

## Phase behavior of blend of PS-*b*-PB and PS homopolymer in a spherical confined geometry

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Block copolymer is a very interesting material due to their unique and rich phase behavior. Many groups have studied their self-assembly in a spin casted film and between two plates with numerous different combinations of atmosphere and modified substrates. Recently, self-assembly of block copolymer in a confined geometry is studied, especially in a cylindrical geometry, and well ordered helices or hoops were observed experimentally and estimated by computer calculation when the volume fraction of minor block is around 0.2. In this presentation, a spherical confined geometry is studied to investigate the confinement effect on block copolymer ordering. We studied phase behavior of blend of polystyrene-block-polybutadiene diblock copolymer and a polystyrene homopolymer in a spherical confined geometry in three different molecular weight regions:  $r < 1$ ,  $r \sim 1$  and  $r > 1$ , where  $r$  is the relative molecular weight ratio between the molecular weight of homopolymer and the molecular weight of the respective block of diblock copolymer.