SINGLE CRYSTAL X-RAY DIFFRACTION

High Data Quality and Fast Data Collection - Busy Times for Our Crystallography Group

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"Overall, the D8 QUEST GX has made a significant positive impact on our research workflow and user experience."

The installation of our new D8 QUEST GX has marked a new era in our research center. The new diffractometer is equipped with an IμS DIAMOND II source for Mo-Kα radiation. We have chosen Mo-radiation for its well-known and proven experimental versatility. Albeit it is a floor standing instrument with full experimental flexibility it requires only a small footprint, is fully air-cooled and runs with just single-phase power. Installation of the new instrument, including an Oxford Cryostream 1000 low temperature device, was accomplished in just a few days.

The hybrid diamond technology in our new X-ray source delivers better than rotating-anode-level intensity but with virtually no maintenance. We are impressed by the large area PHOTON IV detector, which perfectly matches the high intensity X-ray source. Even for our typically thin micro-crystals, we obtain high-quality datasets in just 15–20 minutes.

The auto-centering routine coming with the goniometer exceeds our expectations, with precise centering even for very small, tiny crystals and consistently delivering data refinement with R factors as low as 3–4%. As a result, we are seeing a surge in user interest, drawn by the machine's combination of high data quality and rapid collection speeds.

The APEX software proves excellent, especially when processing twinned crystals; its application makes a real difference. As an example, it allowed us to resolve a large cell problem, that was actually a twin of a smaller cell rotated by approximately 179 degrees.

A big thank-you to Bruker for the excellent training and the support they provide us with. In total, these enhanced capabilities of the system have opened up exciting new opportunities for time-resolved studies, fast phase transitions, and pioneering work in quantum crystallography. The high data quality and fast data collection attract a lot of users - our crystallography group is having busy times now.

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