Keynote

Room temperature in-situ nanostructure synthesis using electron beam irradiation

Mark H. Rummeli

Sungkyunkwan Univ. & Center for Integrated Nanostructure Physics (IBS), South Korea

In this presentation the use of electron irradiation to grow 1D and 2D nanostructures will be presented. The fabrication of these nanostructures is accomplished by using the electrons used to image specimens in a transmission electron microscope. No specialized holders or systems are required making the technique relatively cheep and easy.

As examples of the technique I will demonstrate of electron irradiation can be used to form 1D coaxial B/BOx nanowires and BOx nanotubes. In addition, I will show how 1 atom thick Fe membranes can be formed and also the catalytic activity of a single atom for the growth of or etching of graphene can be accomplished. In addition the in-situ fabrication and structuring of graphene will be presented. The technique provides unprecedented insight in to nanostructure formation at the atomic scale.