

## Curriculum Vitae – Wolfgang Bach

Date of birth: September 24, 1964  
Place of birth: Dillenburg, Germany  
Nationality: German

Degrees: 1991 Diploma in Mineralogy, Gießen University, Germany  
1996 Ph.D., Gießen University, Germany, *summa cum laude*

Positions: 2006 - Adjunct Scientist, Woods Hole Oceanographic Institution  
2006 - MARUM project leader “hydrothermal vents”  
2005 - Professor of Petrology, University of Bremen  
2003-2005 Associate Scientist, Woods Hole Oceanographic Institution, USA  
1999-2003 Assistant Scientist, Woods Hole Oceanographic Institution, USA  
1996-1999 Postdoctoral Scholar, Woods Hole Oceanographic Institution, USA  
1995-1996 Research Associate, Potsdam University, Germany

Professional Activities 2008 – 2009 Co-chair of Steering Committee IODP New Ventures in Exploring Scientific Targets  
2008 – 2010 Chair of Academic Programs, Geoscience Department  
• 2008 – Member of *Science Steering Committee, Center for Dark Energy Biosphere Investigation*  
2004 – Representative of the InterRidge Deep Earth Sampling Group  
2003 – 2005 Deep Ocean Exploration Research Fellow  
2003 – 2005 Representative of the IODP Science Steering and Evaluation Panel  
2002 – 2005 Member of the Woods Hole Oceanic Institution Marine Operations Committee  
1994 – Participant in six ODP cruises, participant in eight other cruises and co-chief scientist of three  
1991 – Invited speaker/ keynote lecturer at AGU meetings and Goldschmidt conferences; lecturer at RIDGE / InterRidge / ECORD short courses and summer schools

### Peer-reviewed Publications

Hentscher M, Bach W (in revision) Geochemically induced shifts in catabolic energy yields explain past ecological changes of diffuse vents in the East Pacific Rise 9°50'N area In revision, *Geochemical Transactions*

Bach W, Jöns N, Klein F (accepted) Metasomatism of the Ocean Crust. In: Metasomatism and Metamorphism (Harlov D, Austrheim H, editors) *Lecture Notes in Earth Sciences*, Springer

Perner M, Hentscher M, Rychlik N, Seifert R, Strauss H, Bach W (in press) Driving forces behind the biotope structures of low-temperature venting areas at 5°S and 9°S MAR, *Environmental Microbiology Reports* 3, 727-737

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- Bach W, Rosner M, Jöns N, Rausch S, Robinson LF, Paulick H, Erzinger J (2011) Carbonate veins trace seafloor circulation of seawater during uplift of mantle rocks: results from ODP Leg 209. *Earth and Planetary Science Letters* 311: 242-252.
- Petersen JM, Zielinski FU, Pape T, Seifert R, Moraru T, Amann R, Hourdez S, Girguis PR, Wankel SD, Barbe V, Pelletier E, Fink D, Borowski C, Bach W, Dubilier N (2011) Hydrogen is an energy source for hydrothermal vent symbioses. *Nature* 476: 176-180
- Amend JP, McCollom TM, Hentscher M, Bach W (2011) Metabolic Energy for Chemolithoautotrophs in Peridotite-Hosted and Basalt-Hosted Hydrothermal Systems *Geochimica et Cosmochimica Acta* 75, 5736-5748
- John T, Scambelluri M, Frische M, Barnes JD, Bach W (2011) Dehydration of subducting serpentinite: implications for halogen mobility in subductions zones and the deep halogen cycle. *Earth and Planetary Science Letters* 308: 65-76
- Edwards KJ, Glazer BT, Rouxel OJ, Bach W, Emerson D, Davis RE, Toner BM, Chan CS, Tebo BM, Staudigel H, Moyer CL (2011) Ultra-diffuse Hydrothermal Venting Supports Fe-oxidizing Bacteria and Massive Umber Deposition at 5000m off Hawai'i *The ISME Journal: Multidisciplinary Journal of Microbial Ecology* doi:10.1038/ismej.2011.48
- Reeves EP, Seewald JS, Saccocia P, Walsh E, Bach W, Craddock P, Shanks WC, Sylva S, Pichler T, and Rosner M (2011) Geochemistry of hydrothermal fluids from the PACMANUS, Northeast Pual and Vienna Woods vent fields, Manus Basin, Papua New Guinea. *Geochimica et Cosmochimica Acta* 85(4): 1088-1123
- Orcutt BN, Bach, W, Becker K, Fisher AT, Hentscher M, Toner BM, Wheat CG, and Edwards KJ (2010) Colonization of subsurface microbial observatories deployed in young ocean crust *The ISME Journal: Multidisciplinary Journal of Microbial Ecology* doi:10.1038/ismej.2010.157
- Himmler T, Bach W, Bohrmann G, and Peckmann J (2010) Rare earth elements in authigenic methane-seep carbonates as tracers for fluid composition during early diagenesis. *Chemical Geology* 227: 126-136.
- Craddock PR, and Bach W (2010) Insights to Magmatic–Hydrothermal Processes in the Manus back–arc Basin as Recorded by Anhydrite *Geochimica et Cosmochimica Acta* 74(19): 5514-5536
- Craddock PR, Bach W, Seewald JS, Rouxel OJ, Reeves E, and Tivey MK (2010) Rare Earth Element Abundances in Hydrothermal Fluids from the Manus Basin, Papua New Guinea: Indicators of Sub-seafloor Hydrothermal Processes in Back-Arc Basins. *Geochimica et Cosmochimica Acta* 74(19): 5494-5513
- Jöns N, Bach W, and Klein F (2010) Magmatic influence on reaction paths and element transport during serpentinization. *Chemical Geology* 274: 196-211
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- Santelli CM, Banerjee N, Bach W, and Edwards KJ (2010) Tapping the Subsurface Ocean Crust Biosphere: Low Biomass and Drilling-Related Contamination Calls for Improved Quality Controls. *Geomicrobiology Journal* 27: 158-169
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- Perner M., Bach W, Hentscher M., Koschinsky A, Garbe-Schönberg D, Strauss H, and Streit WR (2009) Short-term microbial and physico-chemical variability in low-temperature hydrothermal fluids near 5°S on the Mid-Atlantic Ridge, *Environmental Microbiology* 11 (10): 2526-254
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### **Outreach publications**

Bach W. (2008) Mikrobiologie: Basalt nährt Bakterien, *Spektrum der Wissenschaft*: September 2008, 16-17.

Bach W (2007) Submarine Hydrothermalquellen: Treffpunkte von Geologie, Geochemie und Biologie. *Geowissenschaftliche Mitteilungen*: 27, 6-14.

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