

Internal Webinar

Development of an affordable and state-of-art optical super-resolution imaging system utilising stochastic optical reconstruction microscopy

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My research focuses on the development of affordable, modular, research-grade optical microscopy systems, with particular emphasis on super-resolution imaging using stochastic optical reconstruction microscopy (STORM) and advanced optical instrumentation. During my PhD, I developed a modular openFrame-based microscope implementing STORM, photo-induced recovery, computer-generated holography, and programmable illumination (piSTORM) for improved single-molecule localisation imaging. I further integrated widefield, STORM, confocal, and image scanning microscopy into a multimodal platform. In addition, I have developed cost-effective laser systems, contributed to a hyperspectral imaging system, and the development of a digital slide scanning system. My research during PhD has provided me with hands-on experience in optical design, experimental implementation, laser systems, microscopy, instrumentation, and quantitative image analysis. In this talk, I will present my research experience on optical super-resolution imaging systems and other imaging modalities and also emphasis on experimental optical system development and its applications in quantitative biological imaging.

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16:00 Hrs

