

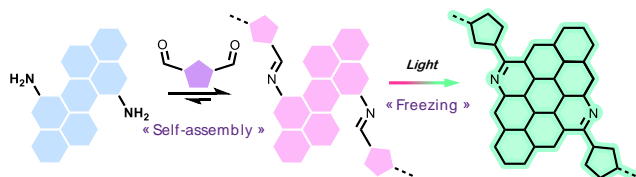
## Doctoral Researcher (PhD Student) Positions Funded by the ERC StG 2023 PhotoFreeze

# Light-Frozen Dynamic Covalent Synthesis of Electron-Deficient Conjugated Materials

**Location:** MOLTECH-Anjou Laboratory, Université d'Angers, France

**Supervisor:** Dr. Antoine GOUJON

**Duration:** 3 years, starting October 2025



**The project:** Organic electronics are finding more and more applications in our life: carbon-based conjugated polymers and small molecules can be found in devices ranging from organic solar cells, organic-field effect transistors, photodetectors, batteries or biosensors among many others. Synthesizing size-defined and atomically precise

graphene-like molecules to reach perfectly tuned optoelectronic properties is of high interest to discover new organic functional materials and unravel their design rules. Expanding the diversity of structure and properties of electron-deficient organic semiconductors (n-type) is a crucial challenge in the field. **PhotoFreeze** will explore the use of a combination of dynamic covalent chemistry and self-assembly to prepare mono- and multidimensional n-type conjugated materials for application in organic and sustainable electronics for the energy transition.

**The position:** The work will focus on the development of a light-controlled dynamic covalent methodology to prepare colourful mono- and multidimensional n-type conjugated materials, bringing together concepts from  $\pi$ -conjugated systems chemistry, dynamic covalent chemistry and supramolecular chemistry. It will consist in **mostly** organic synthesis, optoelectronic characterizations of the new materials and eventually organic electronics. The study of linear, twisted and helical nanographenes, macrocycles, and 2D/3D networks will be the priority.

**Join the ERC StG PhotoFreeze team if you like synthetic challenges and want to be a part of a scientifically dynamic, inclusive and supporting research group!**

### The candidate:

- You are a curious, dynamic and rigorous scientist with good communicating skills in English (spoken and written). You show independence and creative thinking, along with a team player and positive attitude.
- You have a Master Degree in Organic Chemistry or related field.
- You have experience (and interest!) in multi-step organic synthesis and a taste for optoelectronic characterization (spectroscopy/electrochemistry).

**How to apply:** An email should be addressed to [antoine.goujon@univ-angers.fr](mailto:antoine.goujon@univ-angers.fr), with « **PhD Application ERC StG PhotoFreeze** » as the subject. You should attach a single PDF file, in English, including:

- a detailed CV
- a transcript of marks from the Master
  - a short motivation letter,
- a proof of the obtention of the Master Degree (if already obtained)
  - the contact of 1/2 references you worked with.

Successful candidates will be invited to an online interview late May or early June.

**The MOLTECH-Anjou Laboratory** is focused on the preparation of functional organic materials (with an emphasis on organic electronics) and is fully equipped to go from their design to their characterization and integration into devices. Angers is a medium-sized city in France, located 1h20 from Paris by high-speed train and 1h30 from the Atlantic Ocean by car or train. A lively city, affordable, surrounded by nature, rivers and beautiful vineyards, Angers is a city recognized as offering a high quality of life.

