



# Development and implementation of cryo-electron microscopy at the National Institute of Chemistry, Slovenia

*Monday, July 3, 2023 2:40 PM (30 minutes)*

Integrated structural biology aims to provide high-resolution structural information about biological molecules and their complexes in isolated form or in biological context based on data obtained by various experimental and theoretical methods. This helps to understand biological processes and enables drug and vaccine discovery and other applications in biotechnology. For atomic resolution approaches, X-ray crystallography has long been the gold standard, but the immense power of cryo-electron microscopy (cryo-EM) has recently contributed increasingly to the field, providing detailed structural information on many complex (biological) macromolecular systems. Recent dramatic scientific achievements have been based on the use and continuous development of high-end structural biology infrastructure, which is large both in terms of its physical size and cost. The latter could be a major disadvantage for smaller but ambitious scientific communities. In my talk, I will describe our path to establishing a cryo-EM facility at the National Institute of Chemistry, the first in Slovenia and in the region. I will describe how we combine it with other methodological approaches and show some concrete examples from our research projects. Our cryo-EM facility has been continuously active since its opening in November 2019 to answer Slovenian and foreign academic or industrial research questions and, importantly, also to train new generations of cryo-EM scientists.

**Presenter:** PODOBNIK, Marjetka (NIC, Ljubljana)

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