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GRK 2516 Soft Matter Seminar

Dec. 8, 2022 at 2:30 p.m.
Minkowski Room, 05-119, Staudingerweg 7

Research seminar of the DFG Research Training Group GRK 2516 (https://grk2516.uni-mainz.de).

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Self-assembled Peptides Structure Mediated by Solid Interfaces

In nature, many biological systems self-assemble into structures such as peptides, proteins, or DNA. The molecule's self-assembly arose from noncovalent interaction, steric limitations and excluded volume effects. In this project, we used thermosensitive amphiphilic dendritic C3-symmetric peptides containing either glutamic acid or lysin groups. In situ QCM-D reveal a layer-by-layer absorption of the oppositely charged peptides, forming a multilayer. The total amount of adsorbing peptides is derived by the adsorbed temperature and increases with increasing temperature. Exposure to high or low pH (12 or 2) removes the peptide stacks apparently due to reduced electrostatic interaction. AFM result shows the distribution pattern is nanorod-like. These experiments prove stable switchable blocks on the surface that can carry biological and colloidal materials.

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