Abstract Submitted
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Self-Assembly of Peptides at the Air/Water Interface MEHMET SAYAR, Koc University — Peptides are commonly used as building blocks for design and development of novel materials with a variety of application areas ranging from drug design to biotechnology. The precise control of molecular architecture and specific nature of the nonbonded interactions among peptides enable aggregates with well defined structural and functional properties. The interaction of peptides with interfaces leads to dramatic changes in their conformational and aggregation behavior. In this talk, I will discuss our research on the interplay of intermolecular forces and influence of interfaces. In the first part the amphiphilic nature of short peptide oligomers and their behavior at the air/water interface will be discussed. The surface driving force and its decomposition will be analyzed. In the second part aggregation of peptides in bulk water and at an interface will be discussed. Different design features which can be tuned to control aggregation behavior will be analyzed.

[1] O. Engin & M.S. "Adsorption, Folding and Packing of an Amphiphilic Peptide at the Air/Water Interface," J. Phys. Chem. B 116 (7), 2198-2207 (2012)
[2] O. Engin, A. Villa, M.S. & H. Berk, "Driving Forces for Adsorption of Amphiphilic Peptides to Air-Water Interface," J. Phys. Chem. B 114, 11093-11101 (2010)

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