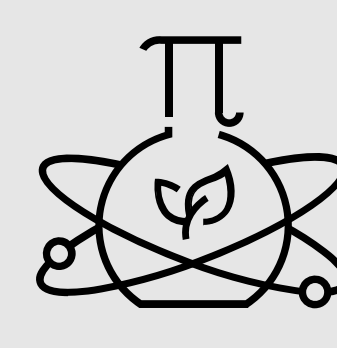


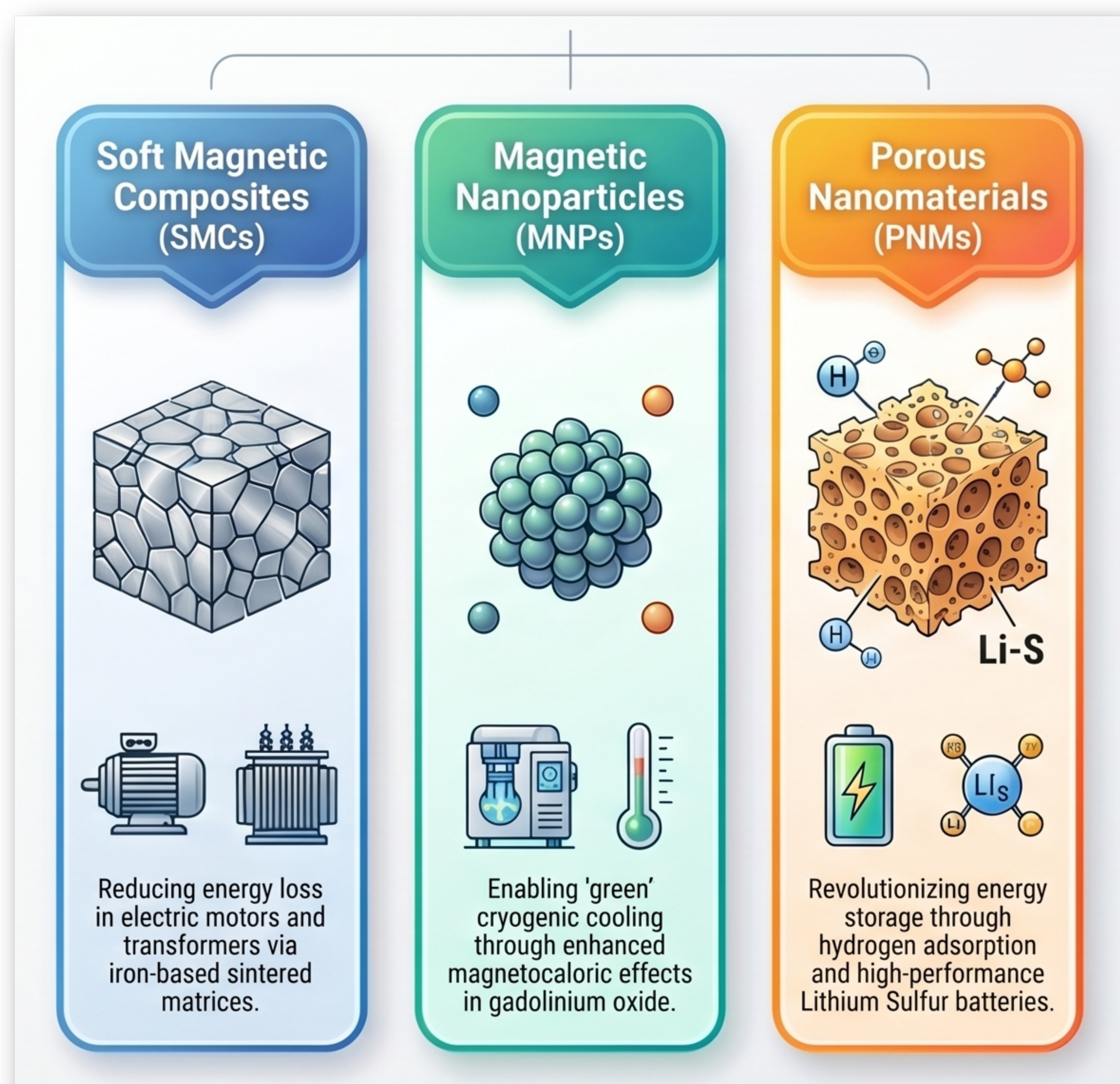


MASSPRAM

Multimodal Approach to Study Structure-Property Relationships in Advanced Materials

09103-03-V03-00034

Focus on the three key material classes



The **MASS-PRAM project** is a major scientific initiative led by Pavol Jozef Šafárik University in Košice to advance the development of advanced materials for sustainable energy solutions.

