Raman spectroscopy techniques for intra-operative diagnosis in cancer surgery

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Raman spectroscopy is a powerful technique for analysing biological tissues at a microscopic level. The presentation focuses on molecular imaging of tissue aimed at fast detection of positive margins during cancer surgery. Selective sampling approaches combining auto-fluorescence imaging and Raman spectroscopy exploits the speed and molecular specificity of these techniques to allow accurate detection of positive margins withing timescales compatible with intra-operative clinical use. The presentation will show the latest results on clinical integration and validation of the technique for skin and breast cancer surgery, focusing on diagnostic test accuracy studies. The presentation will also highlight the potential of this technology for broader applications in surgical margins and in-vivo diagnosis for to other cancer types.