応化分子教室セミナー, The 74th CMS International Seminar

The 7th Excited-state Functional Chemistry Seminar

Prof. Asif Equbal (Link)

NYU Abu Dhabi, UAE

“Optical Spin Polarization: An ideal candidate for Quantum Sensing”

Date: March 2nd (Thu) 2023, 16:00~
Place: West 4, 2nd floor, Ito Campus (工学部中講義室)

Abstract: Photoexcitation of organic chromophores appended to stable radicals creates multi-spin systems that can serve as an ideal system for quantum information applications including computing and sensing. I will talk about the design and development of an organic molecule with a very high electron spin polarization, a long lifetime, and a long coherence time, satisfying all the necessary DiVincenzo's criteria for constructing a spin based quantum computer. Such a system can also serve as a polarizing agent for room temperature dynamic nuclear polarization- a sensitivity boosting technique for NMR and MRI. The optically excited chromophore was characterized using a combination of time-resolved ultra-fast optical and electron paramagnetic resonance (EPR) measurements.

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Admission: free