Opening for a Ph.D. position in chemistry at the University of Bordeaux

Photoinduced transformation of N_2 into nitrogen-containing functional groups and fuels

We are looking for a motivated young researcher eager to participate in a multidisciplinary project aimed at contributing to solving a fundamental problem in chemistry: *How can we activate inactive molecules?* Today, ammonia is synthetized from nitrogen gas and hydrogen at high temperatures and pressures (Bosh-Haber process). Although efficient, this process is particularly impactful on global warming and consumes 1−2% of the global annual energy supply. Our objective is to identify and tune photocatalysts absorbing in the UV-Vis region (> 330 nm) involving multi-photon excitation to generate reducing equivalents that will be accumulated by a catalyst and used to reduce molecular nitrogen. Fundamental studies will be aimed at optimization of the system though engineering of the absorption cross-sections and irradiations conditions and to selectively stop the reaction at specific reaction intermediates. This can then be harnessed to facilitate isolation and purification of functional monomers that can be incorporated in more environmentally friendly polymer syntheses.

The project will involve two groups, one specialized in photochemistry (ISM) and one in polymers and materials chemistry (LCPO). Together, we have access to a large gamut of equipment and instrumentation for you to use and learn.

You are a chemistry student with a Master's diploma or equivalent who is familiar with organic synthesis and / or photochemical transformations. You are curious, careful in your research work, attentive to details, and willing to learn new techniques. Working and communicating with others is no problem.

To apply, please send your CV, a cover letter, along with the names of any persons that can provide reference letters on your behalf to:

Dr. Dario Bassani (dario.bassani@u-bordeaux.fr)
Dr. Etienne Grau (etienne.grau@enscbp.fr)

The position is financed through the Post-Petroleum Materials Project and will begin Oct. 1st 2022 for a three-year period. Applications are welcomed up to July 15, 2022.