Description of the thesis topic

The main goal of this thesis will be to prepare, characterize and study programmed bio-hybrid macromolecules composed of synthetic digital segments and single-stranded oligonucleotides (DNA or RNA). These information-containing biohybrid macromolecules will be synthesized by phosphoramidite polymer chemistry (PPC). Their physicochemical, morphological and functional properties will be studied by several techniques including HPLC, GPC, ESI-MS, AFM and PAGE electrophoresis. Their ability to self-assemble into well-defined dynamic nanostructures will be also investigated.

Work Context

This doctoral project is part of a Priority Research Program (PEPR) of the National Research Agency (ANR) called MoleculArXiv, the aim of which is to study the storage of massive data on DNA and artificial polymers. The PhD student will work in the Laboratory of Chemistry of Informational Macromolecules (LCMI) of the Institute of Supramolecular Sciences and Engineering (ISIS), located on the campus of the University of Strasbourg.

Starting date: September 16th 2024

More information:

https://emploi.cnrs.fr/Offres/Doctorant/UMR7006-JEALUT-005/Default.aspx

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