

Korea-EU Horizon Europe Researchers Networking Forum on Energy & Advanced Mobility

Sanna Uusitalo

**Research Funding
Specialist**

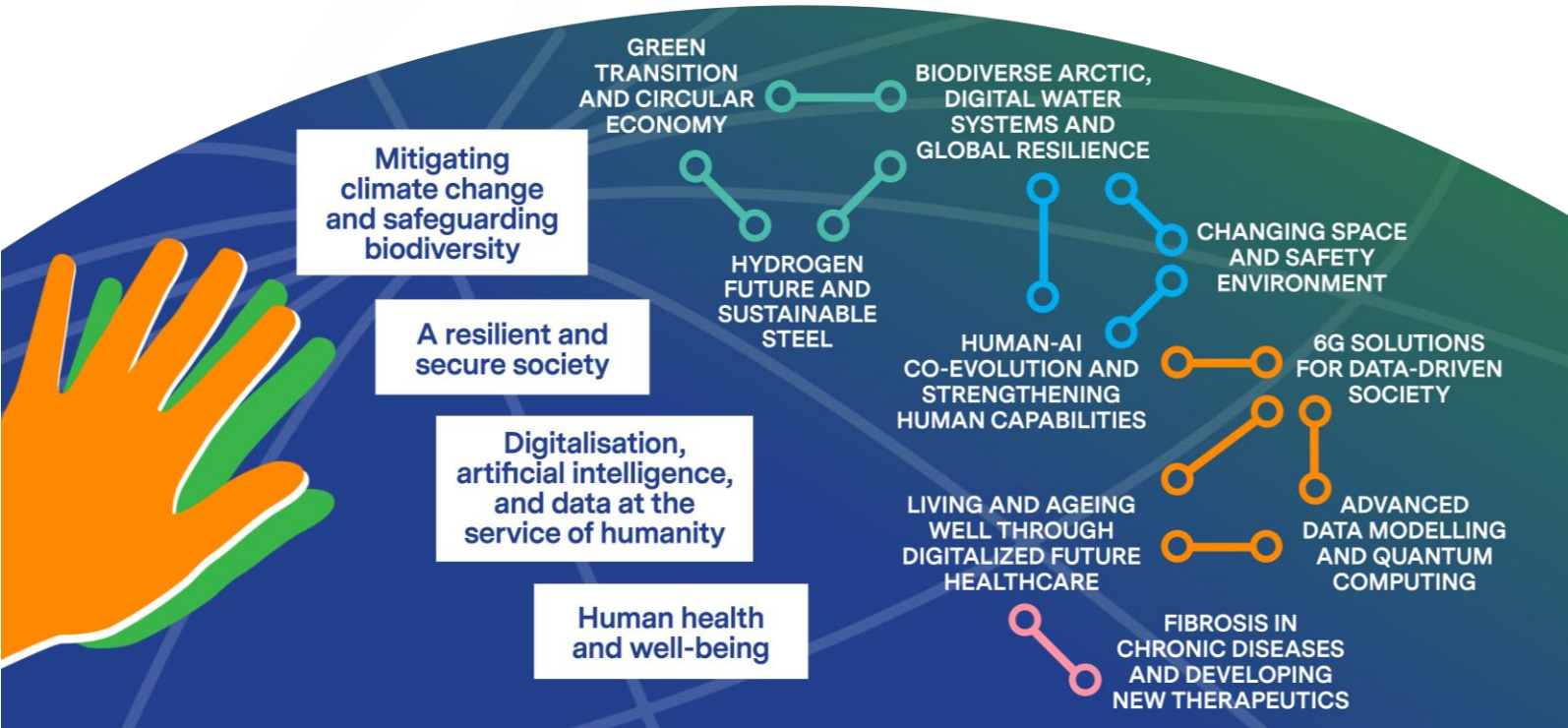
**University of Oulu,
Finland**

**Research and
Project Support**

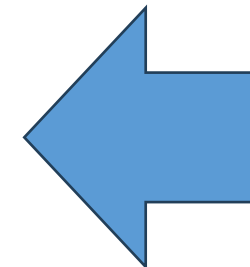


1. The University of Oulu in brief

WORLD QS World University Rankings: **342**
RANKING: ARWU Academic Ranking of World Universities (Shanghai): **401-500**



