

Postdoctoral Fellows or Research Associates
Geochemistry, Chemistry, Chemical Engineering, Mineralogy, Natural
Materials Surface Science, Geostatistics or Physics

CO₂ conversion to solids: Transforming waste to new, valuable products

Technical University of Denmark

We are developing a fast, cheap, environmentally friendly way to mineralise CO₂, to make stable, useful products. We invite enthusiastic applicants to join our team.

We are building a cross disciplinary research group and will hire 3 or 4 **Postdoctoral Fellows or Research Associates**, with expertise in **geochemistry, chemistry, chemical engineering, mineralogy, natural materials surfac science, geostatistics or physics**.

We are running several projects in parallel, ranging from fundamental investigations of mineral-water-gas properties, through developing predictive models and new experimental methods and instrumentation, to design creative and cost effective CO₂ trapping processes. The need is urgent, the task is challenging and a multidisciplinary approach is essential - so our group consists of highly motivated scientists and engineers, including chemists, physicists, nanoscientists, geoscientists and engineers. Our group includes members at all academic levels, from bachelor students to experienced scientists and engineers.

Our goals are to develop a local method for mineralising CO₂, to convert it back to solid, where it will remain stable on the long term. Even with the very best alternative energy sources and conversion of CO₂ into products, current air and ocean CO₂ levels will need 1,000 to 10,000 years to return to preindustrial levels. To reduce climate change and ocean acidification, CO₂ must be converted to solid and put back into the Earth, where it came from in the first place.

Responsibilities and qualifications

The job

We expect that your background will contribute to the efforts of our cross disciplinary team, for whom the aim is to understand solid-fluid (water and gas) interactions of natural materials and the effect of organic compounds on them. The team merges data from traditional techniques with results from state-of-the-art, ultrahigh resolution instruments and modelling at scales ranging from atoms to meters. Our goals are to gain very fundamental, new knowledge about how nature works and to apply it in a reactor, to convert CO₂ and waste solids to a valuable product for use in new, low CO₂ construction materials and to form a company.

We are looking for expertise in the following topics:

Water-mineral interaction
Surface/interface chemistry/physics
X-ray photoelectron spectroscopy
Geochemical speciation modelling
Organic chemistry
Particle characterisation
Scanning electron, transmission electron microscopy
Atomic force microscopy and related techniques
Molecular modelling: density functional theory, molecular dynamics
Geostatistics
X-ray diffraction

Our expectations of you

We are looking for curious, enthusiastic colleagues who have an interest in nature, enjoy solving problems and working together, to meet the projects' goals. We expect you to have a strong background in fluid-mineral interaction.

Flexibility is essential. We are looking for a team player who can also work independently, who is motivated to help make, and be part of, a dynamic research environment and who has a positive, supportive and creative outlook. Good communication and personal interaction skills and fluent English are essential.

We offer

DTU is a leading technical university, globally recognised for excellence in its research, education, innovation and scientific advice. We offer a rewarding and challenging job in an international setting. We strive for academic excellence in an environment characterized by collegial respect and academic freedom tempered by responsibility. The CO₂ projects unite researchers from several DTU departments as well as national and international researchers from a number of fields. The atmosphere in the research group is friendly and supportive, allowing us to produce groundbreaking results, essential for society. Our aim at a startup company is well supported by DTU's focus on technology for people.

Salary and terms of employment

Appointment will be based on the collective agreement with the Danish Confederation of Professional Associations. Salary will be determined and agreed upon with the relevant union.

The position is full time and starts as soon as possible but we are prepared to wait for the right candidate. The initial period of employment is 2 years. You can read more about career paths at www.dtu.dk/english/about/job-and-career/working-at-dtu/career-paths.

Further information

Further information can be obtained from: Prof. Susan Stipp, stipp@dtu.dk

You can read more about DTU at www.dtu.dk

If you are applying from abroad, you will find useful information on working in Denmark and at DTU at www.dtu.dk/english/about/job-and-career/moving-to-denmark.

Application procedure

Your complete online application must be submitted no later than **27 July 2026 (23:59 Danish time)**. All interested candidates, irrespective of age, gender, disability, race, religion or ethnic background, are encouraged to apply.

Applications must be submitted as **one PDF file** containing all materials to be given consideration. To apply, please open the jobs link on the DTU home page

https://efzu.fa.em2.oraclecloud.com/hcmUI/CandidateExperience/en/sites/CX_2001/job/7542

Fill out the online application form, and attach **all materials, in one PDF file. The file must include:**

- A cover letter (1 to 2 pages), explaining how you are perfect for the position, using your background as examples;
- Your CV, including employment history, research and teaching experience with dates, scientific highlights, ORCID identifier and other relevant information about you as a scientist and a person;
- Your course list and grades from your university education; a copy of your diploma (BSc/MSc/PhD in English; your own translation is acceptable at application stage; only if you are chosen for the position, do we need an official translation).
- Publication list in proper reference format; mark as many as 3 articles that you consider to represent your best work and write 2 or 3 lines about each of them, describing why you chose these papers (*do not include any articles*)
- The name, email and phone number for 3 personal references (*do not include letters of reference*).

For the benefit of society since 1829 - Developing technology for people.

DTU is one of Europe's leading technical universities. Through research and education at an international top level, we create solutions for the major challenges to society in our time and help secure Europe's global leadership in sustainable technology development. Since Hans Christian Ørsted founded DTU almost 200 years ago, our mission has remained the same: We develop and create value through the natural and technical sciences for the benefit of society. DTU has 13,800 students, 1,600 PhD students, and 6,500 employees. We work in an international environment and have an inclusive, stimulating and informal work culture. DTU has campuses in all parts of Denmark and in Greenland and collaborates with the best universities around the world.