Spécialité de Master «Optique, Matière, Paris»

Stage de recherche (4 mois minimum, à partir de début mars)

Proposition de stage

Date de la proposition : Oct 11 2018

Responsable du stage */ internship supervisor*:

Nom / *name*: **Soto** **Prénom/ *first name* :** **Dan**

Tél : **0535543805** **Fax :**

Courriel / *mail*: **Dan.soto@poietis.com**

Nom du Laboratoire / *laboratory name*: Start-up Poietis

Code d'identification : **Organisme :Poietis**

Site Internet / *web site*: https://www.poietis.com/fr/index.php

Adresse / *address:* 27 Allée Charles Darwin, 33600 Pessac

Lieu du stage / *internship place*: Bordeaux

Titre du stage / *internship title*: **A startup-challenge: Optical design for Laser assisted 3D bio-printing**

Start-up presentation

Poietis is a biotechnology start-up specializing in the laser-assisted bioprinting of living tissue.

It provides industrial stakeholders and researchers with a unique platform to design and manufacture bio-printed products for regenerative medicine, preclinical research and evaluating the efficacy of cosmetic products and ingredients.

Its core laser technology allows to print cell by cell according to the following physical mechanism. The focusing of a laser pulse on a cartridge (composed of an ink film spread on a glass plate) results in the formation of an ink jet towards a substrate on which cell microdroplets are collected. By controlling the physical conditions of the ejection (energy, viscosity...), the volume of the droplets is controlled precisely. The cell patterns are obtained by rapid scanning of the cartridge by the laser, which results in the formation of 10,000 droplets per second.

Internship context

Poietis aims to consolidate its expertise regarding optical performance of all the laser chain components, from source to objective. We would like to work together with an intern that is familiar with optical design. We strongly value experience with alignment methods and software modeling, particularly with lasers.
This offer is a technological challenge in our field, at the crossroads of different disciplines such as fluid mechanics, biology and optics.

Goals: In direct collaboration with the R & D team the intern will:

- Asses the performance of the actual elements of the laser chain by means of software modeling and experimental measurements.
- Develop the understanding of how the components affect the bioprinting process.
- Propose concrete solutions and plan for their integration on the existing process.

Skills sought:

Contract: internship
Duration: 4 to 12 months
Remuneration: internship bonus

Dates: March to August 2019
Location: Bordeaux

Ce stage pourra-t-il se prolonger en thèse ? *Possibility of a PhD* ? :We are open to this possibility

Si oui, financement de thèse envisagé/ *financial support for the PhD*:

Lumière, Matière, Interactions	**x**	Lasers, Optique, Matière	**x**