



Volume 14, No. 8, August 2022

WELCOME

I am excited to report that the 72nd ACA Annual Meeting held in Portland, OR from July 29 to August 3 was a great success. This was the first time the ACA has met in person since July 2019. The ACA organization has weathered COVID exceptionally well, as evidenced by an increase in the number of members and nearly the same number of attendees (in-person and virtual) as in 2019.

Rigaku had two booth spaces, one filled with a dual-source XtaLAB Synergy-S and the second with a mockup of the XtaLAB Synergy-ED and live demonstrations of the instrument from Tokyo. We had a great mixer on Sunday, July 31 with a DJ and a picture booth. People were having such a good time, we had trouble shutting it down.



About the only negative to the meeting was that a couple of us caught mild cases of COVID. This was inevitable.

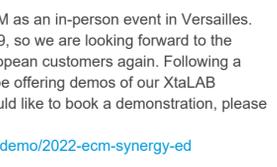
We'll be at the European Crystallographic Meeting and the International Conference on Coordination Chemistry at the end of August. We will be scheduling live demonstrations of the XtaLAB Synergy-ED from Tokyo (see below for more information). Lastly, I'd like to point out that we will have a **Users' Meeting** in Frankfurt on October 10-11. There is limited space for the event. Please check our website for more information.

Be safe,

Joe Ferrara

UPCOMING EVENTS

Rigaku at the ECM33

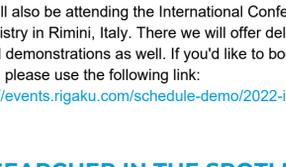


This year sees the return of the ECM as an in-person event in Versailles. The last ECM was in Vienna in 2019, so we are looking forward to the opportunity to connect with our European customers again. Following a successful run at the ACA, we will be offering demos of our XtaLAB Synergy-ED at booth #9. If you would like to book a demonstration, please use the following link:

<https://events.rigaku.com/schedule-demo/2022-ecm-synergy-ed>

Demos will take place at the booth with a live link up to the last approximately 30 minutes, and give you insight into the operation and capabilities of the instrument. Due to the live link crossing multiple time zones, demonstrations will only be offered during the mornings.

Rigaku at the ICCG



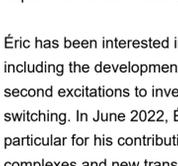
August 28th 2022 - September 2nd 2022

We will also be attending the International Conference on Coordination Chemistry in Rimini, Italy. There we offer delegates the opportunity to attend demonstrations as well. If you'd like to book a demonstration at the ICCG, please use the following link:

<https://events.rigaku.com/schedule-demo/2022-iccg-synergy-ed>

RESEARCHER IN THE SPOTLIGHT

Professor **Éric Collet**, Institute of Physics of Rennes

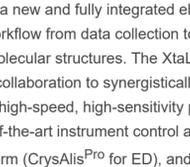


Prof. Éric Collet is an interdisciplinary researcher working within the material science, chemistry and physics fields centering around crystallography. He began his career at the University of Rennes in 1996 with his research doctorate in physics, after which he accepted a post-doctoral position at the French Alternative Energies and Atomic Energy Commission. Currently, Éric is Professor of Physics and head of department at the Institute of Physics of Rennes.

Éric has been interested in and contributed to many research topics, including the development of free electron lasers and the study of femto-second excitations to investigate phase transitions and molecular switching. In June 2022, Éric was awarded the Alajos Kálmán Prize, in particular for his contributions to the structural study of molecular complexes and new transition mechanisms, especially from the molecular to the crystal scale. The Alajos Kálmán Prize was established by the Hungarian Chemical Society and is endorsed by the European Crystallographic Society. Please join us in congratulating Éric on his fantastic achievement.

PRODUCT IN THE SPOTLIGHT

XtaLAB Synergy-ED



XtaLAB Synergy-ED is a new and fully integrated electron diffractometer, creating a seamless workflow from data collection to structure determination of three-dimensional molecular structures. The XtaLAB Synergy-ED is the result of an innovative collaboration to synergistically combine our core technologies: Rigaku's high-speed, high-sensitivity photon-counting detector (HyPix-ED) and state-of-the-art instrument control and single crystal analysis software platform (CrysAlis^{Pro} for ED), and JEOL's long-term expertise and market leadership in designing and producing transmission electron microscopes. The key feature of this product is that it provides researchers an integrated platform enabling easy access to electron crystallography. The XtaLAB Synergy-ED is a system any X-ray crystallographer will find intuitive to operate without having to become an expert in electron microscopy.

The XtaLAB Synergy-ED was designed to address the increasing need to investigate smaller and smaller samples in structural research. With X-ray crystallography, the smallest possible crystal dimension is 1 micron, and only then when utilizing the brightest X-ray sources and noise free detectors. However, in recent years, there has been an increasing need for the structure analysis of substances that only form microcrystals, crystals that are only a few hundred nanometers or less in size. In recent years, a new analytical method, MicroED, has been developed that uses electron diffraction on a TEM electron microscope to measure 3D molecular structures from nanocrystalline materials. Researchers developing this technique have relied on customized electron microscopes and a combination of microscopy software for measuring diffraction data, and public domain X-ray crystallography software for data processing and structure determination. Switching a microscope configuration between imaging and diffraction can be time-consuming, making the sharing of an instrument sometimes difficult.

