



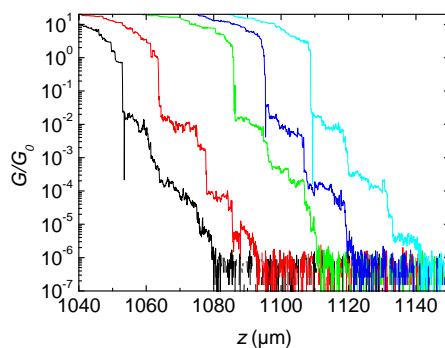
## ***Making contact: investigating new binding schemes in molecular junctions***

The mechanically controlled break junction technique is a well-established system to investigate the electronic properties of single or few molecules. The molecular devices are fabricated via state-of-the-art nano-lithography processes. A good stability and reproducibility of the molecule – metal bonds is crucial for such measurements.

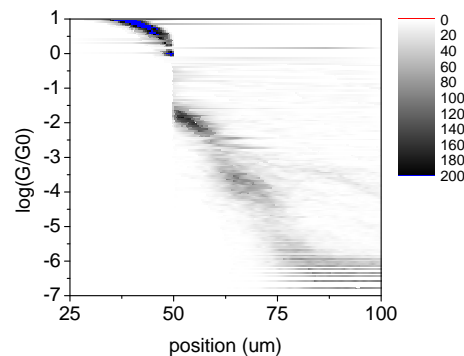
Besides the commonly used thiols, pyridines and amines, there are promising alternative functional groups with interesting properties. The goal of this project is to characterize existing molecular compounds bearing alternative binding groups. Some of the questions asked will be, for instance: what is the mechanical strength of the attachment and can we assess the configuration of the molecule(s) between the contacts? What is the nature of the electronic communication between contact and molecule?

The work will involve the preparation, electrical characterization and analysis of various molecular junctions.

Conductance traces from breaking cycles



2D histogram



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**Info**

starting date: possible immediately  
duration: 8 weeks (Project) / 24 weeks (Master)  
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