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UMR 6302 CNRS, Univ. Bourgogne Franche-Comté
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Post-Doc position (organic chemistry and photophysics) - ICMUB - Dijon

Our research group at ICMUB lab. (UMR 6302, Univ. Bourgogne Franche-Comté, CNRS, Dijon, <http://www.icmub.com/>), recognized as one of the leading French academic players in the field of "Chemistry for Molecular Imaging", is offering a 24-month post-doc position (preferred starting date: October 2022).

The candidate will be recruited by the Université de Bourgogne and his/her research will be conducted within the context of an European project named "CoDaFlight" and led by a cross-disciplinary consortium (electronic and biomedical-engineers, physicists, chemists, medical scientists, and clinicians). The primary goal of this project is to develop a cutting-edge approach for multi-domain fluorescence imaging based on lifetime measurements¹, to address challenges in medical diagnosis.

Specifically, the aim of the post-doc work is to design, synthesize and perform structural optimization of emerging/promising classes of NIR-emissive organic-based fluorophores, especially derived from those developed in our group (Bodipys² or aza-Bodipys³, diketopyrrolopyrroles (DPPs)⁴), that will be used as lifetime-tunable fluorescent contrast agents. Ability of these novel fluorescent markers to act as effective biolabeling reagents

¹For tutorial reviews about molecular probes for fluorescence lifetime imaging, see: (a) Sarder, P. *et al.*, *Bioconjugate Chem.* **2015**, *26*, 963-974; (b) Li, B. *et al.*, *Nanotheranostics* **2022**, *6*, 91-102.

²For selected contributions from our group, see: (a) Lhenry, D. *et al.*, *Chem. - Eur. J.* **2015**, *21*, 13091-13099; (b) Maindron, N. *et al.*, *Chem. - Eur. J.* **2016**, *22*, 12670-12674.

³For selected contributions from our group, see: (a) Pliquett, J. *et al.*, *Bioconjugate Chem.* **2019**, *30*, 1061-1066; (b) Flores, O. *et al.*, *Inorg. Chem.* **2020**, *59*, 1306-1314; (c) Godard, A. *et al.*, *Bioconjugate Chem.* **2020**, *31*, 1088-1092; (d) Lescure, R. *et al.*, *Eur. J. Med. Chem.* **2021**, *220*, 113483; (e) Privat, M. *et al.*, *J. Med. Chem.* **2021**, *64*, 11063-11073.

⁴For selected contributions from our group, see: (a) Heyer, E. *et al.*, *Angew. Chem. Int. Ed.* **2015**, *54*, 2995-2999; (b) Jenni, S. *et al.*, *Spectrochim. Acta Part A* **2021**, *248*, Article 119179.

and/or valuable scaffolds for the construction of bioanalyte-responsive fluorogenic probes, will also be explored.

Candidate profile: Ph.D. in organic chemistry with a good theoretical and practical knowledge in photophysics, truly interested in organic synthesis and analytical chemistry, in particular the chromatographic techniques (semi-preparative HPLC, HPLC-MS, ...) and advanced spectroscopic techniques (steady-state and time-resolved fluorescence, ...). Rigor and care in the experimental work (small scale syntheses, handling of high added-value compounds, ...), proactive attitude towards problem solving and scientific watch, acute sense of ethics and organization, and good drafting/communication skills are required. A first meaningful research experience in chemistry and photophysics of fluorophores and/or "smart" fluorescent probes, may be a valuable asset but not mandatory.

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Application documents: detailed CV (+ 2-3 references), a brief summary of research works and a detailed covering letter.

Lab tour:



Please visit website of the analytical platform PACSMUB:

<http://wpcm.fr/index.php?page=presentation-generale>