PhD student position focusing on isotopic source fingerprinting of greenhouse gas emissions in South Asia Stockholm

Ref. No. SU FV-0849-20

Apply at the Department of Environmental Science. Closing date: 15 May 2020.

The Department of Environmental Science is one of the biggest departments in the Faculty of Science at Stockholm University. The Department consists of four units with more than 170 researchers, teachers, doctoral students and technical/administrative staff from over 30 countries. Research and teaching focuses on atmospheric science, biogeochemistry, chemical contaminants and (eco)toxicology. As a Ph.D. Student and full employee at the Department of Environmental Science you will be part of a dynamic environment and research with a strong international profile.

Research in the Biogeochemistry Unit focuses on the biogeochemical cycles of carbon, nitrogen and metals in the atmosphere and other reservoirs. The unit has a strong and long-standing research focus on the interlinkages between air pollution and climate change in South Asia, and can offer well-equipped analytical facilities for addressing these questions with isotopic tools and a large, international collaborative network providing access to South Asian field sites.

Project description
Large quantities of methane, carbon monoxide and ozone-depleting gases are emitted from the South Asian region, affecting climate and atmospheric chemistry. Despite much recent research focus, the sources and atmospheric fate of such gases are not well constrained. In this PhD student project, we will investigate key gases using isotopic tools at strategically located regional receptor sites. This allows detailed characterization of sources, atmospheric reactions and overall constraints of their atmospheric lifecycle.

The project will consist of field sampling of gases at strategically located South Asian atmospheric observatories, using both online instrumentation and flask sampling. Collected samples will subsequently be measured for concentrations for a number of different components. A key objective is to use multiple isotope systematics (i.e., $^2$H/$^1$H, $^{18}$C/$^{13}$C/$^{12}$C and $^{18}$O/$^{17}$O/$^{16}$O) to constrain the atmospheric fate of, in particular, methane and carbon monoxide. To achieve this goal, separation and purification of these gases will be an important component of the project. Our group has extensive experience with chemical and isotopic analysis. The project offers ample opportunities for the Ph.D. student to influence direction and approach of research; a detailed research plan will be developed by the Ph.D student together with the Ph.D. advisors.

Our research in this area is primarily financed by the Swedish Research Council (VR).

Qualification requirements
To meet the general entry requirements, the applicant must have completed a second-cycle degree, completed courses equivalent to at least 240 higher education credits, of which 60 credits must be in the second cycle, or have otherwise acquired equivalent knowledge in Sweden or elsewhere.

In order to meet the specific entry requirements, for doctoral studies in Environmental Science, at least 45 of the credits at the second cycle must be in one of the natural sciences (Biology, Chemistry, Earth Sciences, Physics, or Meteorology) including a 30 credits thesis project. The applicant should also have 30 credits in other natural science subjects different from the major.

Assessment criteria
The selection among the eligible candidates will be based on their ability to successfully pursue the research education. Special emphasis is put on the applicant’s knowledge and skills within the subject area, ability to
express her/himself verbally and in writing, analytical aptitude, creativity, initiative and independence, and a capacity for working together with others. The evaluation will be made based on the relevance of past education and experience, grades from previous university courses (in particular at the advanced level), the quality and ambition of the independent project work, references, a cover letter motivating the candidate’s interest, and interviews.

We are seeking a highly motivated person with a strong interest in atmospheric chemistry, climate and perturbations of the environmental system in general. A background in e.g. Atmospheric Science, Environmental Physics-Chemistry- or Engineering would be highly suitable. Collaborative skills and proficiency in English are required.

Admission Regulations for Doctoral Studies at Stockholm University are available at www.su.se/rules and regulations.

Terms of employment
Only a person who will be or has already been admitted to a third-cycle programme may be appointed to a doctoral studentship.

The term of the initial contract may not exceed one year. The employment may be extended for a maximum of two years at a time. However, the total period of employment may not exceed the equivalent of four years of full-time study.

Doctoral students should primarily devote themselves to their own education, but may engage in teaching, research, and administration corresponding to a maximum of 20% of a full-time position.

Please note that admission decisions cannot be appealed.

Stockholm University strives to be a workplace free from discrimination and with equal opportunities for all.

Contact
For more information, please contact Prof. Örjan Gustafsson, telephone: +46 70 324 7317, orjan.gustafsson@aces.su.se.

Union representatives
Ingrid Lander (Saco-S), telephone: +46 708 16 26 64, saco@saco.su.se, Alejandra Pizarro Carrasco (Fackförbundet ST/Lärarförbundet), telephone: +46 8 16 34 89, alejandra@st.su.se, seko@seko.su.se (SEKO), and PhD student representative, doktorandombud@sus.su.se.

Application
Apply for the PhD student position at Stockholm University's recruitment system. It is the responsibility of the applicant to ensure that the application is complete in accordance with the instructions in the advertisement, and that it is submitted before the deadline.

Please include the following information with your application

• Your contact details and personal data
• Your highest degree
• Your language skills
• Contact details for 2–3 references

and, in addition, please include the following documents

• Cover letter motivating your interest for this position
• CV – degrees and other completed courses, work experience, and a list of degree projects/theses
• Degree certificates and grades confirming that you meet the general and specific entry requirements (no more than 6 files)
• Optional letters of recommendation (no more than 6 files)
• Degree projects/theses (no more than 6 files).

The instructions for applicants are available at: Instructions – Applicants.

You are welcome to apply!
Stockholm University contributes to the development of sustainable democratic society through knowledge, enlightenment and the pursuit of truth.

Closing date: 15/05/2020

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