



QRC-4-ESP



**QUANTUM RESERVOIR COMPUTING FOR
EFFICIENT SIGNAL PROCESSING**

QRC-4-ESP IS A PROJECT FUNDED UNDER THE HORIZON EUROPE PROGRAMME OF THE EUROPEAN UNION.

The project's main goal is to develop the first quantum reservoir computing systems utilizing superconducting qubits and silicon carbide defect qubits. This innovative approach is expected to significantly outperform existing classical machine learning systems in terms of speed and energy efficiency, with potential improvements of more than a hundredfold.

3 YEARS: 1 January 2024 - 31 December 2026

CONSORTIUM: 7 partners

GRANT AGREEMENT ID: 101129663

EU CONTRIBUTION: € 2 522 411

ABOUT PROJECT

European
Innovation
Council



PARTNERS

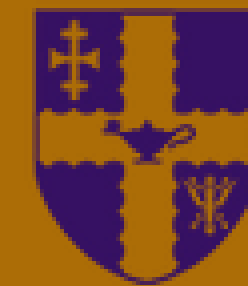
**A TEAM OF WORLD-CLASS EXPERTS WITH
COMPLEMENTARY EXPERTISE TO SET NEW
STANDARDS IN QUANTUM TECHNOLOGY**





Leibniz Institute of Photonic Technology.

Loughborough University.



Loughborough
University



UNIVERSITÉ DE
MONTPELLIER

University of Montpellier

Linköping University.



Aalto University

Aalto University.



Eötvös Loránd University.

Intelligentsia Consultants SARL



GROUNDBREAKING RESEARCH

New disruptive QRC-4-ESP technology based on superconducting qubits and silicon carbide (SiC) defect qubits will create drastic improvements in speed and reduction in power consumption – two or more orders of magnitude (>100X) - compared to classical machine learning systems.

Superconducting qubits

- Strategic Choice for Satellite Communications
- Operate effectively in Microwave Range
- Minimally Disturbed by Atmospheric Conditions

Defect-based Qubits in SiC

- Ideal for Fibre-optical Networks
- Operate in Near-infrared Frequency Bands
- Enable Long-range Communications & Medical Diagnostics



CONTACTS

PROJECT COORDINATOR

Leibniz-Institut für Photonische Technologien

Dr. Gregor Oelsner

gregor.oelsner@leibniz-ipht.de

<https://www.qrc-4-esp.eu/>