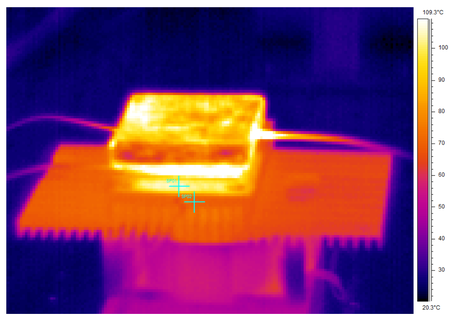


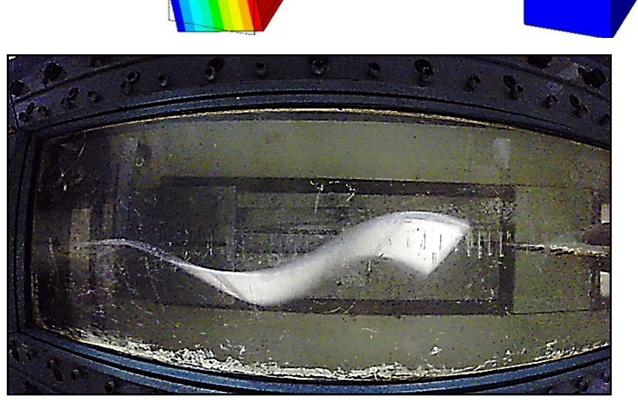


Energy harvesting

- Energy harvesting systems for low-power mechatronics and wearable devices



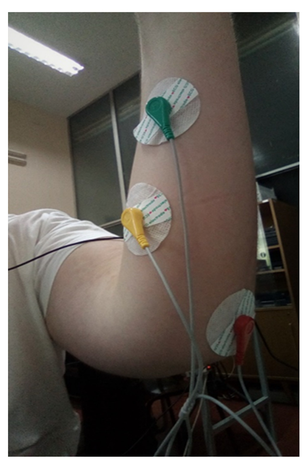


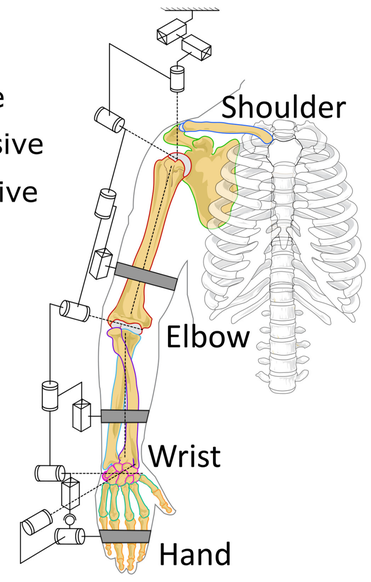


Rehabilitation devices

- Active device for the rehabilitation of patients with limited functionality of upper limbs

r_A - revolute active
p_P - prismatic passive
s_P - spherical passive





Developments through synergistic projects

- EU COST Action CA18203 “Optimizing Design for Inspection” – energy harvesting for monitoring devices of damage in airplane components
- Croatian-Slovenian bilateral project of scientific and technological cooperation – Tribological material characterisation from the nanometric to the macrometric domain
- Fulbright grant of E. Kamenar @ UC Santa Barbara – Modeling and tracking control of pneumatic soft robots by using Koopman operator methods
- InterReg project Nano-region
- Industrial collaboration with Croatian company „Končar D&ST” – experimental validation of vibrations of power transformers