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PhD Position available (3 years contract 10/2020-09/2023)

Within the project **ZeoMah** (Extra-large pore zeolitic materials for hydrocarbons upgrading), recently granted by the Labex EMC^3, one PhD position in organic chemistry/synthesis starting in October 2020 at the LCMT in Caen (France) is available under the title:

Synthesis of New Structure Determining Agents (SDAs) for Zeolites with Extra-large Pore Size

ZeoMah is an interdisciplinary collaboration of three Normandy-based research laboratories – the LCS and LCMT in Caen and the GPM in Rouen. The project ZeoMah deals with the SDA templated synthesis of crystalline zeolitic materials with 1-2 nm pore size. Such materials are cruelly missing by a number of industries including renewable hydrocarbon processing, heavy fossil oil conversion, waste-water decontamination of different types of effluents, separation of oil fractions (bio or fossil), and preparation of hybrid materials with organic functionality for advanced energy (storage and conversion), as well as sensing application. **ZeoMah** will be conducted by three collaborating PhD students working at the LCMT (organic synthesis & fluorescence spectroscopy), the LCS (zeolite synthesis & characterization) and the GPM (*in situ* & *operando* TEM). This project will open new horizons in science and engineering of inorganic nanoporous and organic/zeolite hybrid materials. Fundamental knowledge of factors controlling the formation of zeolitic materials with extra-large pore size and their organic-hybrid counterparts – *where the organic function will be retained in order to target specific properties* - will be obtained. The search for organic molecules suitable to act as structure determining agents (SDAs) in zeolite synthesis will include combinatorial and parallel synthesis approaches. Furthermore, a part of the thesis project will focus on the development of new molecular systems acting as fluorescence sensors or photo-switches in hybrid materials.

Candidate Profile: (Organic synthesis, LCMT) Candidates should have a master degree in organic synthesis with completed Master thesis before September 2020. The candidate should have a high motivation for interdisciplinary research, good organization and communication skills, and should have independency in his/her research work. The candidate should be devoted to organic synthesis and being able to plan and run basic chemical reactions. Experience in handling (air)sensitive compounds, as well as basic photophysical knowledge, will be appreciated. Good skills in maintaining lab-book, scientific documentation, report writing, and literature survey – as well as soft skills such as oral presentations, communication, etc. are required. The B2 English level, or equivalent is mandatory.

Needed documents: Letter of motivation, detailed CV, M1/M2 marks. Two letters of recommendation or names of academic referees (with address, e-mail and phone number).

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