

12(+12)-month post-doctoral position
Start date: during 2020

A new microfluidic strategy for metamaterials

Contacts

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Today, we are able to synthesize micrometric coils by allowing the spontaneous winding of a fiber around a microfluidic droplet, the mechanism at play being the surface tension which balances the bending energy. Combining many of these units, we may form a material that exhibits original optical properties. This idea combines concepts from three fields of engineering and physics: microfluidics, visco-elasto-capillary self-assembly and optical metamaterials. Besides the scientific and engineering challenge of preparing such units and collections thereof, the potential for commercialization is important.

A candidate with expertise in microfluidic design, a good knowledge of continuum mechanics (elasticity and hydrodynamics), interfacial phenomena, and a desire to bring technology to market (*i.e.* through interactions with our industrial partners and the possible creation of a startup) is thus desired. Working knowledge of light-matter interactions is also an asset.

The project *MimeCodr* is generously funded by the Institut Pierre-Gilles de Gennes' 2020 "High-risk topics" call and the 2020 PSL Research University *Prématuration PSL Valorisation Qlife* grants. The project will thus begin its development at the IPGG in Paris, France. Once the material is constructed, light-matter interactions will be measured, and continued developments within the market context mentioned above will be initiated. The duration of the project is 12 months, with the possibility of a 12-month renewal.

Interested candidates should send a CV, cover letter –and arrange for at least one letter of reference to be sent– to the contacts noted above no later than 07 September, 2020.