ITI HiFunMat Master Internship Proposal

☒ M 1 ☐ M 2

Late-Stage Visible-light-assisted Functionalization of Uracil derivatives as potential antimalarial agents

Internship supervisor

Name, first name	ALBRECHT, Sébastien
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Laboratory	LIMA
Collaboration with a HiFunMat member (*please indicate their name*)	☒ No ☐ Yes :

Student profile looked for

Master program (*more than one box can be ticked)*	☐ Material science and engineering ☒ Chemistry ☐ Physics
Other indications if necessary	

Internship description

Despite significant progress in the control of malaria with a net reduction of morbidity and mortality over the past years, it remains as one of the deadliest infectious diseases in the world. New drugs with broad therapeutic potential and novel modes of action to overcome emerging drug resistances are urgently needed. We have recently identified a quinazolinedione-based scaffold exhibiting potent antimalarial activities against multiple life stages of Plasmodium, as well as fast acting and transmission blocking activities. The optimization of this "drug-candidate" is in progress and led us to direct our efforts towards the derivatization of uracil derivatives.

The aim of this internship will be the exploration of new methodologies for rapid construction of 5-aryl/heteroaryl/morpholino uracil derivatives under photoredox catalysis, and to transfer the previous batch method to continuous flow photochemistry.

In this position, you will design, plan and perform advanced discovery research projects by performing multi-step small molecule organic synthesis experimentation. You will generate and evaluate data, interpret, report results, and draw conclusions.