Optical Biopsy VIII (BO119)

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The goal of the conference is to present novel state-of-the-art work in non-invasive spectroscopic methods to detect the onset and progression of disease including pre-malignancy and malignancy and tissue response to external conditions including therapeutic intervention, unintended injury, and laser energy deposition. The conference will focus on the work investigating the differences in optical signatures of normal and diseased tissues, and on understanding the underlying biochemical and structural changes of tissues and cells responsible for the observed spectroscopic signatures. This conference covers a wide array of well established techniques and novel approaches to diagnose tissues changes including in vivo and ex vivo fluorescence spectroscopy, spectral imaging, Raman spectroscopy and photonic methods to modify the tissue properties or functions implemented in vivo or ex-vivo covering the technology development steps from bench to bedside. Compact smart spectral explorers, multi-spectral imagers and hyper spectral imaging will be highlighted and covered in part with invited speakers.

Topics:

• fluorescence spectroscopy
• phosphorescence spectroscopy
• fluorescence imaging
• excitation spectroscopy
• absorption spectroscopy
• THz spectroscopy
• Raman spectroscopy
• near infrared diagnostic methods
• Stokes shift spectroscopy
• inelastic light scattering
• time resolved techniques
• nonlinear optical biopsy mapping
• polarization spectral imaging
• diffusive reflectance methods
• origin of tissue optical properties
• instrumentation for in-vivo optical biopsy
• video spectral imaging and mapping of tissue
• cell smears spectroscopy
• physiological state of tissue
• chemo- and molecular targeting agents
• spectroscopy with micro-endoscopes
• nano particle tagging.
• STED nano-scale imaging
• supercontinuum for medical and biological
• stimulated Raman Gain spectroscopy
• diabetes noninvasive detection
• speckle spectroscopy for diagnoses
• time reversal techniques
• tissue modification with light pulses
• laser tissue welding
• dynamics of laser-tissue interactions