

Institute for Terahertz Science and Technology

Seminar Series

Thursday – Nov. 19, 2009
Room 3302 Broida Hall, 12:30 - 2pm

Site-directed spin labeling studies of nucleic acid structure and dynamics

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In site-directed spin labeling (SDSL), a stable nitroxide radical is attached at a specific location within a macro-molecule, and structural and dynamic information at the labeling site is obtained via electron paramagnetic resonance (EPR) spectroscopy. Our current research effort centers on a family of nitroxide probes, called the R5-series, which can be attached at a specific nucleotide of any given RNA and DNA in an efficient and cost-effective manner. I will present work on using the R5-probes for measuring nanometer distances as well as probing nanosecond dynamics of large RNAs with complex three-dimensional structures. These studies provide new insights on the structure/function relationship in nucleic acids that are difficult to obtain with other methods.

Refreshments served