

The world of tomorrow starts today!



Sharing knowledge increases its worth.

That is why we, as a research university with a broad focus, consciously maintain a position at the heart of society. By dealing with current social problems and issues we lay the foundation for the future. We are a leading international research institution that offers high quality educational programmes.

We have a modern campus and always strive for a composition of students and staff that reflects our diverse society.

If you would like to contribute to the world of tomorrow, and are looking for the best environment for your own development, VU University Amsterdam is the place to be.

PhD position geochemical and solute transport modelling for subsurface CO₂ storage f/m

For 1.0 fte

Vacancy number: 1.2010.00264

The Faculty of Earth and Life Sciences (FALW) offers a range of Bachelor and Master programmes. Research at the faculty focuses on the fields of the life sciences, health sciences, environmental sciences and Earth sciences. World-class teaching and cutting-edge research activities go hand in hand. FALW works together with other faculties like medicine, exact sciences, economics, psychology and social sciences. The faculty's research facilities can be categorized as excellent. The faculty's international focus fosters cross-border collaboration, leading to substantially improved quality and greater impact of our research results

The sub-department Hydrology & Geo-Environmental Sciences has a vacancy for a PhD-position for the project: *Geochemical and solute transport modelling of CO₂ storage in saline aquifers and depleted hydrocarbon reservoirs*.

Research project: Injection of CO₂ captured at fossil fuel power plants into saline aquifers and depleted hydrocarbon reservoirs is considered to be a promising measure to reduce emissions of this greenhouse gas to the atmosphere. The aim of this PhD-project is to improve understanding and modelling of geochemical processes during and following injection of CO₂ into geological strata. The research will include modelling studies using existing codes (e.g., TOUGHREACT; PHREEQC), but also aims to investigate proposed improved relationships/approaches and involves their implementation in existing codes. Of special interest to the current project are (i) geochemical implications of injecting gas mixtures rather than pure CO₂ (ii) the roles of antecedent brine, mineral composition and heterogeneity of the formation (iii) pressure and temperature influences (iv) consistent species partitioning and transfer among fluid-gas-mineral phases. Model results are aimed to support storage projects that are being developed in The Netherlands in the framework of CATO-2, the Dutch National Carbon Capture and Storage (CCS) programme (<http://www.co2-cato2.nl>). Model development and application to field sites and laboratory experimental studies will be done in collaboration with CATO-2 partners at TU Delft, Utrecht University and TNO.

Tasks

The PhD student is expected to:

- conduct scientific research as detailed above and write a PhD-thesis;
- disseminate results through scientific publication and presentation at conferences;
- collaborate/communicate with team members at partner institutes;
- contribute to internal reporting regarding results within CATO-2;
- provide assistance with supervising MSc-student projects.



Requirements

- An academic MSc degree in a relevant field (hydrogeology, geochemistry or similar);
- knowledge of hydrochemistry is considered important;
- familiarity/affinity/experience with the following are considered assets: (multi-phase) flow and reactive transport modelling; scientific programming, numerical techniques, thermodynamics of gas-water systems;
- proficiency in both written and spoken English;
- good communication skills and ability to work in a team

Further particulars

The appointment will be initially for 1 year. After satisfactory evaluation of the initial appointment, it can be extended for a total duration of 4 years. You can find information about our excellent fringe benefits of employment at www.workingatvu.nl. Starting date: the sooner the better.

Salary

The salary will be in accordance with university regulations for academic personnel, and amounts € 2.042,- gross per month in the first year up to € 2.612,- in the fourth year (salary scale 85) based on a full-time employment.

Information

For additional information please contact: dr. H. Kooi or dr. B.M. van Breukelen

Phone number +31 (0)20 5987283

E-mail: henk.kooi@falw.vu.nl or boris.van.breukelen@falw.vu.nl

Application

Applicants are requested to write a letter in which they describe their abilities and motivation, accompanied by a curriculum vitae and at least one academic reference. Written applications should be sent before 7 November 2010 to: the VU University Amsterdam, Faculty of Earth and Life Sciences, attn. Dr. J.M.R.M. Neutelings, De Boelelaan 1085, 1081 HV Amsterdam, The Netherlands. It is also possible to apply by e-mail to: falw-vacatures@falw.vu.nl.

Please mention the vacancy number in the e-mail header or at the top of your letter and on the envelope.

Any other correspondence in response to this advertisement will not be dealt with.