

Master Project - Raman spectroscopy and microscopy of polymer/skin system

Nowadays, label free chemical imaging performed by Raman microscopy is a powerful tool for visualization on a qualitative and even quantitative level of chemical compounds in biological samples. We are working on the development of sensitive confocal Raman microscopes for chemical imaging of drug/polymer, drug/living cells and drug/tissue systems. By the usage of chemometric data analysis we are able to resolve weak intermolecular and chemical interactions between compounds.

In a collaboration with the company Coloplast, we want to investigate the interaction of chemical compounds applied to the surface of skin, study polymer/skin system with respect to chemical distribution of components, etc. The master project will include responsibilities such as sample preparation, ex-vivo Raman microscopy mapping in 2D and 3D, Raman spectroscopy measurements of biomolecular solutions and spectral data analysis. Coloplast will pay a salary at the level of 3000 DKK per month for the chosen candidate.

The project would suit a student with an interest in Raman spectroscopy, spectral data analysis and biomedical label free Raman imaging.

Supervisors: Roman Slipets, Oleksii Ilchenko, Martin Denberg, Anja Boisen

Contact: Oleksii Ilchenko (olil@dtu.dk)