The research focuses on three key material classes:

- Soft Magnetic Composites,**
- Magnetic Nanoparticles,**
- Porous Nanomaterials**

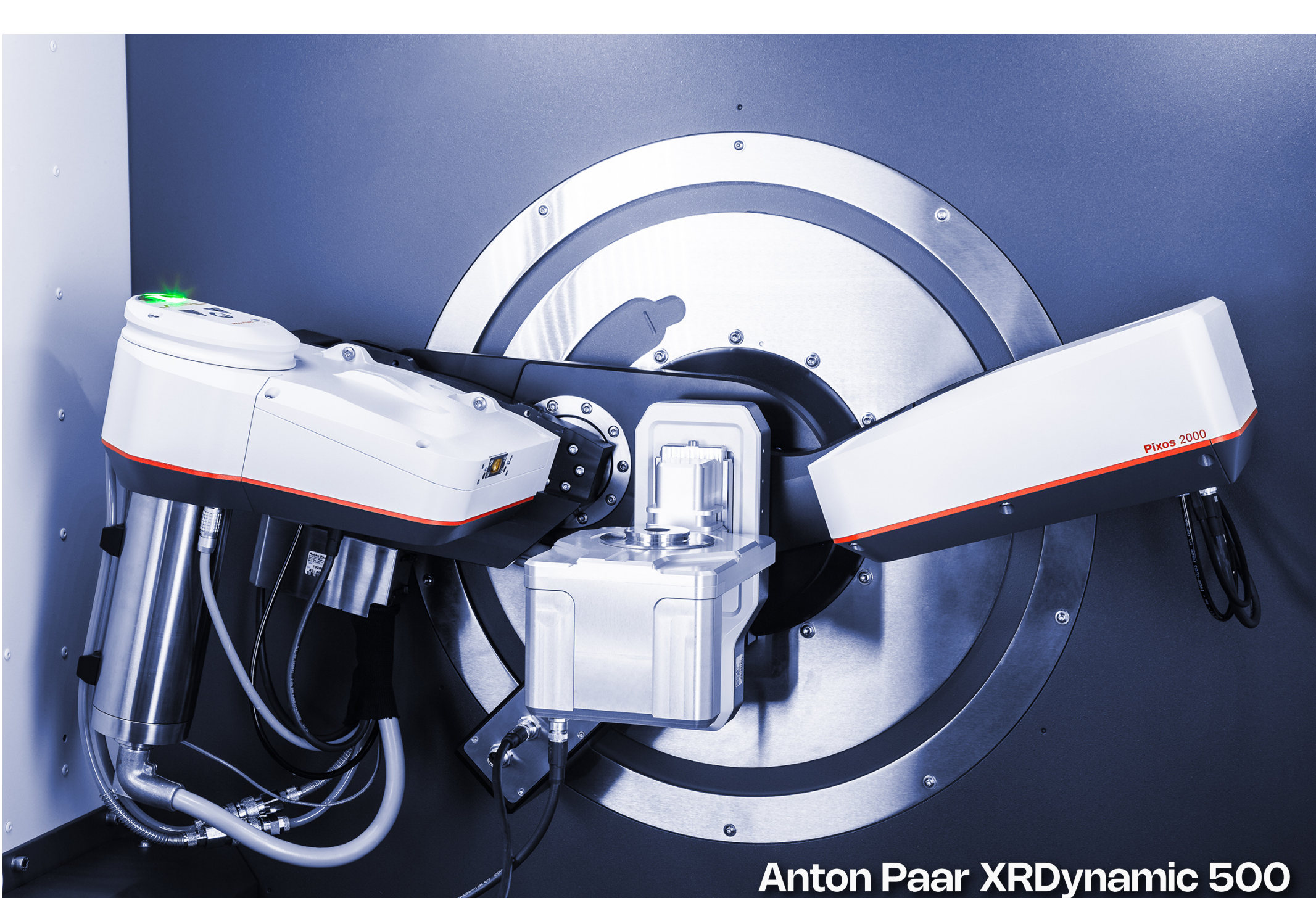
for applications associated with efficient energy generation, transfer and storage.

