

Abstract Submitted
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Unraveling the Nanostructure and Chain Conformation of Peptide-polymer Conjugates in Solution using Small-angle X-ray Scattering REIDAR LUND, Department of chemistry, University of Oslo, TING XU, UC-Berkeley, HE DONG, Clarkson University — For therapeutics, polymer functionalization, often by poly(ethylene glycol), PEG (“PEGylation”), is an effective method to improve the solubility, increase the life time and protect the proteins from the immune system[1]. However it is essential that the proteins maintain their structural integrity in solution- thus the role of the polymer and their interactions with proteins needs to be understood. In this work we show how small-angle X-ray scattering (SAXS) can be used as a powerful technique to characterize the structural components of peptide-polymer conjugates in solution [2,3]. We specifically show that by applying detailed modelling very detailed structural features can be revealed, including the PEG chain conformation. In the presentation we will provide an overview of the methodology, specifically addressing peptides that form either alpha-helical bundles [2,3] or beta-sheet structures [4,5] and relate their structure in solution to their crystal structure.

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