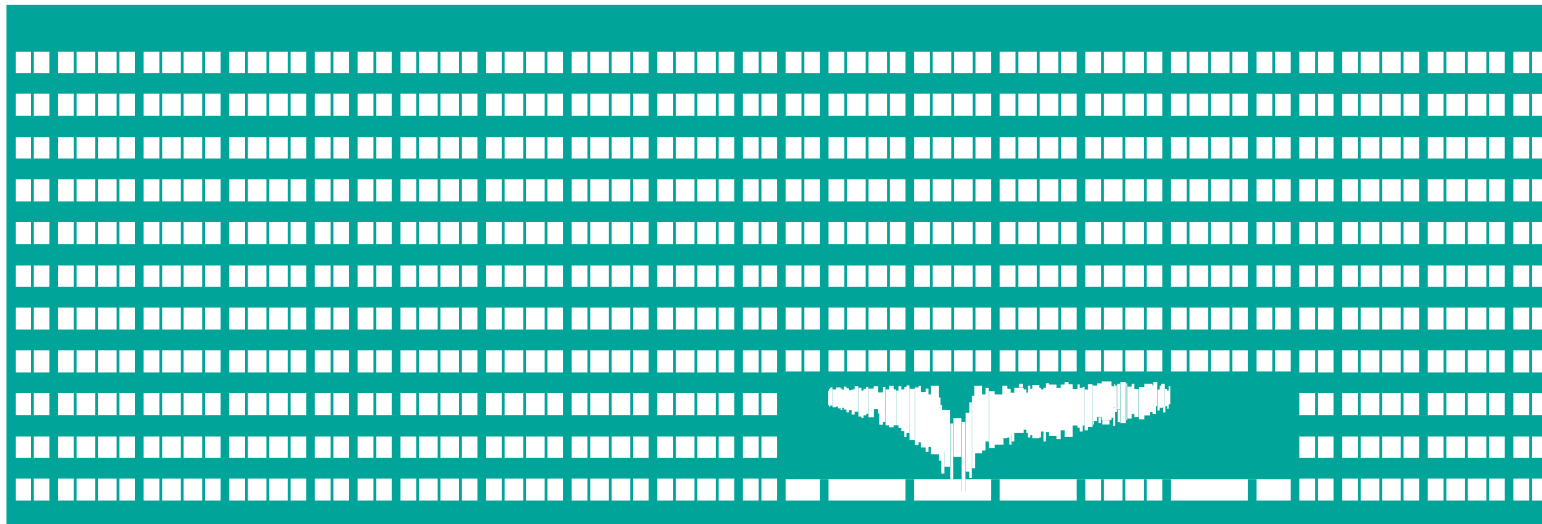


VŠB TECHNICKÁ  
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From Ostrava to space.  
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## CONREX