To achieve these goals, the project employs a **multimodal structural analysis** approach, combining synchrotron-level X-ray techniques and electron microscopy to understand how atomic structures influence physical properties.

Bringing synchrotron technologies to laboratory



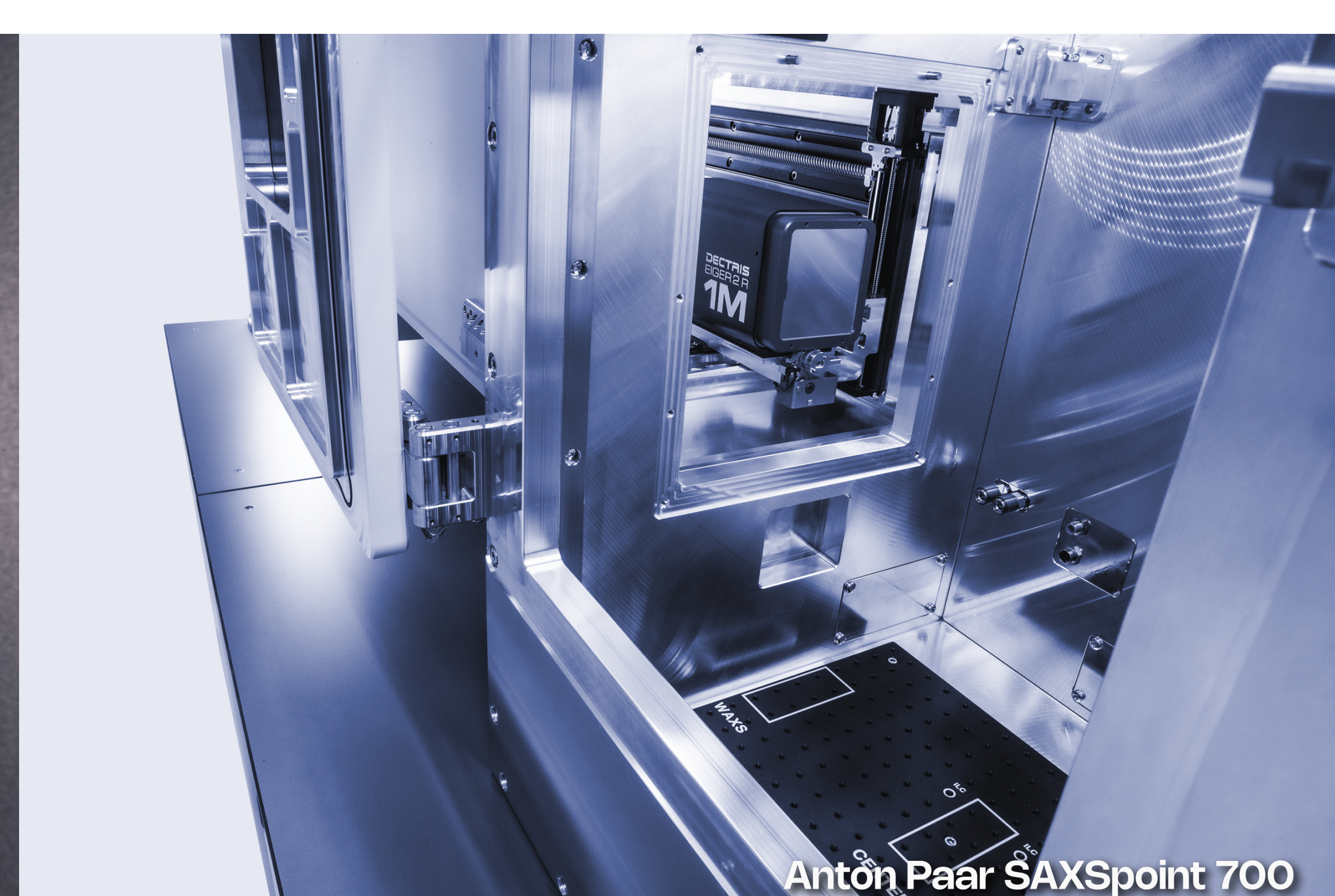
State-of-the-art analytical instrumentation



