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Unveiling Structural Evolution in Thin Films processing through in-situ spin-coating with GISAXS/GIWAXS

Monday, 16 October 2023 18:00 (20 minutes)

Advancements in nanotechnology have led to the development of thin films with unique properties, making them essential for various applications. Taiwan Light Source 23A beamline focuses on unraveling the intricate nanostructures within thin films through simultaneous grazing-incidence small/wide-angle X-ray scattering (GISAXS/GIWAXS) measurements, coupled with controlled heating and spin-coating and other techniques. These cutting-edge methods provide invaluable insights into the morphology, crystallinity, and orientation of nanostructures in thin films. GISAXS analysis elucidates the nanostructures, while GIWAXS offers a deeper understanding of the crystal features. By incorporating controlled spin-coating, we can observe the structural evo
lution of polymer blend thin films during film formation. Furthermore, through the application of controlled thermal processing, we achieve precise control for optimal structural configuration, thereby, enhancing the properties of the films. The combined utilization of these techniques enables a comprehensive characterization of thin film structure , contributing to the optimization of film fabrication processes and the enhancement of their functional performance in diverse applications, such as electronics, photonics, and sensors.

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Session Classification: Poster Session + Buffet Dinner (Wine & Cheese)