



VSB TECHNICAL
UNIVERSITY
OF OSTRAVA

in cooperation with
Fraunhofer

FRAUNHOFER INNOVATION PLATFORM FOR **APPLIED ARTIFICIAL INTELLIGENCE**
FOR **MATERIALS & MANUFACTURING** AT VSB – TECHNICAL UNIVERSITY OF OSTRAVA

OUR PARTNERSHIP

The Fraunhofer Innovation Platform for Applied Artificial Intelligence for Materials & Manufacturing at VSB – Technical University of Ostrava (FIP-AI@VSB-TUO) has been pushing boundaries since 2021, uniting the cutting-edge expertise and advanced research infrastructure of VSB-TUO, Fraunhofer IWU and Fraunhofer ICT. As the first platform of its kind in the Czech Republic, it focuses on developing sustainable industrial production, with each partner contributing their expertise, while fostering stronger connections with partners from the application sector.

OUR APPROACH



*Cutting-edge
applied research*



*Technology
transfer to
industry*



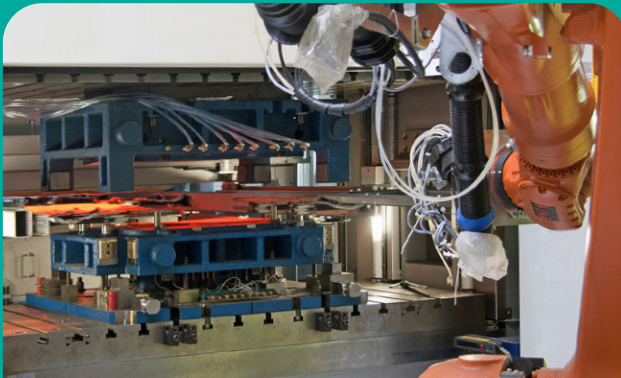
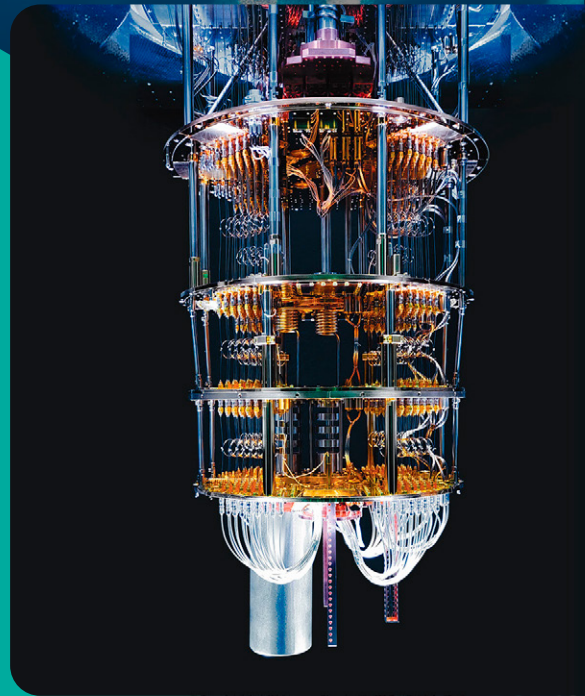
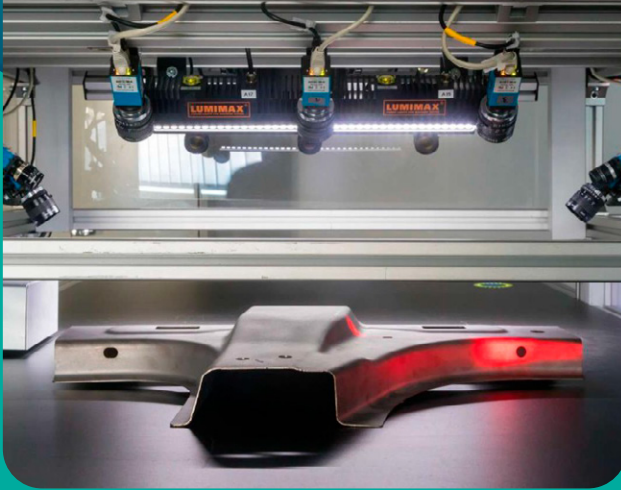
*Bridging academia
& industry*



*Industry-led
research projects*



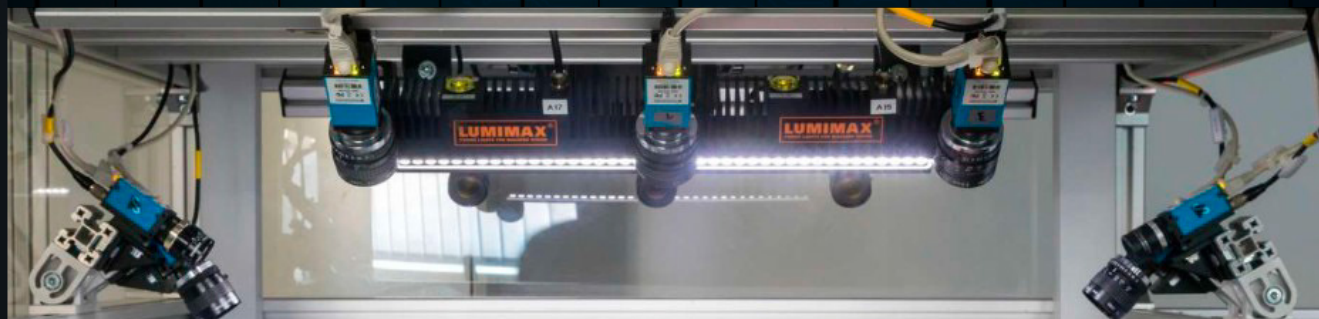
*Commercialising
breakthrough
research*



OUR EXPERTISE

KAROLINA

Leading in AI, quantum computing and next-generation technologies
Engineering and energy solutions



Driving innovations in production technology
Advancing sustainable, resource-efficient manufacturing



Expertise in energy storage, polymers, and chemical processes
Scalable and sustainable materials solutions

OUR STRENGTH

Interdisciplinary, application-oriented solutions in:



Advanced production

Energy systems

AI, High-Performance Computing, Quantum Computing

Networking & joint project opportunities:



International collaboration

Direct order processing with
non-disclosure agreements

Expertise from leading research institutions:



Entire industrial value chain coverage

Fast and technically excellent solutions

One contact point to cooperate with all three
FIP research partners

OUR SOLUTIONS FOR YOUR SUCCESS

Materials & Processing

Incremental sheet metal forming: Components up to 4000x2000x1000 mm and sheet thicknesses up to 5 mm (aluminium), complete production of parts, assemblies, and component design, including tool, process and machine design/construction and delivery incl. CE.

Applied AI in forming processes: Simulation, development of CAM software, process chain design, sensor integration, and data-driven process optimisation.

Machine learning for materials & components: Predictive modelling of material properties and operational behaviour, including the development of digital twins.

Sustainable Energy

Thermal energy storage: Development of PCM & TCM materials for heat storage, efficient building-integrated solutions, and heat exchanger manufacturing.

Gas separation & carbon capture: Adsorption equilibria characterisation, new measurement techniques, and process optimisation for carbon capture.



Batteries, electrolyzers, fuel cells: Production of bipolar plates for electrolyzers and fuel cells using advanced forming methods such as hydroforming, roll-to-roll, and incremental sheet metal forming.

Polymer Engineering

Material development: Optimisation of innovative polymers for specific applications.

Process & product development: Efficient manufacturing processes and collaborative design of polymer products, including sustainability-focused research on recyclability and bio-based solutions.



STAY CONNECTED



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