



esteem3

European network for electron microscopy

ESTEEM3 – European Network for Electron Microscopy

ESTEEM3 – Enabling Science and Technology through European Electron Microscopy – is an H2020 Integrating Activity project for electron microscopy, which aims at **providing access to the leading European state-of-the-art electron microscopy research infrastructures**, facilitating and extending transnational access services of the most powerful atomic scale characterization techniques in advanced electron microscopy research to a wide range of academic and industrial research communities for the analysis and engineering of **novel materials in physical, chemical and biological sciences**.

The ESTEEM3 objective is to deliver more access to more users coming from a wider range of disciplines. Transnational Access (TA) to ESTEEM3 centres is obtained through a **transparent, simple peer review process** based on merit and scientific priorities. Optimum service to users is supported by Networking Activities (NA) and Joint Research Activities (JRA), which address key issues such as specimen preparation, data interpretation, treatment and automation through theory and simulation, and standardization of protocols and methodologies.

Innovative activities dedicated to the dissemination of expertise, education and training in cutting-edge quantitative transmission electron microscopy (TEM) techniques, such as **schools, advanced workshops and webinars**, are offered to the European electron microscopy users from academia, research institutes and industry.

Directed research programs involving the academic and industrial partners of the consortium focus on the further **methodology development in imaging and diffraction, spectroscopy, in-situ techniques and metrology, and on advancing applied research of materials related to ICT, energy, health, and transport** for the benefit of European scientists and industry. Moreover, the definition of strategic roadmaps and open access data policies aims to ensure the long-term sustainability of the consortium. In all, ESTEEM3 establishes a strategic leadership in electron microscopy to guide future developments and promote electron microscopy to the widest research community at large.



In 2012, the ESTEEM2 project (2012 – 2016) started within the 7th Framework Program of the European Commission and was supported as the follow-up to the previous ESTEEM

Integrated Infrastructure Initiative (2006 – 2011) within the 6th Framework Program of the European Commission. These two successive ESTEEM and ESTEEM2 integrating initiatives in advanced electron microscopy for physical sciences brought together, in a sustainable network, the leading European Laboratories equipped with the most advanced TEM installations offering the best expertise in all different TEM fields.

This advanced consortium is now established as ESTEEM3, the primary European portal for industrial and academic scientists who need access to latest generation TEM instrumentation and methodology. This is offered along with the cutting-edge TEM expertise for solving complex materials problems in various fields of science such as physics, materials science, engineering, chemistry or even life sciences and earth sciences. ESTEEM3 includes five high-end SMEs that can directly transform academic innovation into products or services.

The project coordinator of the Horizon H2020-INFRAIA-2018-2020 project ESTEEM3 and the

intermediary between the consortium and the European Commission is Prof. Dr. Peter A. van Aken, head of the Stuttgart Center for Electron Microscopy (StEM) at the Max Planck Institute for Solid State Research in Stuttgart, Germany, Professor at the Department of Materials and Geosciences of the Technische Universität Darmstadt, Germany, and Honorary Professor at the Nelson Mandela University, Port Elizabeth, South Africa.



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