

PHD STUDENT “BIOLOGICAL SOURCES AND GENETIC CONTROLS OF THE PALEOTEMPERATURE PROXY TEX₈₆”

The department of Marine Microbiology and Biogeochemistry (MMB; department chair prof. dr. J.S. Sinninghe Damsté), is looking for a highly motivated PhD student with a background in organic geochemistry, microbial ecology, molecular biology, and/or microbial physiology to help us unravel the biological sources and genetic controls of the paleotemperature proxy TEX₈₆.

LOCATION: ROYAL NIOZ TEXEL (THE NETHERLANDS)

VACANCY ID: 2017-061

CLOSING DATE: AUGUST 30th, 2017

THE RESEARCH

The research of the Department of Marine Microbiology and Biogeochemistry (MMB) has a long history of studying lipid biomarkers of marine microbes, both in the present and in the past. Our research focuses on fossilized lipid remnants. Using these microbes, we try to decipher past climate changes and reconstruct microbial evolution.

The researchers in the MMB department also study the identity, activity and physiology of marine microbes (algae, bacteria, archaea, and viruses), their interactions, and their consequences for biogeochemical cycling in a variety of marine environments, varying from tidal flats and coral reefs to the deep ocean.

The department is equipped with state-of-the-art laboratories and analytical equipment and has an excellent level of technical support.

THE PROJECT

Climate models for future climate change are tested using climate data from the past, which is obtained using proxies, for example those based on microbial lipid biomarkers. The paleotemperature proxy TEX₈₆, based on lipids of marine *Thaumarchaeota*, has been widely used to reconstruct sea surface temperatures. However, despite its successful application, there are still substantial uncertainties regarding the biological sources and genetic controls on the production of these lipids.

To further develop this proxy, we need to uncover which archaeal sources are contributing to the lipid pool, and also how the ability to synthesize the lipid was acquired through evolution. All to determine if the biology of the current producer can be extrapolated to the ancestor and how far back in time we can apply TEX₈₆.

For this, we will determine the archaeal diversity and membrane lipids produced in suspended particulate matter from different marine environmental settings in which we expect to find different archaea. Different methodological approaches will be applied, including membrane lipid analysis, lab incubations using stable isotopes, and (meta)genomic analyses.

THE CANDIDATE

Are you a highly motivated student with a background in organic geochemistry, microbial ecology, molecular biology, and/or microbial physiology? Are you willing to learn and apply cross-disciplinary approaches? Send us your application and join our research team.

As our PhD student, you will be trained in very diverse methodologies ranging from lipid analysis, bioinformatics to microbial ecology methods. Field work will be also involved. Due to the international character of the research group, excellent English communication skills are expected.

CONDITIONS

We are offering a fulltime position for 4 years, a pension scheme, a yearly 8% vacation allowance, year-end bonus and flexible employment conditions. Conditions are based on the Collective Labour Agreement of Research Centres (WVOI). The position will be located on Texel. Cost of relocation and help with housing is provided by the Royal NIOZ.

MORE INFORMATION

For additional information about this vacancy, please contact [dr. Laura Villanueva](#) (research scientist). For additional information about the procedure, please contact [Jolanda Evers](#) (senior HR advisor).