

Montan University of Leoben, Austria

Department of Mineral Resources and Petroleum Engineering

Chair of Reservoir Engineering

Two PhD Scholarships focused on Numerical Simulation of CO₂ Migration

The Chair of Reservoir Engineering at the Montan University of Leoben, Austria (MUL, www.unileoben.ac.at), invites applications for two fully-funded 3-year PhD studentships available within a FFG (Austrian research council) and industry-funded research project aimed at developing a new numerical simulator for the large-scale migration of geologically sequestered CO₂. Within the multi-institutional team developing the original multiphysics-in-complex-geometry code CSMP C++ on which the new simulator will be based, the two successful applicants will assume complementary roles:

PhD student 1 will apply the new simulation technique Discrete Event Simulation (DES) to reactive multiphase flow in heterogeneous porous media.

PhD student 2 will focus on the coupling of flow-, mechanical-, and chemical processes accompanying CO₂ migration and trapping. A further already ongoing PhD project already investigates the scale dependence of relevant constitutive relationships. Furthermore, our industrial partner will conduct a CO₂ injection pilot on a depleted oil reservoir serving as a test bed for the new simulator.

Qualifications: MSc or equivalent degree in (project 1): applied mathematics, software engineering or computer science; project 2: MSc in computational physics / fluid- or geo-mechanics, reservoir engineering or groundwater hydrology. Experience in numerical modeling is essential and fluency in C++ highly desirable. The successful applicant will be expected to travel in order to meet with international collaborators, and to present his/her work on international conferences, workshops and meetings with the industry.

Compensation: The salary is 32k Euro per year plus comprehensive medical insurance and other benefits.

University: The MUL is a leading Austrian technical university focused on applied research and engineering. Its excellence in teaching is exemplified, for example, by the 2008 conquest of the Imperial College/AAPG Barrel Award in London, UK. All graduate-level courses are taught in English.

Mineral Resources and Petroleum Engineering: Each year more than 50 students enter the international Masters program of The School of Petroleum Engineering specializing in Reservoir Engineering, Drilling, Production Engineering or Petroleum Economics. The school closely collaborates with the Department of Applied Geosciences including a Chair of Petroleum Geology and the Institute of Geophysics. Together, they cover all aspects of G&G and Exploration and Production.

Southeastern Austria: Leoben is located close to Graz, the second biggest city of Austria. The surrounding southeastern Alps / Styria, Carinthia and northern Italy are popular tourist destinations offering excellent recreational possibilities all year around. The costs of living are comparatively low.

Application process: Applications should consist of a cover letter, statement of career interests, current CV and potential publications. Please name two referees and provide their contact details. The cover letter should also contain the earliest date of commencement.

Please contact Hannelore Bauer, (+43 3842 402 3000, hannelore.bauer@unileoben.ac.at) secretary of the Chair of Reservoir Engineering, Max Tandler Strasse 4, 8700, Leoben, Austria, to obtain application materials and further information.

Closing date: 1/5/2011 *Valuing diversity and committed to equality of opportunity.*