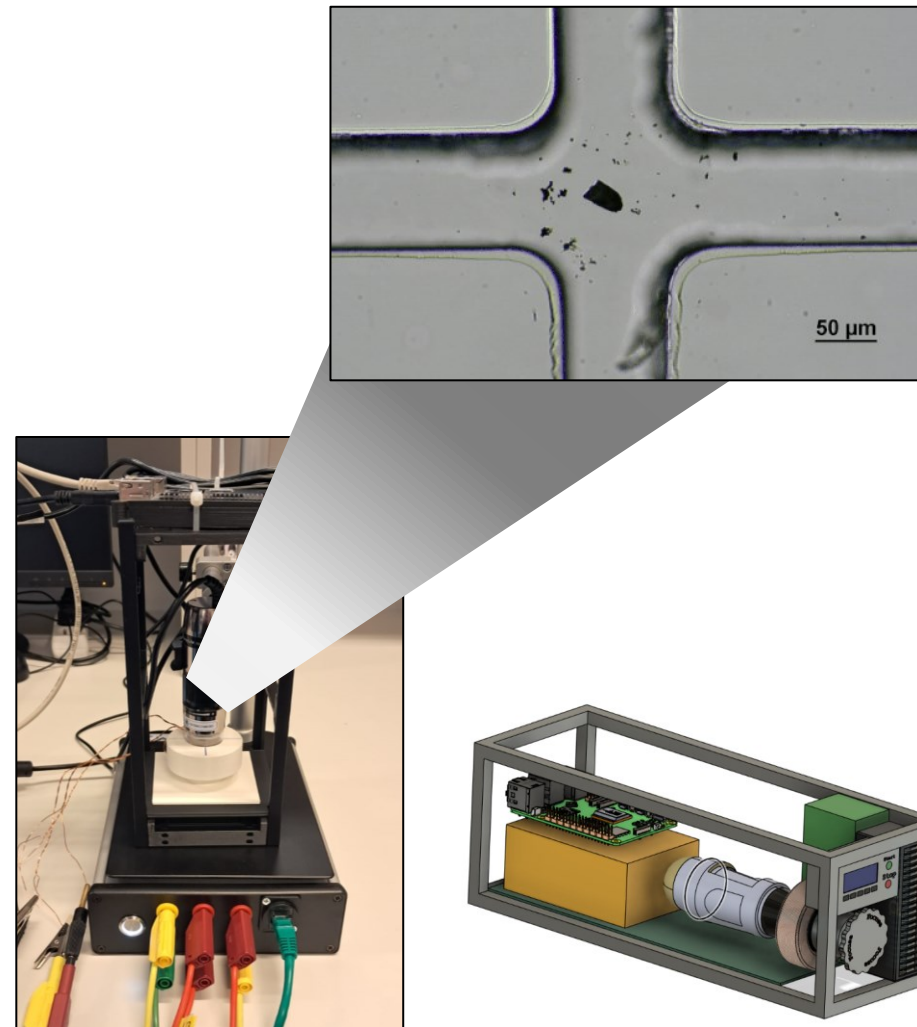
- The world's first experiment to control nanorobots in space
- First biofilm cleaning by nanorobots in space (ISS)
- The experiment is part of the Czech journey to space
- Launch planned for mid-2027
- Cooperation with TRL Space



## From a large system to space!



Lab-Scale System



Satellite-Scale Compact System

# First prototype and engineering model of CONREX



# ISS T-shirt

- Smart T-shirt for real-time measurement of crew stress using unique mathematical algorithm (**SEL – stress entropic load**)
- Integrating sensors for **core/skin temperature, HRV, VO<sub>2</sub>, ambient conditions**
- **Why in space:** on-orbit validation of sensing fundamental changes in thermoregulation and cardiovascular responses is essential
- **Impact:** safer missions + applicability in sports, healthcare, emergency services or industry
- Launch planned for mid-2027

