



## Spectroscopy of Biological Molecules

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Deadline for manuscript  
submissions:

**closed (20 January 2023)**

### Message from the Guest Editor

Spectroscopy, with its advances in technology, is central to novel applications in bioengineering, natural sciences, and now in the medical field. Both Raman (RS) and infrared (IR) spectroscopy can help in the diagnosis of infections at point of care. Spectroscopic techniques have attracted growing interest as biomedical tools for the early diagnosis and monitoring of human disease. Using spectroscopy coupled with multivariate analysis could be a powerful approach to exploring biomolecules. Artificial intelligence has the potential to customise the deep neural networks that have the ability to learn the spectra, and after training, could make predictions instantly regarding spectra. Using RS and IR combined with artificial intelligence and machine learning will allow to monitor the chemical pathway to the progression of the disease and identify any changes in the chemical structure of the viruses and bacteria that may occur. In addition, due to precise determination of chemical structural changes by spectroscopy, it should be possible to detect the concentration of various infections in biological molecules.





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