

# Postdoc in Biogeochemistry

## Minerals in the *Plastisphere*

Department of Geosciences and Natural Resource Management - IGN  
Faculty of Science  
University of Copenhagen

Applications are welcome for a two-year Postdoc position at the Department of Geosciences and Natural Resource Management (IGN) at the University of Copenhagen (UCPH). The position is funded by a Carlsberg Foundation Semper Ardens: Accelerate Grant to Associate Professor Nicole Posth on the topic of “Minerals in the Plastisphere: influence on biological interactions and plastic degradation.” The selected candidate will join the Posth Lab focused on Geomicrobiology & Sediment Biogeochemistry established in the Sedimentary Systems Research Group in the Geology Section of IGN. The postdoc’s duties will include research as well as teaching/supervision. The post may also include scientific outreach. Further information on the Department is linked at <http://www.science.ku.dk/english/about-the-faculty/organisation/>

The position is open from Autumn 2023.

### The project

The introduction of plastic debris into the ocean has created a new ecological niche named the *Plastisphere*. The *Plastisphere* is a complex biofilm constructed of bacteria, fungi, organic debris, minerals, metals, and salts that influences the transport of plastic particles, and harbors colonizers and plastic-degrading microorganisms. The *Plastisphere* forms the interface between plastic and its environment and as such, the complex structure of the *Plastisphere* creates a highly reactive surface. Metals and minerals are formed on the plastic surface or embedded in the biofilm matrix. In aquatic environments, sediment has been identified as a major global plastic sink and the question remains to how the properties of the sediment environment influences the longevity of plastic.

This study will explore whether mineral-plastic interactions come into play for degradation or stability of this pollutant in sediment over time. Using a combination of mineralogical and geo-chemical approaches in the laboratory, the project will probe mineral-influenced plastic degradation; test the role of metals in plastic degradation, simulate plastic diagenesis in sediment, and quantify the end products of reactions across diverse sediment matrices.

### Qualifications and Job requirements

The selected candidate will be highly motivated and able to successfully undertake an interdisciplinary approach to this emerging topic. An aptitude for laboratory work is required. The candidate must have completed their PhD in a relevant discipline; i.e., geochemistry, mineralogy, materials science, polymer science, biogeochemistry, geomicrobiology. The successful candidate should feel comfortable working independently and will carry responsibility for the daily management of their research project in coordination with other members of the group. They will be involved in the training and co-supervision of staff members/students and the position may include

performance of additional duties, such as teaching and outreach. Creativity, curiosity, independent thinking, good communication skills in English, and the ability to work in a team are all central qualities.

The University wishes our staff to reflect the diversity of society and thus welcomes applications from all qualified candidates regardless of personal background.

For further information please contact Nicole Posth, email: [nrep@ign.ku.dk](mailto:nrep@ign.ku.dk)

### **Terms of employment**

The position is covered by the Memorandum on Job Structure for Academic Staff.

Terms of appointment and payment accord to the agreement between the Ministry of Finance and The Danish Confederation of Professional Associations on Academics in the State.

Negotiation for salary supplement is possible.

The application, in English, must be submitted electronically by following:

<https://employment.ku.dk/all-vacancies/?show=159684>

and clicking the grey APPLY NOW button to reach the recruitment interface.

### **The application package should include:**

- A letter of motivation
- Curriculum vitae
- Complete publication list
- Diplomas (Master and PhD degree or equivalent)
- Research plan (~ 1 page) – description of current and future research plans
- Names and contact information of three references

***The deadline for applications is 20. August, 2023, 23:59 GMT +2.***

After the expiry of the deadline for applications, the authorized recruitment manager selects applicants for assessment on the advice of the Interview Committee.

**You can read about the recruitment process at <http://employment.ku.dk/faculty/recruitment-process/>.**

*Part of the International Alliance of Research Universities (IARU), and among Europe's top-ranking universities, the University of Copenhagen promotes research and teaching of the highest international standard. Rich in tradition and modern in outlook, the University gives students and staff the opportunity to cultivate their talent in an ambitious and informal environment. An effective organisation – with good working conditions and a collaborative work culture – creates the ideal framework for a successful academic career.*

**Application due: 8/20/2023**

**Start date: 11/1/2023**

**Category: Faculty and academic positions**

**Workplace: Institut for Geovidenskab og Naturforvaltning**

**Homepage: <http://ign.ku.dk/>**