



INSTITUTE SEMINAR

1ST DECEMBER, 2017 | 04:00PM | FERMION HALL



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TITLE

Dynamics of Water and Ions around DNA: What's so special about them?

ABSTRACT

Water around biomolecules is indeed special for behaving strangely both in terms of structure and dynamics, while *ions* are found to control various interactions in biomolecules. The questions that how water and ions around biomolecules such as proteins, DNA and lipids, behave in terms of their structure and dynamics, and how they affect the biomolecular functions have triggered tremendous research activities worldwide. Such activities not only unfolded important static and dynamic characteristics of water and ions around biomolecules, but also provoked heated debate for decades. DNA being negatively charged, it strongly interacts with surrounding dipolar water and positively charged counterions – leading to complex electrostatic coupling of water and ions with DNA. Recent time-resolved fluorescence stokes shift experiments and computer simulation studies from our as well as other laboratories have unfolded some interesting dynamic characteristics of water and ions near DNA, which will be discussed to showcase the speciality of water and ion dynamics near different structures of DNA.