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(I) Advanced Near Infrared Spectroscopy Techniques for Biophotonics Applications

Thursday, 9 June 2022 08:45 (45 minutes)

Near infrared tissue spectroscopy (NIRS) is a rapidly growing sub-field of biophotonics with unique applications in both research and patient management. NIRS takes advantage of (1) the relative transparency of living tissue to near infrared (NIR) light to probe deep lying tissue beds such as the adult brain, and (2) differences in the absorption features of important biomarkers of tissue health such as blood, water, lipid to noninvasively quantify their concentration in living tissue. Further, the technology is safe, low-cost, and can be deployed at the bedside.

This presentation will provide an introduction to light-tissue interaction and advanced NIRS methods for measuring biomarkers of tissue health. Notably, novel NIRS instrumentation and modelling will be presented as well as applications of NIRS for measuring cerebral blood flow and oxidative metabolism in neonates and adults.

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Session Classification: R1-3 DPMB 101 Lectures (DPMB) | Conférences DPMB 101 (DPMB)

Track Classification: Technical Sessions / Sessions techniques: Physics in Medicine and Biology / Physique en médecine et en biologie (DPMB-DPMB)