

# Structure and Properties of Block Copolymer Based Materials

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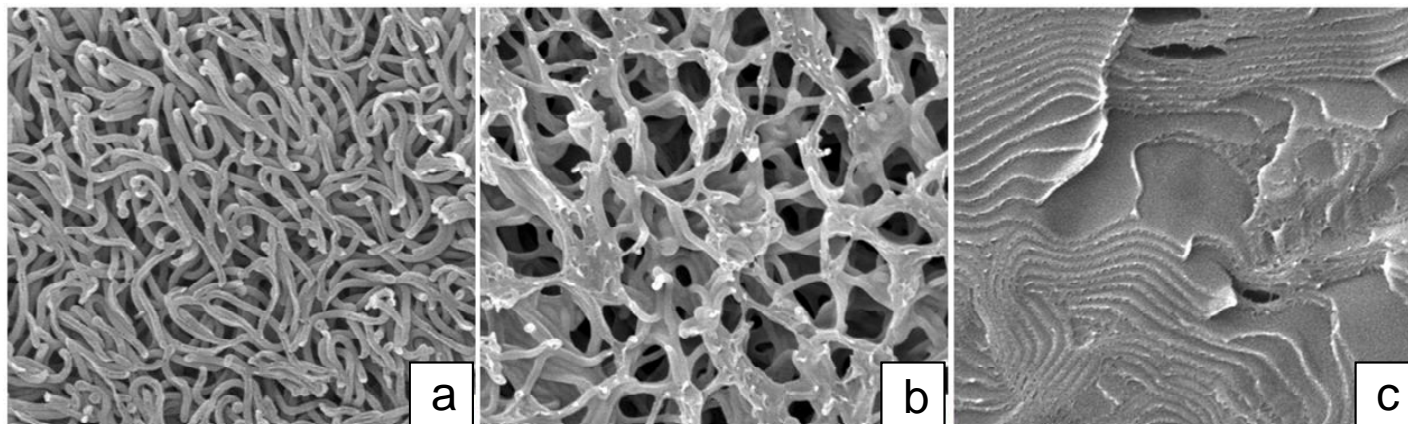
NNIN Facility utilized: Characterization Facility

## DESCRIPTION OF WORK

- ◆ TEM of microphase separated block copolymers
- ◆ CryoTEM of aqueous dispersions
- ◆ TEM of block copolymer toughened epoxy
- ◆ SAXS from bulk specimens and dispersions

## MAJOR OBSERVATIONS

- ◆ New branched morphology in block copolymer surfactants
- ◆ Correlation of epoxy toughness with shape and state of block copolymer dispersion
- ◆ Identification of network morphologies in aqueous dispersions
- ◆ Quantitative identification of phase diagrams



Cryo-SEM images of hydrated amphiphilic block copolymers: a. cylinders, b. disordered network, c. lamellae. These images provide definitive evidence in assigning morphologies to these soft materials. From Jain et al., to appear.