To address these issues, Rigaku and JEOL started a collaboration to develop a dedicated single crystal structure analysis platform for nanocrystals utilizing key technologies from both companies. The result is the XtaLAB Synergy-ED, a dedicated electron diffractometer that is operated by the same control software that is used to run Rigaku's X-ray diffractometers and includes a complete integrated pipeline from sample selection and diffraction measurement to data processing and structure solution. This instrument can easily be installed in an existing X-ray crystallography facility, where researchers and students will be able to easily master the MicroED technique since the software workflow is the same as for an X-ray diffractometer. Having such an instrument installed in an X-ray facility immediately provides structure determination for materials that only form nanocrystals.

BOOK REVIEW



The Everything Guide to Remote Work: The Ultimate Resource for Remote Employees, Hybrid Workers, and Digital Nomads

By Jill Duffy

ISBN: 9781507217863

Jill Duffy's *The Everything Guide to Remote Work: The Ultimate Resource for Remote Employees, Hybrid Workers, and Digital Nomads* is a helpful tool for anyone who works remotely or wishes too. The cover declares that *The Everything Guide to Remote Work* will provide readers with a step-by-step guide to: (1) working and thriving in a digital environment; (2) avoiding distractions and optimizing productivity; (3) maintaining a work-life balance; (4) mastering the art of digital communication; and (5) continuing growth as an employee. As anyone who has ever worked remotely, whether by choice or necessity, can likely attest, these are all critical facets of a successful remote work lifestyle.

The guide starts out broadly, defining remote work for those who may not be familiar with the concept, and explaining the different types of remote work environments. Then Duffy delves into advice for those seeking a remote position that currently do not have one or may not have had one before. The advice in this section is sound and, honestly, relevant even for those who may be job hunting for in-person work in the current pandemic climate. Many companies, especially large corporations, conduct the earliest rounds of interviewing remotely anyway.

The subsequent chapters dig into the daily details of remote work: how to craft a remote workspace that cultivates creativity and productivity; how to communicate effectively across various channels with remote colleagues; proper etiquette for video and audio calls; how to collaborate effectively with remote colleagues; how to rethink the approach to meetings in a remote work environment; how to maintain productivity and avoid distractions while also keeping your sanity; how to establish a sustainable work-life balance; how to ensure professional growth as a full remote employee; how to master a hybrid model of working, where sometimes you work remotely and sometimes you are in an office; how to become a digital nomad and work remotely from anywhere in the world; how to actively participate in company culture as a remote employee; and lastly, how to prepare for the future of remote working.

Duffy's guide is well-written for anyone and everyone, regardless of experience or exposure to remote working. For those who are struggling with it amidst the cultural transition catalyzed by the coronavirus pandemic, this book might help you continue to adjust successfully. And for those who envy friends and family with fully remote positions, this book should help provide some deeper insights into the highs and lows of such a role and help you decide if you want to pursue one and, if yes, how to do so successfully.

Review by Jeanette S. Ferrara, MFA

RIGAKU TOPIQ WEBINARS

Rigaku has developed a series of 20-30 minute webinars that cover a broad range of topics in the fields of X-ray diffraction, X-ray fluorescence and X-ray imaging. You can register [here](#) and also watch recordings if you cannot attend live sessions.

VISIT US AT:

33rd European Crystallographic Meeting, Versailles, France, August 23-27.

44th International Conference on Coordination Chemistry, Rimini, Italy, August 28-September 2.

8th International Conference on Metal-Organic Frameworks and Open Framework Compounds, Dresden, Germany, September 4-7.

Japan Analytical & Scientific Instruments Show (JASIS), Chiba, Japan, September 7-9.

The Pittsburgh Diffraction Conference, Lemont, IL, October 2-4.

73rd Southeastern Regional ACS Meeting (SERMACS 2022), San Juan, Puerto Rico, October 19-22.

CRYSTALLOGRAPHY IN THE NEWS

August 11, 2022:

Researchers from Japan have synthesized and characterized **perfluorocubane** showing the radical anion keeps the unpaired electron in the cage.

August 11, 2022:

The University of Stockholm group has published a study on the **use of 3DED to locate organic guest molecules in framework materials**.

August 12, 2022:

DeepMind has released a **database** of 200,000,000 predicted protein structures covering millions of species.

August 15, 2022:

A group at UCLA has published a comprehensive **review on electron diffraction of 3D crystals**.

USEFUL LINKS

Here links to organizations helping Ukrainians survive the ongoing war in their homeland:

- [Help Humanitarian Efforts in Ukraine](#)
- [Donate to Children of Ukraine](#)
- [Nova Ukraine](#)
- [Razom for Ukraine](#)
- [World Central Kitchen](#)
- [Global Giving](#)
- [International Committee of the Red Cross](#)

Here is a link to an interview with Jennifer Doudna by New York Times reporter David Marchese.

JOIN US ON LINKEDIN

Our [LinkedIn group](#) shares information and fosters discussion about X-ray crystallography and SAXS topics. Connect with other research groups and receive updates on how they use these techniques in their own laboratories. You can also catch up on the latest newsletter or *Rigaku Journal* issue. We also hope that you will share information about your own research and laboratory groups.

[JOIN HERE](#)

RIGAKU X-RAY FORUM

At rigakuxrayforum.com you can find discussions about software, general crystallography issues and more. It's also the place to download the latest version of Rigaku Oxford Diffraction's CrysAlis^{Pro} software for single crystal data processing.

[JOIN HERE](#)

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