UIP25-Univie - High-Throughput SXRD für Cryst@VIE

Abstract

Crystallography and its traditionally interdisciplinary research applications have become indispensable for understanding the structure of materials at the atomic level in the material-related fields of chemistry, physics, and biology. Its successfully applied analytical tools are now essential, for example, in molecular medicine, the development of new pharmaceutical compounds, and the targeted development of innovative high-tech materials. Time and again, Nobel Prizes have been awarded for work in crystallography, as was the case with the two most recent Nobel Prizes in Chemistry in 2024 and 2025. Historically, Vienna has always been one of the leading centers of successful crystallographic research. To further expand this leading role, the University of Vienna and the Vienna University of Technology are jointly planning the cross-university innovation hub “Cryst@VIE.” State-of-the-art instruments will be installed at three locations, with complementary applications. At the University of Vienna, a novel high-throughput X-ray diffractometer is to be acquired for measuring crystalline samples, with a measurement capacity approaching the throughput of a large-scale synchrotron research facility. In addition to a high-performance X-ray source and an optimized detector, a robotic system with a camera for automated sample mounting will be the central component of the instrument, enabling a 10- to 50-fold increase in sample throughput. This infrastructure will thus not only meet the ever-growing quantitative demands for high-quality measurements at the two universities themselves, but also support the transdisciplinary research established within Vienna. In this context, Vienna’s status as a hub for international pharmaceutical companies is worth highlighting, as are its connections in the field of heritage sciences to the art academies, the Federal Monuments Office, and the museums in the Vienna area.

Principal Investigator:

Institution:

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Further links to the persons involved and to the project can be found under
https://www.wwtf.at/funding/programmes/uip/UIP25-Univie/