SAT D: X-ray Ptychography Training Course

Time: Full-day
Date: Thursday, April 23
Course location: Building 401, Room E1100/1200
Organizers: Junjing Deng (APS) and Jeffrey A. Klug (APS)

Description: Ptychography is one of the coherent diffraction imaging (CDI) methods that is able to achieve high spatial resolution much higher than the illumination size. Using a scanning microscopy approach with overlapping scan spots, ptychography bypasses the isolated object requirement for conventional CDI so that it is able to image extended samples. Ptychography has quickly gained momentum as a powerful tool to deliver high-resolution images of samples in biology, material science, electronics, etc. As APS-U will provide more than 100-fold increase in coherent flux, we expect more and more existing and upgraded beamlines will utilize ptychography on their research. The goal of this training course is to introduce the basic principles of ptychography and experimental implementation, to summarize the evolution of the techniques and corresponding reconstruction algorithm development, and to highlight the potential application in the life and materials sciences.