Point of use SERS for Biomolecular Detection'

Duncan GRAHAM - *University of Strathclyde, UK*

Raman spectroscopy is an attractive technique for the analysis of biomolecules due to the rich information provided. However, due to the lack of sensitivity, Raman spectroscopy has struggled to become adopted in many widespread biological applications. To enhance the sensitivity of Raman spectroscopy, surface enhanced Raman spectroscopy (SERS) can be used and this presentation will focus on the latest developments of using SERS from Strathclyde for point of care applications. In the first example a SERS lateral flow assay has been devised to detect the presence of the infection clostridium difficile and shows the ability to perform this detection in a faster time and more sensitively than currently available approaches. The second example will focus on the detection of drug induced liver injury and shows the ability of SERS to be used to detect the specific biomarker, keratin 18 to indicate the presence of liver injury. These two examples demonstrate the utility of SERS for point of care applications and are the basis for further translational efforts into moving SERS from the laboratory to the clinic.