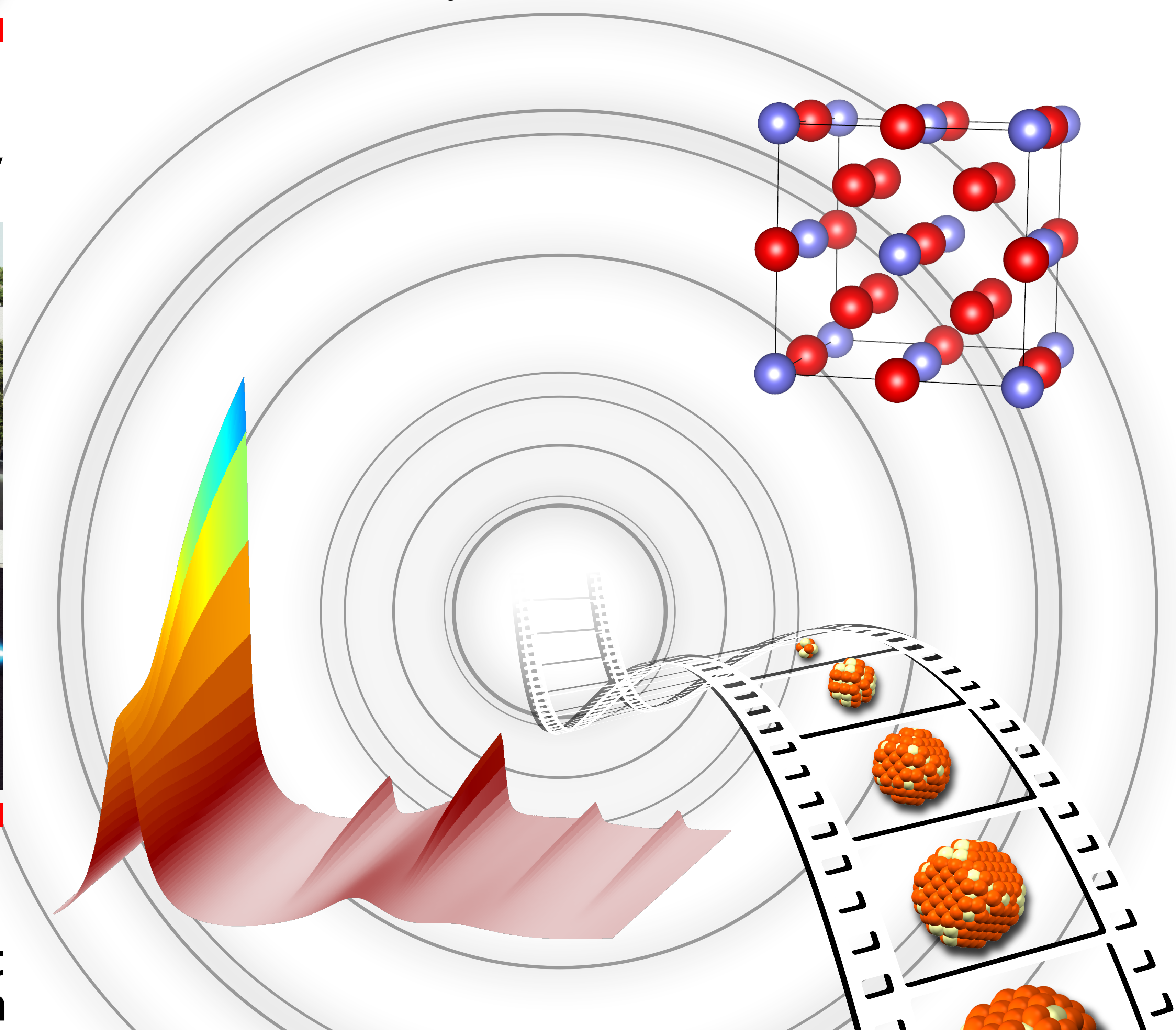
Anton Paar XRDynamic 500



HP-Spectroscopy EXAFS



Anton Paar SAXSpoint 700



A significant outcome of this project is the establishment of the **Košice School for Structural Analysis**, a new competence center designed to bridge the gap between academic research and industrial application in Slovakia.

By acquiring **state-of-the-art** analytical instrumentation, the university aims to foster **international collaboration** and train the next generation of researchers in **cutting-edge materials science**.

Ultimately, the project seeks to drive **technological innovation** and **economic growth** while addressing global challenges such as efficient **energy transfer/storage** and resource scarcity.

Platform for establishing the Košice School of Structure Analysis