14 381 **4 059** **65 000+**
Students Staff Alumni





2. Expertise gaining Pillar II funding

Research impact at European level

The University of Oulu has been very successful in obtaining research and innovation funding from the European Union.

Horizon Europe

82 M €

funding

130+

projects funded

Number 1

University in
Finland (Pillar II)

3. Our experts: Prof. Kurvinen and Prof. Könnö

- **Emil Kurvinen (Professor, Machine Design)**
University of Oulu
emil.kurvinen@oulu.fi
+358505695969, [Google scholar](#), [Webpage](#)
- **Juho Könnö (Professor, Vehicle and Mobile Machinery Engineer)**
University of Oulu
juho.konno@oulu.fi
+358503435385, [Google Scholar](#), [Webpage](#)

Research interest (Prof. Könnö)

- **Powertrain Engineering**: Including hybrid and zero-carbon technologies
- **Model-Based Systems Engineering (MBSE)**
- **Simulation Governance**: High-fidelity simulations for product development
- **Vehicle Dynamics and Measurements**
- **Smart Controls for Powertrain Optimization**
- **Sustainable and digital transformation of mobile machinery**

Calls of interest:

HORIZON-CL5-2026-10-D2-03: Integrated Production and Product Development for Next-Gen Lithium-based **Batteries for Mobility** (BATT4EU and Made in Europe Partnerships)

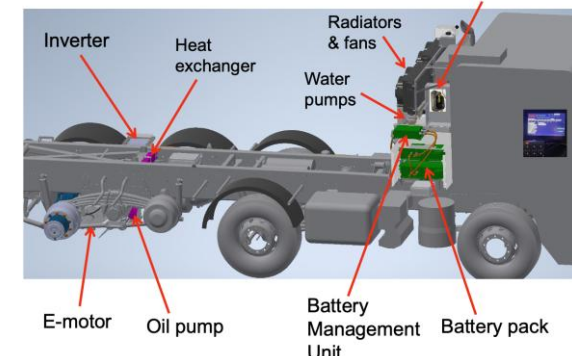
HORIZON-CL5-2026-05-D5-02: Energy-efficient **software-defined EVs** (ZZERO Partnership)

HORIZON-CL5-2026-05-D5-01: Large-scale demonstration of **Heavy-Duty Battery Electric Vehicles (HD BEV)** towards long-haul logistics operations (ZZERO Partnership)

HORIZON-CL5-2026-05-D5-07: AI-assisted **digital aircraft design**, manufacturing and MRO, towards a competitive aviation

Research interest (Prof. Kurvinen)

- **Rotating machines**, especially high-speed designs
- **Digital twins** and simulation-based design
- **Multibody system dynamics**, real-time simulation
- **Model Based System Engineering (MBSE)**
- **Integration of industrial engineering and management into technology**
- **Multidisciplinary machine design**





3. Our experts: Ass. Prof. Ella Peltonen

**Ella Peltonen (Assistant Professor,
Software Engineering)**

University of Oulu

ella.peltonen@oulu.fi

+3585068565, [Google scholar](#), [Webpage](#)

Research interest

- Software-defined vehicles
- Sensor API, data stream management, and sensing capabilities
- Vehicle-edge-cloud continuum
- Applied ML/AI methods for vehicles, IoT, and cyberphysical systems
- Security and safety in cyberphysical systems

