



Contribution ID: 2

Type: Oral

Introduction to The Low-Dimensional Structure Probe at HEPS

Tuesday, 16 July 2024 12:20 (20 minutes)

With the advancing of large-scale integrated circuits, the sizes of element devices have shrunk to nanoscale. At this size scale, quantum effects emerge and dominate the performance of the low-dimension materials and devices. To study the low-dimension structures and their dynamics based on coherent surface x-ray scattering (SXRS), we are constructing the Low-Dimension Structure Probe (LoDiSP) beamline at High Energy Photon Source (HEPS). It uses an in-vacuum undulator as the photon source, and connect the Multi-Environment X-ray Scattering station (EH1) and the In-situ Coherent Surface X-ray Scattering station (EH2) in tandem. At EH1, a large-load 6+3-circle Huber diffractometer equipped with various sample environment setups provides various x-ray scattering/diffraction methods. At EH2, a "hybrid MBE+SXRS+RHEED+XPCS" integrated facility enables in-situ growth of samples in ultra-high vacuum chamber and coherent SXRS characterization. An evanescent waves modulator will be developed to artificially transform the growth mode of multi-element compound thin films and be combined with grazing incident x-ray photon correlation spectroscopy (GI-XPCS) to investigate the surface dynamics of thin films.

Please select the related topic from the list below

Instrumentation and methods

Primary author: WANG, Huan-hua (Institute of High Energy Physics, Chinese Academy of Sciences; University of Chinese Academy of Sciences)

Presenter: WANG, Huan-hua (Institute of High Energy Physics, Chinese Academy of Sciences; University of Chinese Academy of Sciences)

Session Classification: Instrumentation and methods II