



## SINGLE CRYSTAL X-RAY DIFFRACTION

# APEX4 for Synchrotrons



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"IMDEA Nanociencia is a non-profit research organization with a focus on research, technological development, and innovation in the field of Nanoscience, Nanotechnology and Molecular Design. The development of metal-based coordination materials at the macro- and nanoscopic scale for energy transformation and storage, spintronic and sensing devices is in the focus of [my group](#) on Switchable NanoMaterials (SNM). Recently, we started to develop dynamic crystalline molecules which by soft interactions are capable of acting as porous materials. Within our research we often introduce complex molecular rearrangements into the samples exposing our crystals to external disturbances, such as gases or temperature changes.

A large fraction of our samples is investigated at beamline XALOC at ALBA where a variety of X-ray detectors, delivering various data formats, are installed. For the data processing, structure solution, refinement, and investigation we found the APEX4 software suite extremely helpful. APEX4 offers great engines to follow these changes on the structural level and particularly the visualization tools help us to better understand the processes involved. APEX4 can cope very well with the various frame formats we receive from the beam line. The package is very intuitive and therefore easy to learn. The clear structure of the APEX4 software suite makes it easy to use and APEX4 is a significant push for our capabilities to process challenging single crystal data."