

Titulo do seminário: **Adaptive optics for deep imaging: Novel micro-endoscopes for use in the lung and also blood vessels**

Prof. John M. Girkin

Data e horário: 31/10/2017, às 18h

Local: Bloco Alfa 1, sala 206, Campus de São Bernardo do Campo

This seminar will address innovative aspects of adaptive optics for deep imaging developed by our research group. In work funded by the British Heart Foundation in a project led by Prof. John Mullins in Edinburgh we are looking to develop a range of miniature optical instrumentation for advanced life science research. The techniques developed will be capable of detecting activity from deep within an animal. This brings together skills within the CFAI in optical fiber preparation, adaptive optics and electronics to develop a new strand of research. This project builds upon links to Heriot Watt, Edinburgh and Strathclyde that have produced previous instruments and dedicated micro-optical systems. With Heriot Watt a novel diffractive lens was designed and produced for use in incoherent miniature light sources, such as those produced at Strathclyde as micro LEDs. Novel refractive micro-lenses in “hard” materials have also been produced to enable micro-beam control in miniature instrumentation. In a Wellcome Trust funded project led by our collaborators at Strathclyde we are looking at cell signaling within intact blood vessels. To do this we have developed a novel imaging probe based upon an earlier instrument used to make measurements in a brain. Using miniature grade index lenses with have developed a probe with sub-cellular resolution that can image around 300 endothelia cells in an intact blood vessel with a diameter down to around 1 mm. Using this technology we have then investigated the cell signaling under a range of conditions and for the first time viewed this in intact blood vessels.

John M. Girkin

Bibliografia resumida:

Físico formado pela Universidade de Oxford, com doutorado em Southampton (UK). Fundador do Centro de Biofotônica na Universidade de Strathclyde (Escócia); atualmente é diretor do Instituto de Ciências Biofísicas da Universidade de Durham (UK). Trabalha com o desenvolvimento e aplicações de fotônica avançada e tecnologia óptica em ciências da vida (medicina, odontologia, biologia marinha, dentre outras), além de desenvolvimento de microscopia óptica confocal e multifóton para diversas aplicações multidisciplinares. Atualmente tem trabalhado também com instrumentação micro-óptica (microfluídica).

