



Prof. Dr.-Ing. U. Nackenhorst

www.ibnm.uni-hannover.de

edited by:
Xuerui Wang

Tel.: +49 (0)511.762-19068

Room: 3408 - 114

E-Mail: xuerui.wang
@ibnm.uni-hannover.de

Master thesis - *Masterarbeit*

for

Vorname Nachname

Student No.: XXXXXXXXX

Thesis received: XX.XX.20XX

Workload: 750 h (25 CP)

Submission of thesis until: XX.XX.20XX

Duration: 6 months

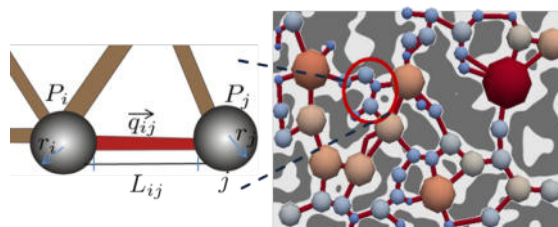
First examiner: Prof. Dr.-Ing. U. Nackenhorst

Supervisor: Xuerui Wang

Second examiner: Prof. Dr.-Ing. Vorname Nachname

Microscale analysis (pore-network simulation) of pore effects on biogeochemical reactions and the associated permeability change

Mineral precipitation induced by biogeochemical reactions provides a sustainable alternative for remediation of contaminated soil and groundwater. As precipitated minerals fill in the pore space and herewith alter the pore structure and reduce permeability, a subsurface barrier for control of contamination can be formed. Current research has suggested that those biogeochemical reactions are usually of high local heterogeneity. Thus, the performance of mineral precipitation is heavily dependent on pore structure. The aim of this master thesis is to analyze the influences of different pore structures on biochemical reactions and permeability evolution based on pore network modeling (PNM). The results of the PNM will then be utilized to calibrate the parameter of a macroscopic model.



Required knowledge (to be caught up in self-study where applicable):

1. This thesis can be supervised in both German and English. Written in English is recommended.
2. Basic knowledge about numerical mathematics, fluid mechanic, programming (e.g. in matlab, python) is required.