

# Surface induced order in molecular and polymer systems

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We have carried out surface x-ray scattering measurements to determine the phase behavior of molecular and polymer systems in contact with solid walls and at the vapor interface. For molecular systems the interfacial interactions may give rise to surface freezing, where a single or double frozen layer is in contact with the bulk over a range of temperature. Our recent results at oxide surfaces show that the surface frozen temperature depends on the specific interactions with the interface. For ionic liquids, the surface induced ordering can extend from a single layer to many layers. In the case of conjugated polymers, nanoimprinting induces alignment and orientational order not found in the bulk. Recent results from the BNL Soft Matter Group and its collaborators will be presented.

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