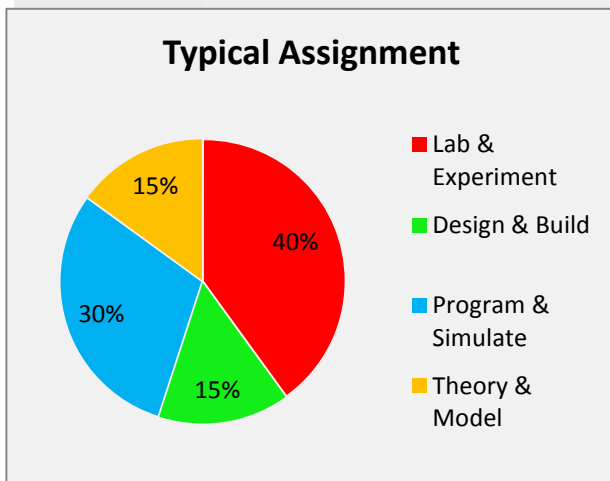
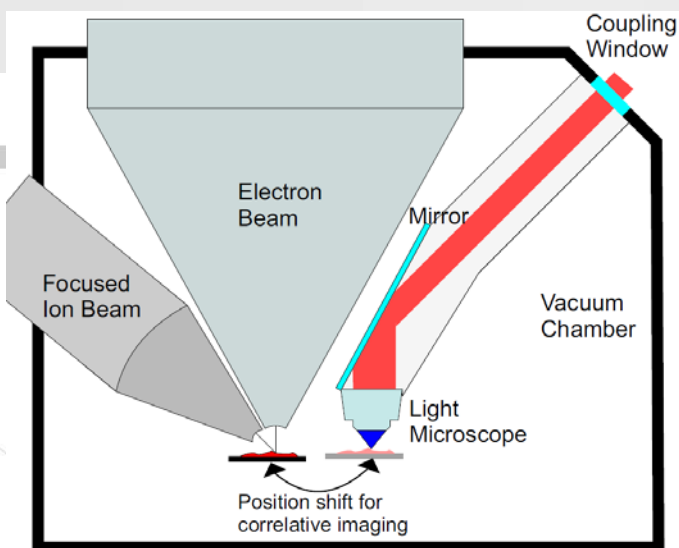


# Integrated Raman – Scanning electron microscope



## Project background

Integrated light and electron microscopes are becoming increasingly popular. These systems are used to correlate nanometer resolution electron microscopy images with light microscopy analysis. We are integrating a Raman microspectroscope with a Focused Ion Beam (FIB) Scanning Electron Microscope (SEM). This system will be used for new research in the material and biological sciences.

## Experiments / Techniques

We will investigate this system's capabilities in many different areas. Therefore we will perform many proof of principle experiments in the most promising research fields. We are further interested in possible improvements of our microscope. For example the implementation of a new excitation laser in the Raman microscope, or building a tool with which cryogenic samples (fast frozen cells  $-140^{\circ}\text{C}$ ) can be placed in the microscope chamber.

## Student Projects

We have several student projects open which we can adapt depending on your interests. In one project you will be performing experiments and analysis with Raman microscopy on a set of many (20) different compounds. These compounds will be distinguished in a single image with different analysis methods (cluster analysis and principal component analysis). Additionally we have projects focused on developing and improving of our microscope. These developments are for example: performing cryogenic measurements, developing a sparse distribution tool for nanoparticle Raman labels, or making the microscope polarization sensitive.

visit us at CR 4433

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