Effect of Interfacial Interaction on the Cross-Sectional Morphology of Tobacco Mosaic Virus using GISAXS

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Supporting Information



Fig. S1. Simulated GISAXS images for cylinders with various shapes of cross-sections, ellipsoid (a-f) and polygons (h-j). Polydisperse infinitely long cylinder is assumed. X-ray energy of 1.68Å. An incident angle is 0.1° . Polydispersity of the cross-section is 10%. R_{xy} , R_z , and H stands for semi-axes of an ellipsoid along the in-plane and z-axis (out-of-plane), and height.

Some cross sections [see Fig. S1(d, e, h)] produce the distinct features in the second lobes of form factor: the blob-like scattering as well as a strong in-plane scattering. As the contact angle at the interface (c and f) is lower than 90° , in-plane scattering gets weaker. On the contrary, as the contact angle higher than 90° , for example hexagon, octagon, and ellipsoids (a and b), the in-plane scattering is stronger without making "blob" like features. This is expected because that the scattering predominantly occurs normal to the surface: A round cross-section would make a round scattering pattern.