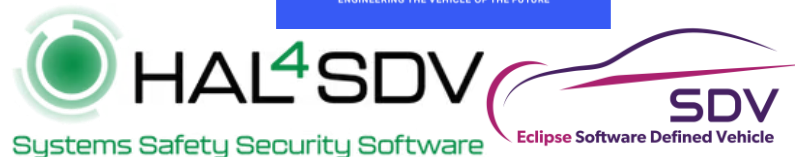
Calls of interest:

- **HORIZON-CL5-2026-01-D6-05:** Approaches, verification and training for **Edge-AI building blocks** for **CCAM** Systems
- **HORIZON-CL5-2026-01-D6-04:** Integration of **human driving behaviour** in the validation of **CCAM** systems
- **HORIZON-CL5-2026-01-D6-06:** Federated **CCAM** data exchange platform
- **HORIZON-CL5-2026-01-D6-14:** Predicting and avoiding **road crashes** based on **Artificial Intelligence (AI)** and **big data**

Other 2026-2027 calls with similar topics



Ongoing partnerships in:



4. Our experts: Prof. Rauno Heikkilä

Professor

Rauno Heikkilä

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+358405385840, [Webpage](#)

Research interest

- Automation and autonomous machine fleets, from teleoperation to AI-directed operations
- Space robotics for construction and assembly in extreme environments
- BIM and MIM for digitalized construction and lifecycle management
- Automation and robotics for roads, railways, bridges, buildings, and mining

Calls of interest:

- AI-enabled **robotics for construction**
- Autonomy in **space construction**

Selected ongoing projects:

- Autonomous Low-Emission **Swarm of Infrastructure Construction Machinery**, to t 5 MEUR
- AI4MACHINERY, budget **9MEUR**



The Smart Excavator in
5G Private Network



Ouluzone test area
200 hectares



The Smart Roller



The Smart Truck



The Smart Dozer

5. Our experts: Prof. Ulla Lassi

Professor / Sustainable chemistry

Ulla Lassi

Tandem Industry Academy professor 2023-2025

ulla.lassi@oulu.fi

+358400294090, [Research profile](#)

Calls of interest:

- All **battery related calls**, such as
HORIZON-CL5-2026-09-D2-01
HORIZON-CL5-2027-02-D2-05
HORIZON-CL5-2026-03-D2-02



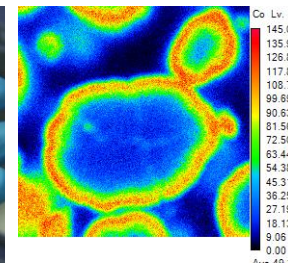
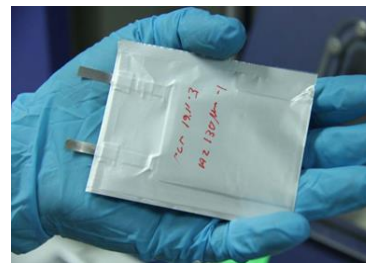
Research interests:

- Electrode materials for next-generation batteries
- Coprecipitation of novel materials (precursors/cathodes) from primary/secondary material flows
- Recovery of valuables from battery recycling streams
- Advanced (electrochemical) characterization



Selected ongoing projects on batteries:

- [SAFELOOP](#)/Horizon Europe, 2024-2027 (Coordinator)
- [STREAMS](#)/ Horizon Europe 20225-2027 (Partner)
- [SPRINT](#)/Horizon Europe 2024-2026 (Partner)
- **In2Bat** /Research Council Finland, 2024-2028
- **GENSIB**, Research Council Finland, 2025-2028
- **BATCircle3.0**, Business Finland, 2024-2027





5. Contact Details

RESEARCH and PROJECT SERVICES

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SOFTWARE ENGINEERING

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MACHINE DESIGN and ENGINEERING

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Juho Könnö (Professor, Vehicle and Mobile
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DIGITALIZED CONSTRUCTION AND MINING OPERATIONS

Professor

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SUSTAINABLE CHEMISTRY

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