The Center for Negative Carbon Emissions within the Ira A. Fulton Schools of Engineering at Arizona State University seeks applicants for a postdoctoral position in the field of computational modeling. We are seeking an intelligent and motivated postdoctoral associate that will assist in a funded project sponsored by the Shell Long Range Research program. Appointments are one-year terms, with a possibility of renewal for subsequent one-year terms. It is expected that this position will be two one-year terms. This position will start the spring of 2019, with the start date flexible. Salary and benefits are competitive. Women and minorities are encouraged to apply.

The grant will focus on developing and applying new analytic techniques for characterizing sorbent materials for direct removal of carbon dioxide from the air. Specifically, the postdoctoral researcher will work, as part of a team and under the guidance of Professor Klaus Lackner, on a modeling effort which will integrate over different scales to study large passive CO2 collectors, by taking dynamics and behavior of sorbent materials, of small scale air filters and use them in aerodynamic models of full scale installations. The research will consider different shapes, different sorbents and different regeneration strategies and model the complex behavior under realistic ambient conditions. The work will help in developing collector designs that can operate at low wind speeds while successfully managing the forces present at high wind speeds. This work is a natural extension of the smaller scale work, as modeling the interface between sorbent and air will require a microscopic level understanding, but the aerodynamics modeling adds a new component to the research.

The work will advance the science of air capture sorbents and develop experimental techniques for the analysis of collector designs. Publication of results is expected. Day to day research will include:

- Provide nano-scale and macroscopic scale models.
- Perform computational fluid dynamics calculations.
- Provide comparative analysis of the behaviors of micro to macro scaled air capture systems based on model performance.
- Assist in the preparation of a technoeconomic analysis.
- Provide validation tools for models.
- Provide documentation for all models developed.
- Provide reports of model performance and comparisons with real world system performance.

The postdoctoral associate will work in a group/team environment utilizing standard engineering and analytical tools including but not limited to: computer workstation/laptop and associated computer/technology equipment. Extended periods of sitting, keyboarding and design analysis. Fabrication of equipment may require the use of hand and power tools. Experimental lab work requires familiarity with general chemistry equipment and minor field work.

**Required qualifications:**

- PhD degree in mechanical or chemical engineering or related field.
- C, C++ programming experience required.
• Extensive knowledge of fluid dynamics.
• Wide experience in laboratory and analytical instruments and their operation.

Desired qualifications:
• Proficient in Microsoft Word, Excel spreadsheets, CAD drawing programs and laboratory software.
• Effective verbal and written communication skills (English)
• Must be an independent, creative, organized individual and capable of generating reports.

To apply:
Please submit a single PDF file to allen.wright@asu.edu that includes:
• Current CV
• Statement describing research interests
• Contact information for three references

NOTE: In the email subject line please include: “CNCE application” so we can easily find your application materials.

Review of applications will begin November 25, 2018 and will continue to be reviewed weekly until the position is filled.

Arizona State University is a VEVRAA Federal Contractor and an Equal Opportunity/Affirmative Action Employer. All qualified applicants will be considered without regard to race, color, sex, religion, national origin, disability, protected veteran status, or any other basis protected by law. See ASU’s full non-discrimination statement (ACD 401) and the Title IX statement.

ASU offers applicants an opportunity to voluntarily disclose information for the University’s affirmative action plan; applicants may complete an EEO survey for the position they are applying for online.

Information you’ll need to complete the survey:
Job Title: Post Doctoral Researcher
Department Name: Sustainable Engineering and the Built Environment
Job number: 12620