Poster

Exploring new features in sub-micron crystal structure analysis with the XtaLAB Synergy-ED

E. Götz[1], K.-N. Truong[1], C.R. Göb[1], C.J. Schürmann[1], J.M. Wojciechowski[1], P. Stec[2], M. Jasnowski[2], G. Prochniak[2], M. Idzi[2], H. Puschmann[3], O. Dolomanov[3], F. White[1,4], J.D. Ferrara[5], M. Meyer[2], R. Bücker[1,4]

[1]Rigaku Europe SE, Neu-Isenburg, Germany, [2]Rigaku Polska, Wroclaw, Poland, [3]OlexSys, Durham, UK, [4]Rigaku Corporation, Tokyo, Japan, [5]Rigaku Americas Corporation, The Woodlands, USA

Emilia.goetz@rigaku.com

Three-dimensional microcrystal electron diffraction (3D ED/MicroED) has become a powerful technique for unravelling complex structures of sub-micron crystals. As the first dedicated, commercially available electron diffractometer, Rigaku's XtaLAB Synergy-ED stands at the forefront of nanometer-scale crystallography, offering an accessible platform for structure determination [1]. With its user-friendly interface and seamless operation through CrysAlis^{Pro}, it caters to a diverse community of crystallographers, removing the hurdle of transmission electron microscopy expertise. Recent developments have focused on simplifying electron diffraction akin to X-ray techniques, facilitating a smooth transition for novice users [2].

Constantly evolving, this presentation will focus on the latest features from a user's perspective, such as automatic z centering, merging capabilities and cluster analysis tools. Additionally, it will demonstrate queueing for diffraction quality assessment, polymorph screening and full dataset acquisition. By harnessing these innovative features, researchers can streamline experimental workflows and enhance data quality, unlocking new insights into the structural properties of sub-micron crystals with unprecedented speed and efficiency.

[1] Ito, S., White, F. J., Okunishi, E:, Aoyama, Y., Yamano, A., Sato, H., Ferrara, J. D., Jasnowskie, M., Meyer, M. (2021). *CrystEngComm*, **23**, 8622.

[2] Truong, K.-N., Ito, S:, Wojciechowski, J. M., Göb C. R., Schürmann, C. J., Yamano, A., Del Campo, M., Okunishi, E., Aoyama, Y., Mihira, T. (2023). *Symmetry,* **15**, 1555.