Curriculum Vitae

Anozie Ebigbo

Address

Geothermal Energy & Geofluids, Institute of Geophysics, Sonneggstrasse 5, CH-8092 Zurich Switzerland
E-mail: ebigbo@erdw.ethz.ch *Phone:* +41 44 632 08 13 *ORCID ID:* orcid.org/0000-0003-3972-3786

Education

2005–2009 Doctorate ("Dr.-Ing."): Civil and Environmental Engineering, University of Stuttgart

2000–2005 Higher education ("Dipl.-Ing."): Civil Engineering, University of Stuttgart

Work Experience

since 2016 Oberassistent, Geothermal Energy and Geofluids, Institute of Geophysics, Department of Earth Sciences, ETH Zürich

2016–2017 Academic Visitorr, Rock Mechanics, Department of Earth Science and Engineering, Imperial College London

2015–2016 Postdoctoral Researcher, Rock Mechanics, Department of Earth Science and Engineering, Imperial College London

2012–2014 Postdoctoral Researcher, Institute of Applied Geophysics and Geothermal Energy, E.ON Energy Research Center, RWTH Aachen University

2011–2012 Postdoctoral Researcher, GeoResources Laboratory, University of Lorraine, Nancy

2009–2011 Postdoctoral Researcher, Department of Hydromechanics and Modelling of Hydrosystems, University of Stuttgart

2005–2009 Research and Teaching Assistant, Department of Hydromechanics and Modelling of Hydrosystems, University of Stuttgart

1999–2000 Community service ("Zivildienst") at Filderklinik, Filderstadt

Peer-Reviewed Publications

[1] Büsing, H., Vogt, C., **Ebigbo, A.**, and Klitzsch, N. (**2017**). Numerical study on CO_2 leakage detection using electrical streaming potential (SP) data. *Water Resources Research*, **53**(1), 455-469.

[2] Niederau, J., **Ebigbo, A.**, Marquart, G., Arnold, J., and Clauser, C. (2017). On the impact of spatial heterogeneity in permeability on the development of a free convection system in the Perth Basin, Australia. *Geothermics*, **66**, 119–133.

[3] Qin, C.-Z., Hassanizadeh, S. M., and **Ebigbo, A.** (2016). Pore-network modeling of microbially induced calcium carbonate precipitation (MICP): Insight into scale dependence of biogeochemical reaction rates. *Water Resources Research*, **52**(11), 8794–8810.

[4] Hommel, J., Lauchnor, E., Gerlach, R., Cunningham, A. B., **Ebigbo, A.**, Helmig, R., and Class, H. (2016). Investigating the influence of the initial biomass distribution and injection strategies on biofilm-mediated calcite precipitation in porous media. *Trasnport in Porous Media*, **114**(2), 557–579.

[5] **Ebigbo, A.**, Lang, P. S., Paluszny, A., and Zimmerman, R. W. (2016). Inclusion-based effective medium models for the permeability of a 3D fractured rock mass. *Transport in Porous Media*, **113**(1), 137–158.

[6] **Ebigbo, A.**, Niederau, J., Marquart, G., Dini, I., Thorwart, M., Rabbel, W., Pechnig, R., Bertani, R., and Clauser, C. (2016). Influence of depth, temperature, and structure of a crustal heat source on the geothermal reservoirs of Tuscany: numerical modelling and sensitivity study. *Geothermal Energy*, **4**(5).

[7] Seidler, R., Padalkina, K, Bücker, H. M., **Ebigbo, A.**, Herty, M, Marquart, G., and Niederau, J. (2016). Optimal experimental design for reservoir property estimates in geothermal exploration. *Computational Geomechanics*, **20**(2), 375–383.

[8] Hommel, J., Lauchnor, E., Phillips, A., Gerlach, R., Cunningham, A. B., Helmig, R., **Ebigbo, A.**, and Class, H. (2015). A revised model for microbially induced calcite precipitation: Improvements and new insights based on recent experiments. *Water Resources Research*, **51**(5), 3695–3715.

