

## Dr Heiko Moossen

Postdoctoral Research Associate

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### About

Dr Heiko Moossen is an organic geochemist. His interest is the development and application of geochemical biomarkers that are used to reconstruct palaeoclimate.

### Qualifications

2012 - PhD, University of Glasgow

2007 - Dipl. Chem. (Masters) in Pure and Applied Chemistry; University of Oldenburg, Germany

### Biography

Dr Moossen is currently setting up the new Birmingham Molecular Climatology (BMC) laboratory under the leadership of Dr. James Bendle.

After graduating with a Masters in pure and applied chemistry from the University of Oldenburg, Dr Moossen worked in the organic geochemistry unit of the Institute of chemistry and biology of the marine environment (ICBM) setting up the new MAT 253 hydrogen isotope mass spectrometer. He subsequently joined Dr James Bendle at the University of Glasgow where he completed his PhD entitled "Palaeoclimate reconstructions from Arctic and Nordic Shelf Seas: development and application of multiple biomarker proxies" in 2012.

### Teaching

ESCM317 & ESCM437 Palaeoclimates

### Research

Priority research themes are:

- Holocene climate evolution
- High-resolution palaeoclimatology
- Biomarker development

The occurrence and absence of organic biomarkers (geochemical fossils), as well as the ratios of different biomarkers in marine sediments make it possible to reconstruct changes in environmental parameters such as sea surface and air temperature, precipitation and changes in microbial and plant distributions.

Heiko studies the occurrence biomarkers to develop existing, and discover new biomarkers that can be used to study past climate change, as well as studying Holocene climate change.

### Publications

Harada, N., Sato, M., Seki, O., Timmermann, A., **Moossen, H.**, Bendle, J., Nakamura, Y., Kimoto, K., Okazaki, Y., Nagashima, K., Gorbarenko, S.A., Ijiri, A., Nakatsuka, T., Menviel, L., Chikamoto, M.O., Abe-Ouchi, A., Schouten, S., 2012. Sea surface temperature changes in the Okhotsk Sea and adjacent North Pacific during the last glacial maximum and deglaciation. Deep-Sea Research Part II-Topical Studies in Oceanography 61-64, 93-105.

**Moossen, H.**, 2012. Palaeoclimate reconstructions from Arctic and Nordic Shelf Seas: development and application of multiple proxies, School of Geographical and Earth Science. University of Glasgow, Glasgow, p. 202.

**Moossen, H.**, Abell, R., Quillmann, U., Bendle, J., 2013. Holocene changes in marine productivity and terrestrial organic carbon inputs into an Icelandic fjord: Application of molecular and bulk organic proxies. The Holocene 23, 11.

Seki, O., Bendle, J.A., Harada, N., Kobayashi, M., Sawada, K., **Moossen, H.**, Inglis, G.N., Nagao, S., Sakamoto, T., 2014a. Assessment and calibration of TEX86 paleothermometry in the Sea of Okhotsk and sub-polar North Pacific region: Implications for paleoceanography. Progress in Oceanography 126, 254-266.

Seki, O., Mikami, Y., Nagao, S., Bendle, J.A., Nakatsuka, T., Kim, V.I., Shesterkin, V.P., Makinov, A.N., Fukushima, M., **Moossen, H.M.**, Schouten, S., 2014b. Lignin phenols and BIT index distributions in the Amur River and the Sea of Okhotsk: Implications for the source and transport of particulate terrestrial organic matter to the ocean. Progress in Oceanography 126, 146-154.

Vogts, A., **Moossen, H.**, Rommerskirchen, F., Rullkotter, J., 2009. Distribution patterns and stable carbon isotopic composition of alkanes and alkan-1-ols from plant waxes of African rain forest and savanna C3 species. Organic Geochemistry 40, 1037-1054.



