


**Internship proposal 2009-2010**

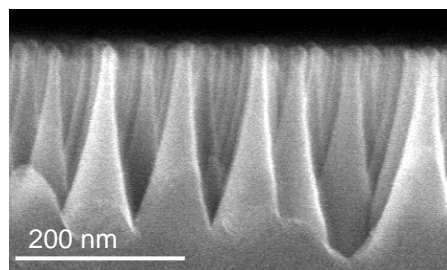
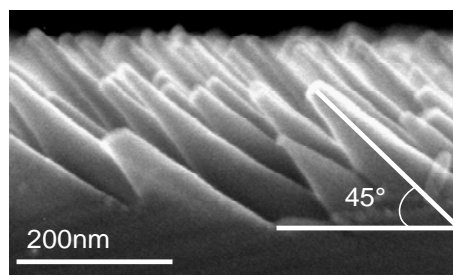
<b>Laboratory : Laboratoire Surface du Verre et Interfaces (SVI)</b> <b>Address : 39 Quai Lucien Lefranc, Aubervilliers, France</b> <b>Laboratory director : Elin Sondergard</b>	
<b>Internship supervisor : Sebastien Le Roy</b> <b>Phone : (33) 1 48 39 55 78</b> <b>e-mail: sebastien.leroy@saint-gobain.com</b>	

***New nanostructuration method***

Nanostructured surfaces and materials opens for a new range of applications. For example in photonic systems, nanostructures can supply new and enhanced optical properties.

Bottom-up approaches to create nanostructures, like Molecular Beam Epitaxy (MBE) or Self-assembled monolayers (SAMs), based on self-organisation are promising roads to obtain patterns on large surfaces. But they remain expensive and limited to a small range of materials.

Our lab has developed a new technique to create nanostructures. Different type of textures can be obtained allowing for cheap and rapid patterning of glass.



*SEM images of anisotropic nanostructure in a III-V semiconductor*

Both experiments and simulations support the new technique, but additional work is needed to improve the method.

The 6 months master thesis consists in two main tasks: first the selection and synthesis of model systems using various methods from soft chemistry or vacuum science. Then the investigation of the nanostructuration processes on the obtained surfaces using *in situ* or *ex situ* characterization. For this purpose, several investigations methods are commonly used in the SVI laboratory: AFM, SEM, XPS, ellipsometry, UV reflectivity.

The laboratory is a joint CNRS/Saint-Gobain unit located within the research facility Saint-Gobain Recherche at Aubervilliers, just north of Paris. It develops strong ties both with industry and academic research.

For further details and applications (cover letter, CV):

<http://www.saint-gobain-recherche.com/svi/en>

S. Le Roy: sebastien.leroy@saint-gobain.com , tel: (33) 1 48 39 55 78

**Granted internship : yes**

**C'nano IdF laboratory (France only) : yes / no**

**Possibility for a thesis : yes (type of grant : \_\_\_\_\_) / no**