

Fully funded PhD position in Lyon

Context

Applications are invited for an ERC funded doctoral researcher position to work with Benjamin Abécassis at the Laboratoire de Chimie at Ecole Normale Supérieure de Lyon on **shape shifting ultra-thin colloidal nanoplatelets**. The overall goal of the project is to exploit the ligand induced mechanical instability of thin nanoplatelets to synthesize new chiral and addressable nanoparticles. With a fine control over the surface chemistry of the 2D particles, we will create a wide variety of 3D shapes such as helices, twists and rolls. Moreover, minute changes on the ligand induced forces can induce dramatic shape-shifting between these different geometries. Our goal is to use this general principle to establish a new class of nanostructures that current synthetic strategies can not afford. Within this general framework, **the aim of PhD is to synthesize and functionalize 2D nanoplatelets with complex shapes** and better understand the self-assembly of ligands at their surface. The doctoral researcher will work in strong collaboration with other members of the team who will study the formation mechanisms, shape control and surface functionalization of the nanoplatelets. More context on the project can be found in this recent perspective: [Guillemeney *at al*, Curvature and self-assembly of semi-conducting nanoplatelets, Communications Chemistry, 2021](#)

Profile

The successful candidate will be a chemist or physical chemist and should have a good academic track record with a strong motivation towards experimental work. **We seek candidates with a background in one the following fields: synthetic chemistry, materials chemistry, nanotechnology or soft matter**. The doctoral researcher will perform nanoparticle synthesis, synthesis of (chiral) organic ligands and will use different characterization tools such as UV-VIS spectroscopy, electron microscopy, X-ray diffraction and small angle scattering. No prior experience in these techniques is required. She or he will work in close collaboration with other members of the ERC team and his/her supervisor, good communication skills are necessary.

Practical details

Informal inquiries by email or phone are welcome. The appointment is for 3 years (the legal duration of a PhD in France). The start date is flexible but should be between september and december 2022. Please send a CV and the name of at least 2 references. Application deadline is May 2nd 2022 but the position will remain open until filled. We offer a competitive salary (2135€ gross salary) with full social security cover. The lab is located in École Normale Supérieure de Lyon in the south of Lyon, close to the city center, is easily accessible by public transportation and provides researchers with an ideal environment.

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