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ORIENTED SUPRAMOLECULAR SYSTEMS - POLYMERIC MONOLAYERS AND MULTILAYERS FROM PREPOLYMERIZED AMPHIPHILES

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Summary

Oriented polymeric membranes were originally prepared by polymerization or polycondensation of preoriented monomers. The introduction of hydrophilic spacer groups into the polymeric amphiphiles allowed the formation of highly ordered systems (monolayers, liposomes, multilayers) from prepolymerized amphiphiles: due to the partial decoupling of the different mobilities and orientation tendencies of the polymer chain and the amphiphilic side groups, these polymers are able to self-organize. In monolayer experiments the high order of these membranes could be demonstrated by their surface pressure area-diagrams. In addition the combination of order and mobility of these spacer groups containing polymeric amphiphiles allowed the formation of Langmuir-Blodgett-multilyers with a high layer correlation. Thus, disturbancies in highly oriented layers can be avoided normally taking place during the polymerization reaction (e.g. contractions) or oriented monomeric layers.

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