

CBC SEMINAR ANNOUNCEMENT



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ATTOSECOND PHYSICS FOR BIOMEDICINE

Field-resolved vibrational molecular spectroscopy for early cancer detection

Attosecond metrology now allows sampling of the electric field of light with a robust solid-state devices and powerful few-cycle laser technology, opening the door for complete characterization of classical fields all the way from the far infrared to the vacuum ultraviolet. These fields, with accurately measured temporal evolution, serve as a unique probe of the dynamic response of matter. Field-resolved spectroscopy will access (valence) electronic as well as nuclear motions in all forms of matter and constitutes a generalization of pump-probe approaches. Its implementation with a solid-state instrumentation opens the door for real-world applications, such as early cancer detection by measuring miniscule changes of the molecular composition of blood (liquid biopsy) via field-resolved vibrational molecular fingerprinting.

Date:	27th February 2017 (Monday)
Time:	11:00am – 12:30pm
Venue:	SPMS MAS Executive Classroom 1
Host:	Asst Professor Loh Zhi Heng