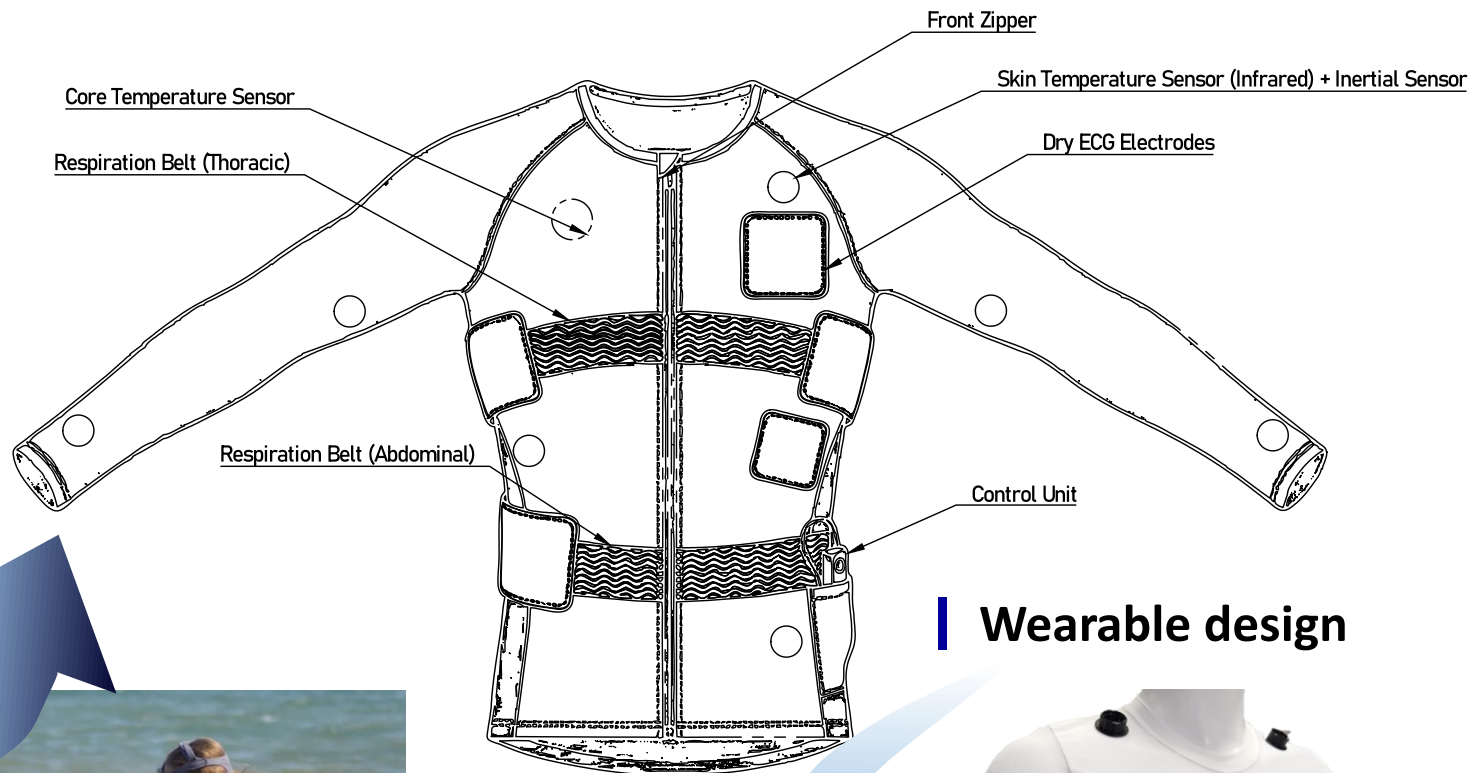


# ISS T-shirt

## First prototype development



Analogue testing



## Wearable design



Shirt prototyping



## CEVROSat II

- Radiation measurement by HardPix Radiation Spectrometer in cooperation with UTEF ČVUT
- Measurement of radiation effects on electronics
- Measurement of magnetic field
- Launch planned for mid-2027



# What we offer

- Multidisciplinary expertise across a wide range of scientific fields.  
Strong focus on:
  - ✓ Artificial Intelligence, optimization, edge computing
  - ✓ Radiation measurement, radiation effects
  - ✓ IoT technologies, sensors
  - ✓ Image processing, signal processing
- Well-equipped research infrastructure and measurement facilities

# What we are looking for

- Data, signal, and image processing challenges where we can extract new insights
- Real-world industry challenges and practical use cases where academic expertise can help develop new solutions
- Collaboration with companies, universities, and research partners
- Joint projects in space-related research and technology
- Space-related data for analysis and interpretation

**Thank you for your attention.  
The sky is no longer limit!**

**prof. Ing. Radek Martinek, Ph.D.**

**Ing. David Vala, Ph.D.**

**doc. Ing. Carlos Granja, Ph.D.**

**Ing. Martina Ládrová, Ph.D.**

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