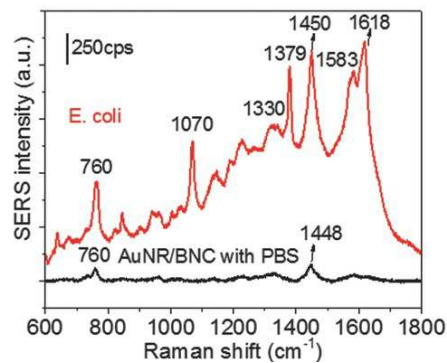
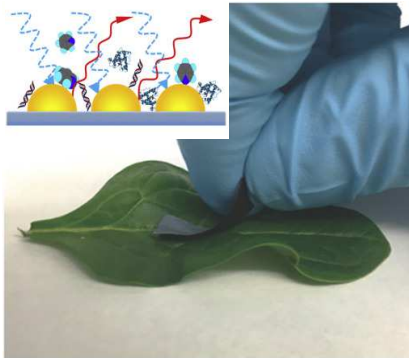


Master Thesis

Flexible Surface Enhanced Raman Scattering Substrate



Motivation

Flexible surface enhanced Raman scattering (SERS) substrate offers the chance for highly sensitive and rapid analysis of the ultra-low concentration analytes when an irregular surface diagnostic comes into the situation. Meanwhile, such SERS substrates provide the possibility of in-situ analysis for collecting the Raman signal from either the front- or the back- side. Therefore, developing the flexible SERS substrate is highly desired in the real-world application as a novel analytical tool.

Task

The work will focus on developing a highly transparent, flexible, freestanding thin layer for SERS. Different surface modifying methods will be applied, such as plasma surface treatment and wet printing. The characterization of the functional layer will be then examined in the Raman spectroscopy setup.

Prerequisites

Prerequisite for the work is independent experimental work, team spirit as well as interest in new topics and approaches. Masters student in Optics, Material Science, Chemistry and Physics or related disciplines are proper candidates for the work. Experience and knowledge of Raman spectroscopy, wet printing, AFM, UV/VIS/NIR spectrometer, Labview are desired.

Research areas

Raman spectroscopy,
Nano-photonics,
plasma,
Nano-structuring

Type of work

Experimental

Location

LTI (KIT, Campus South)

Starting date

As soon as possible

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