[9] **Ebigbo, A.**, Golfier, F., and Quintard, M. (2013). A coupled, pore-scale model for methanogenic microbial activity in underground hydrogen storage. *Advances in Water Resources*, **61**, 74–85.

[10] Lange, T., Sauter, M., Heitfeld, M., Schetelig, K., Brosig, K., Jahnke, W., Kissinger, A., Helmig, R., **Ebigbo, A.**, and Class, H. (2013). Hydraulic fracturing in unconventional gas reservoirs: risks in the geological system, part 1. *Environmental Earth Sciences*, **70**(8), 3839–3853.

[11] Kissinger, A., Helmig, R., **Ebigbo, A.**, Class, H., Lange, T., Sauter, M., Heitfeld, M., Klünker, J, and Jahnke, W. (2013). Hydraulic fracturing in unconventional gas reservoirs: risks in the geological system, part 2. *Environmental Earth Sciences*, **70**(8), 3855–3873.

[12] Cunningham, A. B., Lauchnor, E., Eldring, J., Esposito, E., Mitchell, A. C., Gerlach, R., Phillips, A. J., **Ebigbo, A.**, and Spangler, L. H. (2013). Abandoned well CO_2 leakage mitigation using biologically induced mineralization: current progress and future directions. *Greenhouse Gases: Science & Technology*, **3**, 40–49.

[13] Helmig, R., Flemisch, B., Wolff, M., **Ebigbo, A.**, and Class. H. (2013). Model coupling for multiphase flow in porous media. *Advances in Water Resources*, **51**(7), 52–66.

[14] **Ebigbo, A.**, Phillips, A., Gerlach, R., Helmig, R., Cunningham, A. B., and Class, H. (2012). Darcy-scale modeling of microbially induced carbonate mineral precipitation in sand columns. *Water Resources Research*, **48**(7), W07519.

[15] Skjælaaen, I., **Ebigbo, A.**, Espedal, M., and Helmig, R. (2010). A model for transport of hydrogen sulfide in oil- and water-saturated porous media. *Computing and Visualization in Science*, **13**(6), 265–273.

[16] **Ebigbo, A.**, Helmig, R., Cunningham, A. B., Class, H., and Gerlach, R. (2010). Modelling biofilm growth in the presence of carbon dioxide and water flow in the subsurface. *Advances in Water Resources*, **33**(7), 762–781.

[17] van Noorden, T. L., Pop, I. S., **Ebigbo, A.**, and Helmig, R. (2010). An upscaled model for biofilm growth in a thin strip. *Water Resources Research*, **46**(6), W06505.

[18] Class, H., **Ebigbo, A.**, Helmig, R., Dahle, H. K., Nordbotten, J. M., Celia, M. A., Audigane, P., Darcis, M., Ennis-King, J., Fan, Y., Flemisch, B., Gasda, S. E., Jin, M., Krug, S., Labregere, D., Beni, A. N., Pawar, R. J., Sbai, A., Thomas, S. G., Trenty, L., and Wei, L. (2009). A benchmark study on problems related to CO_2 storage in geologic formations. *Computational Geosciences*, **13**(4, Sp. Iss. SI), 409–434.

[19] Kopp, A., **Ebigbo, A.**, Bielinski, A., Class, H., and Helmig, R. (2009). *Numerical simulation of temperature changes caused by CO_2 injection in geological reservoirs*, volume 59 of *AAPG Studies in Geology*, chapter 26, pages 439–456.

[20] **Ebigbo, A.**, Class, H., and Helmig, R. (2007). CO_2 leakage through an abandoned well: problem-oriented benchmarks. *Computational Geosciences*, **11**(2), 103–115.

[21] Class, H., Bielinski, A., Helmig, R., Kopp, A., and **Ebigbo, A.** (2006). Numerical simulation of CO_2 storage in geological formations. *Chemie Ingenieur Technik*, **78**(4), 445–452.

Zurich, 5th July 2017