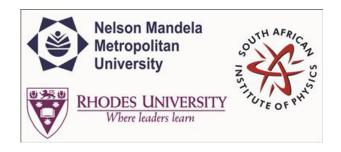Contribution ID: **197**   Type: **Oral Presentation**

Surface Enhanced Raman Spectroscopy (SERS) of bio-molecules.

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Abstract content
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Surface Enhanced Raman Spectroscopy (SERS) is a powerful vibrational spectroscopy tool as it provides detailed fingerprint information on samples due to its high sensitivity. In this study we investigate the suitability of SERS for bio-molecules (proteins and carbohydrates). The specific degree of enhancement will be looked at.

For the detection of proteins, three types of Ag nanoparticles shall be employed. These are the hydroxylamine reduced, PEG-coated and the iodide coated nanoparticles. By utilising these types of nanoparticles we look at and compare how the Raman signals from specific proteins are enhanced. This shall be studied with an existing setup using a 532nm Nd:YAG laser as well as 785 nm diode laser in-order to investigate the wavelength dependency of the signal enhancement. Eventually, concentration studies can be carried out in order to establish the detection limit together with the optimum sample concentration for effective signal enhancement using the most effective type of nanoparticle and laser system.

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