



Seminar Series: Latest Breakthroughs in Biomedical Engineering Research

Location: DBE Science Lounge, Hegenheimermattweg 167C, 4123 Allschwil Date & Time: Thursday 15.05.2025 | 16:30 – 17:30 Host: Prof. Bert Müller

Synchrotron X-ray phase-contrast imaging: Opportunities in Biomedical

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Abstract

Synchrotron X-ray phase-contrast imaging (X-PCI) has established itself as a versatile and powerful tool with applications across multiple scientific disciplines. Recent advancements in absorption and propagation-based synchrotron X-ray phase-contrast tomography (PB X-PCI) have enabled unprecedented access to high spatial and temporal resolution. This technique is renowned for providing detailed 3D imaging, with the distinct advantages of being non-destructive, requiring minimal sample preparation, and offering real-time tracking capabilities. As interest grows in studying hierarchical materials, particularly in the biomedical field, it is essential to observe samples across various length and temporal scales. This presentation will highlight several research projects, primarily within the biomedical domain, and explore the potential impacts of the SLS 2.0 upgrade on future developments.

Biosketch

Dr. Anne Bonnin is a Beamline Scientist at the TOMCAT Beamline (SLS, PSI, Switzerland), who specialized in synchrotron X-ray imaging. After receiving her PhD in Physics from INSA Lyon (France) in 2009, she worked at the ESRF (Grenoble, France) before joining SLS in 2014, and became a Tenure Track Beamline Scientist in 2016. She is responsible for the TOMCAT nanoscope and leads several research projects, primarily in the biomedical field. Her work focuses on developing imaging methods that combine structural and functional information in biological systems or dynamic materials, leveraging the ultra-fast acquisition and high-resolution capabilities of synchrotron X-ray phase-contrast microtomography.