

# Joint winner of the 2017 IAG Young Scientist Award

## Dorothea Macholdt



Dorothea successfully completed her PhD studies at the Max-Planck Institute for Chemistry in Mainz, Germany in May 2017. Her thesis “Interdisciplinary Research on Rock Varnish” combined chemical, biological, geochemical, mineralogical and atmospheric data.

During her research she was involved in developing new techniques for the analysis of atmospheric dust samples and rock varnish, characterising reference materials and conducting portable XRF measurements at sites of historical interest. She has already made substantial contributions to ongoing scientific investigations and is first author of four publications in international journals (see below).

When she is not working hard at her studies, Dorothea enjoys the outdoor life either hiking or cycling.

*Macholdt, D.S., Jochum, K.P., Stoll, B., Weis, U. and Andreae, M.O. (2014). A new technique to determine element amounts down to femtograms in dust using femtosecond laser ablation-inductively coupled plasma-mass spectrometry. Chemical Geology, 383, 123-131.*

*Macholdt, D., Jochum, K., Pöhlker, C., Stoll, B., Weis, U., Weber, B., Müller, M., Kappl, M., Buhre, S., Kilcoyne, A., Weigand, M., Scholz, D., Al-Amri, A.M., Andreae, M.O. (2015). Microanalytical methods for in-situ high-resolution analysis of rock varnish at the micrometer to nanometer scale. Chemical Geology, 411, 57-68.*

*Macholdt, D.S., Jochum, K.P., Wilson, S.A., Otter, L.M., Stoll, B., Weis, U. and Andreae, M.O. (2016). Suitability of Mn-and Fe-Rich Reference Materials for Microanalytical Research. Geostandards and Geoanalytical Research, 40, 493-504.*

*Macholdt, D.S., Jochum, K.P., Pöhlker, C., Arangio, A., Förster, J.D., Stoll, B., Weis, U., Weber, B., Müller, M., Kappl, M., Shiraiwa, M., Kilcoyne, A.L.D., Weigand, M., Scholz, D., Haug, G., and Andreae, M.O. (2017) Characterization and differentiation of rock varnish types from different environments by microanalytical techniques. Chemical Geology, 459, 91-118.*

*Le Thi-Thu Huong, Laura M. Otter, Michael W. Förster, Christoph A. Hauzenberger, Kurt Krenn, Olivier Alard, Dorothea S. Macholdt, Ulrike Weis, Brigitte Stoll and Klaus Peter Jochum. Femtosecond Laser Ablation-ICP-Mass Spectrometry and CHNS Elemental Analyzer Reveal Trace Element Characteristics of Danburite from Mexico, Tanzania, and Vietnam. Minerals 2018, 8(6), 234.*