

Prof. Dr. habil. Georg Büchel

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Angewandte Geologie



Friedrich-Schiller-Universität Jena
Institut für Geowissenschaften
Burgweg 11
07749 Jena

Telefax: +49(0)3641 948622

Research Interests and Areas of Supervision

- Bioremediation
- Rare Earth Elements as natural tracers in (microbial) attenuation during reactive transport in the water phase
- Water-microbe-mineral/rock interfaces
- Hydrogeochemical reactions influenced by microbial processes
- Geo-bio-interactions in remediation
- Hydrological/hydrogeochemical field related investigations
- Groundwater exploration
- Heavy metal mobility in acid mine drainage
- Formation of maar volcanoes
- Maar sediments as archive for the reconstruction of environment

Education and Scientific Career

- 1978 Diploma, Johannes Gutenberg University Mainz
- 1978 - 1984 Scientific Coworker at Applied Geology and Geophysics, Johannes Gutenberg University

Mainz

- 1984 Dr. rer. nat. (summa cum laude), Johannes Gutenberg University Mainz
- 1985 - 1993 Scientific Assistant, Johannes Gutenberg University Mainz
- 1991 Habilitation and venia legendi for Geology, Johannes Gutenberg University Mainz
- 1990 - 1992 Representative of the professorship Applied Geology, Johannes Gutenberg University Mainz
- 1994 - 1995 Representative of the professorship Geology, University of Essen
- Since 1995 Chair for Applied Geology, Friedrich Schiller University Jena

Interdisciplinary Affiliation

- 2006 - 2010 Vice-chair of DFG GRK 1257 "Alteration and element mobility at microbe-mineral interfaces"
- since 2007 Member of the excellence graduate school „Jena School for Microbial Communication“
- since 2007 member of HIGRADE, Helmholtzzentrum of Environmental Research since 2008 member of the DFG “Forschergruppe „ The role of biodiversity for element cycling and trophic interactions: An experimental approach in a grassland community“ project “Influence of plant water relation on ecosystem function and quantification of soil water fluxes for nutrient and carbon budgets” (together with Prof. Attinger)
- since 2009 Member of the BMBF-Project INFLUINS in the research program „Cutting-edge research and innovation in the new federal states of Germany“

Administrative Experience

- since 2007: Senator of the Faculty of Chemistry and Earth Sciences
- 2006-2009 Managing director of the institute of Earth Sciences
- Since 2006 Head of the Institute of Geosciences, Friedrich Schiller University Jena
- Since 2003 Member of the Council of the Friedrich Schiller University Jena
- Since 2003 Member of the editorial board of "Chemie der Erde - Geochemistry"
- 2003 - 2005 Member of the managing committee of the German Geological Society (Deutsche Geologische Gesellschaft)
- 2004 Evaluation of study courses in Earth Sciences for the Ministry of Lower Saxony
- 2002 - 2004 Dean of the Faculty of Chemistry and Earth Sciences, Friedrich Schiller University Jena
- 1999 - 2003 Member of the Council of the Faculty of Chemistry and Earth Sciences of the Friedrich Schiller University Jena

Honours and Awards

Award for the best PhD thesis of the Faculty of Geosciences, Johannes Gutenberg University Mainz

Ten most important publications in international refereed journals

- Büchel G., Merten D. (2009). Geo-Bio-Interactions at heavy-metal-contaminated sites. *Chem. Erde - Geochemistry*, 69, S2, 1-3.
- Grawunder A., Lonschinski M., Merten D., Büchel G. (2009). Distribution and bonding of residual contamination in glacial sediments at the former uranium mining leaching heap of Gessen/Thuringia, Germany. *Chem. Erde - Geochemistry*, 69, S2, 5-19.
- Rödiger T., Sauter M., Büchel G. (2009). Infiltration und Grundwasserströmung in geklüftet-porösen Buntsandsteingrundwasserleitern im Osten des Thüringer Beckens. *Grundwasser*, 14-1, 21-32.
- Schöner A., Noubactep C., Büchel G., Sauter M. (2009). Geochemistry of natural wetlands in former uranium mining sites (eastern Germany) and implications for uranium retention. *Chem. Erde - Geochemistry*, 69, S2, 91-107.
- Pirrung M., Büchel G., Lorenz V., Treutler H.C. (2008). Post-eruptive development of the Ukinrek East Maar since its eruption in 1977 A.D. in the periglacial area of south-west Alaska. *Sedimentology* 55, 305-334.
- Haferburg G., Reinicke M., Merten D., Büchel G., Kothe E., 2006. Microbes adapted to acid mine drainage as source for strains active in retention of aluminum or uranium. *J. Geochem. Explor.* 92, 196-204
- Büchel G., Bergmann H., Ebdon G., Kothe E. (2005). Geomicrobiology in remediation of mine waste. *Chem. Erde - Geochemistry*, 65, S1, 1-5.
- Kothe E., Bergmann H., Büchel G. (2005). Molecular mechanisms in bio-geo-interactions: From a case study to general mechanisms. *Chem. Erde - Geochemistry*, 65, S1, 7-27.
- Carlsson E., Büchel G. (2005). Screening of residual contamination at a former uranium heap leaching site, Thuringia, Germany. *Chem. Erde - Geochemistry*, 65, S1, 75-95.
- Merten D., Geletneky J., Bergmann H., Haferburg G., Kothe E., Büchel G. (2005). Rare earth element patterns: A tool for understanding processes in remediation of acid mine drainage. *Chem. Erde - Geochemistry*, 65, S1, 97-114.