

Synchrotron based FTIR spectroscopy. What does the clinician need?

Josep Sulé-Suso

University Hospital of North Staffordshire and Keele University, Stoke on Trent,
U. K.

It is widely accepted that FTIR spectroscopy has a huge potential in the diagnosis of cancer. The possibility of studying cancer cells in biopsy samples in a truly objective way makes FTIR spectroscopy a highly desirable tool in pathology departments. However, in spite of the vast amount of work and numerous publications on the subject, this technique has not made it yet into routine clinical practice. There are several obstacles that, in my opinion, still need to be dealt with if we want FTIR spectroscopy to be widely used by clinicians. First, the right niche should be identified for the clinical application of FTIR spectroscopy. As an example, this technique could help to better characterise those cells deemed suspicious but not diagnostic for cancer thus reducing the need for further biopsies. Second, standardization. This is of utmost importance in sample preparation, data collection, and data correction and analysis amongst other. Third, validation. The data obtained with FTIR spectroscopy needs to be validated with other standard techniques if we wish to get the medical community fully involved in this area of research. This talk will take the audience, from a clinician point of view, through the next steps required not only to bring closer both the spectroscopy and medical communities but also to lead towards a full medical application of FTIR spectroscopy in cancer diagnosis.