**MSc project**

**Development of novel Atomic Layer Etching processes for future nanoelectronics**

- Are you interested in how the integrated circuits in your smartphone are fabricated?
- And do you want to contribute to the synthesis of even smaller devices?
- Do you want to perform interdisciplinary research at the boundary of physics, chemistry, and material science?

Then this MSc project might be a good fit for you!

To fabricate future nanoelectronics, the semiconductor industry is currently focusing on the synthesis of structures of only a few atomic layers in size. Working at this extremely small scale requires the development of new fabrication techniques. Atomic layer etching (ALE) is a technique that enables the removal of material *layer-by-layer* with atomic level control, and will therefore be employed to manufacture the computer-chips of the future.

![Diagram showing half-reaction A and half-reaction B](image)


**Project description**

In this MSc project, you will develop and test several new ALE processes, and evaluate their potential for semiconductor fabrication. This project will be part of a new research direction on ALE within PMP, meaning that there will be a lot of freedom to bring in your own ideas and test various approaches. Recently, some preliminary experiments have been carried out for several novel ALE chemistries, which led to promising results that can serve as a good starting point for more in-depth studies.

Depending on your interests, there are also opportunities to investigate the underlying fundamental surface reactions, or to focus more on the fabrication of specific device structures.

**Contact information**

Interested? For more information please contact:

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