

**TEXAS A&M UNIVERSITY AT QATAR, www.qatar.tamu.edu
CHEMICAL ENGINEERING PROGRAM****Post-doctoral position available**

The Chemical Engineering Program of Texas A&M University at Qatar has an immediate opening for a post-doctoral research associate to work on the project entitled “Development and Validation of Molecular-Based Models for the Prediction of Thermodynamic and Transport Properties of CO₂ – Brine Mixtures”.

Emissions of long-lived greenhouse gases (GHGs) are a major driver of climate change. CO₂ is the most important GHG, accounting for 56.6% of the total annual GHG emissions. One of the most prominent strategies to lower CO₂ emissions currently under investigation is carbon capture and sequestration. Qatar is in the forefront of supporting new technologies and political actions toward reduction of GHGs and combating global warming. In November 2012, the country hosted the UN Climate Change Conference.

The most important mixture for carbon sequestration is CO₂ – H₂O – NaCl, a highly non-ideal mixture from the physicochemical point of view, due to the strong intermolecular interactions between like and unlike molecules. This project focuses on generating and validating molecular-based models and methodologies to allow for reliable prediction of the thermodynamic and transport properties of CO₂ – brine mixtures over a broad range of temperatures and pressures relevant for geological storage.

An ideal candidate is expected to have:

- A PhD degree in Chemical Engineering, Physics or Physical Chemistry with emphasis in molecular thermodynamics or molecular simulation (Monte Carlo and/or Molecular Dynamics methods),
- Excellent programming skills in Fortran or C / C++,
- A proven track record of successfully delivering complex software development projects,
- Strong cross-platform development skills (Linux, Windows) using modern toolkits. Appreciation for open-source development tools is a plus,
- Good interpersonal communication skills.

The position is based in Doha, Qatar, under the supervision of Professor Ioannis Economou. The post-doctoral fellow is expected to be involved in teaching and other educational activities, including supervision of senior undergraduate and graduate students.

The project involves collaboration between Texas A&M University at Qatar and Princeton University in the US. The post-doctoral research associate is expected to spend a significant amount of his/her time in the group of Professor Athanassios Panagiotopoulos at Princeton University.

The position is available immediately, for an initial period of one year that can be extended to a second year, based on progress. Salary depends on qualifications and previous experience and is in the range of USD 3,000 – 4,000 monthly. In addition, housing and health insurance will be provided by the University.

Interested candidates should contact Professor Ioannis Economou at ioannis.economou@qatar.tamu.edu. The complete application should include a detailed CV, 3 suggested names for letters of reference, and copies of undergraduate and graduate transcripts.