Université Claude Bernard Lyon 1- Hosting offer for a MSCA Post-doctoral fellowship candidate in **Optomechanics of complex media**

Host Organisation	**Université Claude Bernard Lyon 1**
Laboratory	**Institut Lumière Matière**
Website (lab / research team)	https://ilm-perso.univ-lyon1.fr/~kvynck/
Supervisor Contact name	**Kevin VYNCK**
Supervisor Contact email	kevin.vynck@univ-lyon1.fr

Host Organisation

The Université Claude Bernard Lyon 1 welcomes Marie Sklodowska Curie Postdoctoral Fellowships applications !

With 62 laboratories and more than 7000 publications per year, and leading French university in terms of the number of patents filed in collaboration with industry, Lyon 1 contributes to scientific and innovation progress in numerous fields: health, mathematics, IT, physics, chemistry, earth and space sciences, life sciences, etc. Creator of emerging knowledge and new technologies, the University is consolidating its research excellence on a global and international level by developing inter- and multidisciplinary approaches targeting the major challenges facing today society.

Host research lab/team

***Institut Lumière Matière* is a leading research lab in Europe.** With close to 300 members (*researchers, lecturers, PhD students, technicians, administrative staff*), it is one of the largest labs in its scientific field in the metropolitan area of Lyon. Its research activity spans experimental, numerical, and theoretical approaches and covers a very broad range of topics related to Physics, from laser physics to biophysics and condensed matter theory; this breadth fosters collaborations and innovations at the interface between disciplines.

Within this Institute, the team "Modelling of Condensed Matter and Interfaces" gathers researchers who leverage cutting-edge numerical and theoretical approaches to address a broad range of topics in condensed matter, light and matter interactions, and collective effects.

Hosting Offer

The ***Institut Lumière Matière*** offers to host a MSCA Postdoctoral Fellowship candidate (typically a post-doc of less than 8 years research experience since PhD defence), submitting an application to the next MSCA-2026-PF call for proposals (deadline 09th of September 2026), **intent on exploring one of the following questions in keeping with Optomechanics of complex media:**

* Developing new modelling tools to study the dynamics and stable configurations of large disordered assemblies of particles under coherent light excitation;

* Exploring, via theoretical models and/or machine-learning techniques, the capabilities of multispectral wavefront shaping to tailor the organization of particle assemblies;

* Discovering new mesoscopic optomechanical phenomena in complex media

The fellowship could last for 12 to 36 months, depending on the type of Postdoctoral Fellowship.

Supervision

The successful Marie-Curie Post-doctoral fellow will be supervised by Dr. Kevin Vynck. He is a Research Scientist at CNRS, the French National Centre for Scientific Research, and is specialized in the theoretical and numerical modelling of wave transport and scattering in complex media. With his colleagues, he developed new theoretical models and numerical methods in electromagnetics and mesoscopic optics, and contributed to the emergence of the topic of correlated disordered materials in optics. He has co-authored 53 peer-reviewed articles in international journals (including 5 in Physical Review Letters, 3 in Nature Materials, 1 in Reviews of Modern Physics) and is co-inventor of 5 patents (4 World, 1 France). In 2019, he was awarded the CNRS Bronze Medal.

5 selected publications:

P. Lalanne, M. Chen, C. Rockstuhl, A. Sprafke, A. Dmitriev, and K. Vynck, *Disordered optical metasurfaces: basics, properties and applications*, **Advances in Optics and Photonics**, vol. 17, pp. 45-112 (2025).

K. Vynck, R. Pierrat, R. Carminati, F. S. Froufe-Pérez, F. Scheffold, R. Sapienza, S. Vignolini, and J. J. Sáenz, *Light in correlated disordered media*, **Reviews of Modern Physics**, vol. 95, pp. 045003 (2023).

K. Vynck, R. Pacanowski, A. Agreda, A. Dufay, X. Granier and P. Lalanne, *The visual appearances of disordered optical metasurfaces*, **Nature Materials**, vol. 21, pp. 1035-1041 (2022).

M. Bertrand, A. Devilez, J.-P. Hugonin, P. Lalanne, and K. Vynck, *Global polarizability matrix method for efficient modelling of light scattering by dense ensembles of non-spherical particles in stratified media*, **Journal of the Optical Society of America A**, vol. 37, pp. 70-83 (2020).

K. Vynck, R. Pierrat, and R. Carminati, *Multiple scattering of polarized light in disordered media exhibiting short-range structural correlations*, **Physical Review A**, vol. 94, No. 033851 (2016).

Application process

Interested candidates are invited to contact us exclusively by email (kevin.vynck@univ-lyon1.fr).
Make sure that you include the reference to this offer in the title of your email. Please attach a CV, a motivation letter, your MSc marks, **as well as a 1 page research proposal**.

Professional grant application support:

Candidates will receive the support of the supervisors, as well as online training from a professional grant application company, and advices from successful applicants, to prepare and submit their application with the Institut Lumière Matière as a host laboratory, to the next MSCA-PF call for proposals.