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AMBITIOUS LEADER'S PROGRAM

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Ambitious 物質科学セミナー

Carbohydrate Block Copolymers:

Nanostructured Thin Films

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Numerous studies have been focused on the self-assembly of petroleum-based BCPs for potential applications in multidisciplinary fields, such as nanoparticles for drug delivery, or nano-organized thin films for biosensors, or nanolithography. Very recently a new class of BCP - carbohydrates-based block copolymer systems- abundant, renewable and constitute a sustainable source of materials - are attracting much interest in various sectors and their industrial applications at the nanoscale level will have to expand very quickly in response to the transition to a bio-based economy. The self-assembly of carbohydrate BCP systems at the nanoscale level via the bottom-up approach, has allowed only recently the conception of very high-resolution patterning (thin films with sub 10nm resolution) as well as very high transistor memory performance that has never been attained to date by petroleum-based molecules and provides these new materials with novel properties. New and recent results on the self-assemblies of carbohydrate-based block copolymer leading to highly nanostructured thin films (sub-10nm resolution) will be presented in combination of solvent and/or microwave radiation annealing.

本講演は、大学院総合化学院『化学研究先端講義／総合化学特別研究第二』の一部として認定されています。

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