

**TWINNING PROJECT EXANST - JOINT EUROPEAN CONTRIBUTION
ADVANCING MATERIALS SCIENCE IN COOPERATION OF UNIVERSITY OF
TARTU, MAX IV LAB, FZ JÜLICH AND IMPERIAL COLLEGE**

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Recently launched twinning project EXANST, “Increasing Excellence in Utilizing X-ray Research and Neutron Scattering Techniques at the University of Tartu (UTARTU)”, is aimed for further raising the research profile of UTARTU in the field of materials science, by enabling researchers from UTARTU to take full advantage of the best European large-scale facilities for materials’ characterization. In particular, the ambition of this EXANST project is to increase local expertise at UTARTU and in Estonia in the X-ray research techniques and neutron scattering techniques that are available at leading European synchrotrons and neutron facilities. Another important target of the project is to enhance expertise at UTARTU in the complementary computational methods that are used for materials’ modelling, and analyzing the data generated in advanced X-ray and neutron experiments.

In order to achieve these objectives, UTARTU teams up with three advanced partners: MAX IV Lab (Sweden), an advanced partner in synchrotron science, Forschungszentrum Jülich (FZJ, Germany), an advanced partner in neutron science, and Imperial College London (ICL, UK), an advanced partner in materials’ modelling. Besides the research-orientated endeavours, the advanced partners also provide guidance to UTARTU on research management, strengthening co-operation between different institutes within UTARTU and with industry, tackling gender and diversity issues, contributing to early-stage researcher professional development and their international networking. Joint pilot research projects address the following topics: (i) solid-electrolyte-interfaces formed in energy storage devices based on ionic liquids, (ii) photoactive proteins that can serve as optical switches or tuneable fluorescence markers, and (iii) scintillator materials for radiation detection devices. The pilot projects will give researchers from UTARTU an opportunity to gain first-hand experience in specific X-ray and neutron methods and modelling techniques. EXANST will contribute to the growth of research community using synchrotron and neutron radiation in academia, at industrial partners and technology developers in Estonia.