Special Issue

Biomedical Applications of Infrared and Raman Spectroscopy

Message from the Guest Editors

Infrared and Raman spectroscopy have been gaining interest as tools to address complex problems in biomedicine. The basis for this is that both infrared and Raman techniques are capable of providing particulars of the morphology and chemical composition of cells, tissues, and other biomaterials, in a fast non-destructive way, but are also able to scrutinize fine details of the structures adopted by their constituting molecules. Since diseases and other pathological anomalies lead to chemical and structural changes at the molecular level, vibrational spectra can be used as sensitive phenotypic markers of the diseases. At present, with the handiness of high-throughput and sensitive instruments for Raman and infrared microspectroscopic imaging, reliable fiber-optical probes for in vivo applications, and powerful analytical methods based on multivariate analysis, all conditions exist for infrared and Raman spectroscopy to gain prominence in the biomedical field. Research articles on both technical developments and applications of infrared and Raman spectroscopy to biomedical problems are welcome, as are review articles and perspectives from experts in the field.

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