Contribution ID: **75** Type: **not specified**

3D Imaging of Advanced Materials using Soft X-ray Laminography at PolLux

Tuesday, 29 October 2019 16:40 (20 minutes)

The 3D imaging techniques based on hard X-ray radiation like computed tomography (CT) are commonly used to reveal the inner structure of sophisticated materials and complex objects. Although hard X-ray CT was invented more than 45 years ago[1], the use of soft X-rays in 3D imaging is still an exception so far[2], even though soft X-ray radiation involve some advantages in terms of chemical sensitivity and contrast properties[3-6].
We will present the new Soft X-ray Laminography (SoXL) setup implemented at the PolLux beamline going from 2D scanning transmission X-ray microscopy (STXM) to 3D imaging. In addition to a detailed introduction to the new setup, examples of already successful SoXL experiments from various research fields will also be shown. The realization of SoXL at PolLux is based on the fruitful collaboration of different research groups from SLS and their experience concerning 3D imaging. The emphasis of this presentation will be to advertise SoXL to a broader community within PSI and to reach potential users for futures projects.

---

[1] E. C. McCullough, J. T. Payne, Medical Physics 4, 1977
[2] G. McDermott et al., Trends Cell Biol. 19, 2009
[3] G. Schütz et al., Phys. Rev. Let. 85, 1987
[4] J. Stöhr, J. Electr. Spec. Rel. Phenom. 75, 1995
[5] C. Donnelly et al., PRB 94, 2016
[6] B. Watts et al., Synthetic Metals 161, 2012

Position

Postdoc

Primary author: WITTE, Katharina (Laboratory for Synchrotron Radiation –Condensed Matter, PSI)

Co-authors: SPÄTH, Andreas (Department of Chemistry and Pharmacy, Friedrich-Alexander Universität Erlangen-Nürnberg, Erlangen, Germany); FINIZIO, Simone (Laboratory for Synchrotron Radiation –Condensed Matter, PSI); DONNELLY, Claire (Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom); ODSTRCIL, Michal (Carl Zeiss SMT GmbH, Oberkochen, Germany); GUIZAR SICAIROS, Manuel (Laboratory for Macromolecules and Bioimaging, PSI); HOLLER, Mirko (Laboratory for Macromolecules and Bioimaging, PSI); WATTS, Benjamin (Laboratory for Synchrotron Radiation –Condensed Matter, PSI); FINK, Rainer (Department of Chemistry and Pharmacy, Friedrich-Alexander Universität Erlangen-Nürnberg, Erlangen, Germany); RAABE, Jörg (Laboratory for Synchrotron Radiation –Condensed Matter, PSI)

Presenter: WITTE, Katharina (Laboratory for Synchrotron Radiation –Condensed Matter, PSI)

Session Classification: Contributed talks

Track Classification: Oral presentation