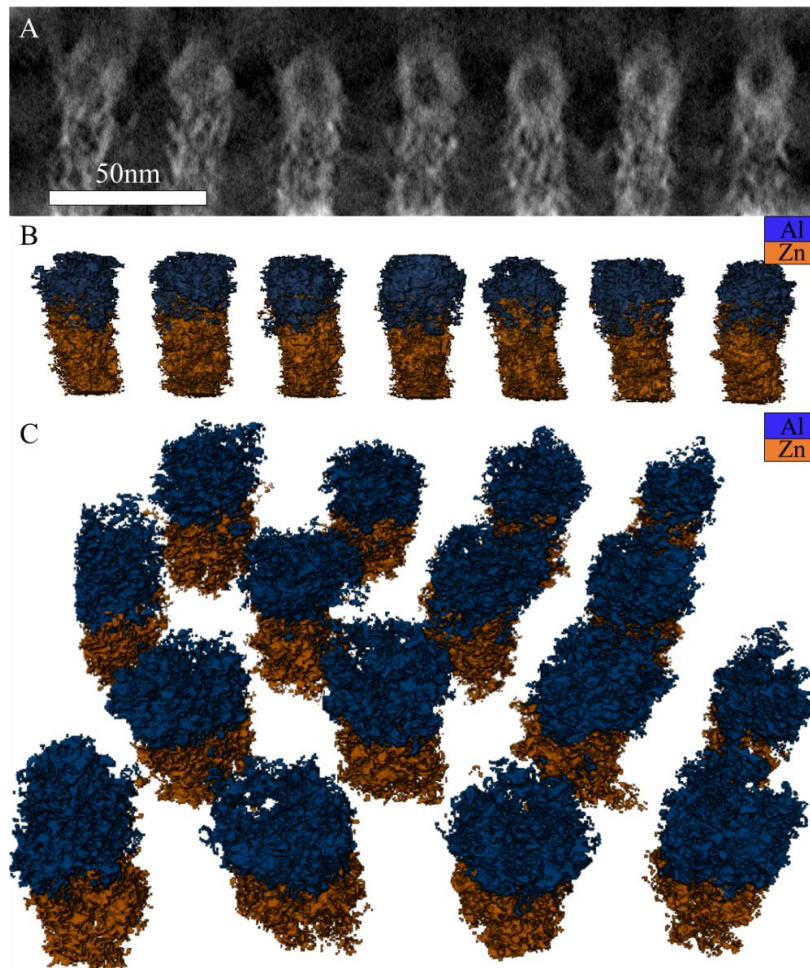


**Figure 1.** Schematic illustration of BCP-templated spatially-controlled SIS fabrication process.



**Figure 2.** 3D characterization of heterostructure nanorod array prepared via BCP-templated spatially-controlled SIS (A) cross-sectional view obtained from digitally slicing the HAADF-STEM tomography reconstructed volume, (B) cross sectional view obtained from visualization of the STEM-EDS tomography reconstructed volume, (C) perspective view of the STEM-EDS tomography reconstructed volume.