# Enabling fracking free enhanced geothermics using environmental friendly natural products: a proof of concept

Initiative: "Experiment!" (beendet)

Ausschreibung: Explorative Phase

Bewilligung: 18.12.2019

Laufzeit: 1 Jahre 6 Monate

Projekt-Website: https://www.gmg.ruhr-uni-bochum.de/arbeitsrichtungen/angewandte-geologie/unsere-forschung-0

Natural conditions currently hinder the successful exploitation of geothermal energy in European low-temperature rock formations, even if this energy production is most environmental friendly, CO2-neutral, and continuously available. Geotechnical engineering to overcome these barriers, such as fracking, is emotionally discussed and has no legal acceptance. This hinders the widespread use of geothermics as an energy source. The authors propose a new and green approach by regulating the macroscopic variable of outflow temperature through chemical modification of the flow regime. To his end, the team wants to explore natural chemical compounds as additives to the circulating fluid. The goal is to increase heat transfer efficiency and to slow down its efficiency loss. As a long-term perspective, the construction of geothermal energy plants with a smaller affected area might become possible reducing initial installation costs and enabling more plants in populated area. Smaller plants will also recover more quickly after cooling out.

**Projektbeteiligte**

**Prof. Dr. Tobias Licha**
Universität Bochum
Fakultät für Geowissenschaften
Institut für Geologie, Mineralogie und Geophysik
AG Hydrogeochemie
Bochum

**Dr. Thomas Heinze**
Universität Bochum
Fakultät für Geowissenschaften
Institut für Geolgie, Geophysik und Mineralogie
AG Angewandte Geologie
Bochum

**Open Access-Publikationen**

**The resin sealed column (RESECO) setup for flow-through experiments on solid rocks under high temperature and high pore pressure conditions**