



Contribution ID: 35

Type: Talk

## Conformational Changes of IDP under Influence of Guanidinium Chloride: Integrative Approach using X-ray/Neutron Scattering and Single Molecule Spectroscopy

*Wednesday, 9 June 2021 15:50 (20 minutes)*

IDPs are identified by the presence of unfolded region due to relatively abundant polar residues content within its amino acid sequence. Together with other residues, IDPs exhibit not only high flexibility but also sensitivity to physico-chemical fluctuation such as pH, temperature, and ions concentration. For this reason, IDPs are involved in cellular processes such as DNA repair scheme and chromatin modification. In this project, we pursue a quantitative description of structure and dynamics of IDPs with different net charges: namely Prothymosin Alpha and Myelin Basic Protein. Here, we employed neutron spin echo spectroscopy (NSE) and small angle X-ray scattering (SAXS) to gain insight on the emergence of internal friction within the peptide and its conformational change as a function of Guanidinium Chloride (GndCl) concentration respectively. The experimental results obtained from SAXS shows contraction and expansion as measured by FRET. Similarly, from NSE data, we are able to extract the internal friction which is in good agreement with FCS results.

**Primary authors:** Dr DULLE, Martin (JCNS-1, FZ Jülich); HARIS, Luman (Forschungszentrum Jülich); Dr HOFFMANN, Ingo (ILL); HOLDERER, Olaf; Dr KÖNIG, Iwo (University Zurich); RADULESCU, Aurel (Forschungszentrum Jülich GmbH, Jülich Centre for Neutron Science at MLZ); Prof. SCHULER, Ben (University Zurich); STADLER, Andreas (FZ Jülich)

**Presenter:** STADLER, Andreas (FZ Jülich)

**Session Classification:** Protein structure, function and dynamics

**Track Classification:** Protein structure, function and dynamics