

**Post-Doctoral position available at the University of Lille – Station Marine de Wimereux:**  
**Environmental Marine Biogeochemistry – Exchanges at the Sediment-water and sediment-air interfaces**

**Duration/dates: 12 months, from 1 January to 31 December 2019**

**Deadline for application: October 26, 2018**

Summary:

A postdoc position (1 year) within the field of Marine Geochemistry is available at the Department Station Marine de Wimereux (Laboratory of Oceanology and Geosciences - LOG – UMR 8187) at the Faculty of Science and Technology (FST), in the French University of Lille. The main field of the new position will be on the sediment-water interface biogeochemistry in relation to the marine ecosystem dynamics and in particular towards processes occurring in intertidal, shallow sediments and estuaries. Major part of the research of the position will focus on measurements of sediment-water or sediment-air exchanges, with the objective to obtain C budgets. The research part of this position has a special focus on the various approaches designed to obtain estimates of sediment-water/air exchanges (total/diffusive fluxes, microsensors, benthic chambers, whole core incubation, eddy covariance system).

Collaboration with existing conceptual model studies on sediment-water interactions, and application of existing coupled transport biogeochemical ecological models will be part of the research.

About the frame of the study: MARCO project:

The MARCO project (funded through the CPER 2014-2020, between the French state, the Hauts de France region and IFREMER; <https://marco.univ-littoral.fr/>), is a structuring project involving several laboratories and institutes, aiming to associate new instruments and tools for a global approach of coastal ecosystems, marine resources and aquatic products quality. The project is developed around 6 axis, 1) the observation and evaluation of the marine environment, 2) Structure, functioning and ecosystems dynamics, 3) Productivity and sustainability of fisheries and aquaculture, 4) Quality of aquatic resources, 5) Weakness and uses of marine and littoral eco-socio-systems 6) Marine and littoral engineering. The final goal is to help the stakeholders in designing the management plans of exploited/protected areas along the littoral of the Eastern English Channel.

About the specific project:

The postdoctoral position available is included in both axis 1 and 2 of the Marco project. In this part, we aim to quantify exchanges of dissolved compounds (mainly C, N, O) between surficial sediments and the overlying water/air in intertidal and shallow subtidal ecosystems. A focus will be done on C budget along a tidal cycle, but also at the seasonal scale, or consecutive to extreme natural (storm, flooding) or artificial (littoral development, constructions...) perturbations. The budget will be calculated for several littoral environments, from estuarine systems (Canche, Authie, Somme) to intertidal permeable sediments, and shallow subtidal ecosystems, considering the spatial and temporal variability at different scales. This work will benefit from newly acquired systems allowing the quantification of fluxes at the sediment-water or the sediment-air interfaces, using various techniques, from whole core incubations in the laboratory, to *in situ* benthic chambers, field oxygen 2D microprofiling systems, and eddy covariance system. A focus will be done on short-term variability

of exchanges, through high-frequency field measurements considering both production (microphytobenthic, salt marshes) and mineralization processes.

#### Qualifications:

We are seeking a Postdoc candidate with background in the fields of Marine Biogeochemistry, coastal environment, data retrieval and managing, with additional knowledge or experience in marine physics and high frequency data treatment would be welcome (eddy covariance system). Candidates with interdisciplinary knowledge including ocean and benthic biogeochemistry, intertidal and shallow ecosystem dynamics, data processing in benthic ecosystems and specific skills in the major techniques used for sediment-water flux measurements are particularly encouraged to apply.

The applicant should have a PhD in Marine Science or Environmental sciences with a strong background, publications in international journals and ability to write grant proposals.

The candidates should also document or justify their competence in oral and written English. We are particularly looking for a candidate with a positive attitude, who can think creatively and critically, and who can work independently and consistently on the research project.

He/she should also enjoy interdisciplinary research and take keen interest in field measurements, learning and working in teams.

Evaluation of the applicant will be based on documented material, including presentation of academic work, experience, and other related skills.

The Postdoc will join the Laboratory of Oceanography and Geosciences as a researcher in the field of Marine Biogeochemistry.

Further information about the Laboratory can be found at: <http://log.cnrs.fr/>

Further information about the position can be obtained from Professor Lionel Denis:

Tel. +33 (0)321992904, Email: [Lionel.denis@univ-lille.fr](mailto:Lionel.denis@univ-lille.fr)

#### Terms of employment:

The appointment of the Postdoc will be made according to the guidelines of the University of Lille, following the general rules of french Universities.

#### How to apply?

Applicants should send via E-mail (in a single pdf file) their extended Curriculum Vitae with publications list and other scientific works, professional degrees..., as well as a letter of interest at the following E-mail address: [Lionel.denis@univ-lille.fr](mailto:Lionel.denis@univ-lille.fr)

Additional reference letters would be appreciated.

