

# Call for 2018 CSC Fellowship Applicants

**Research Field:** Mass spectrometry/Atmospheric aerosol chemistry and air quality

**University:** Karlsruhe Institute of Technology (KIT)

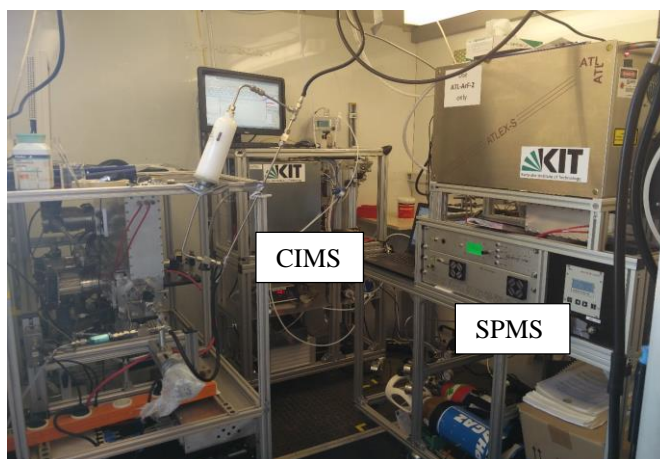
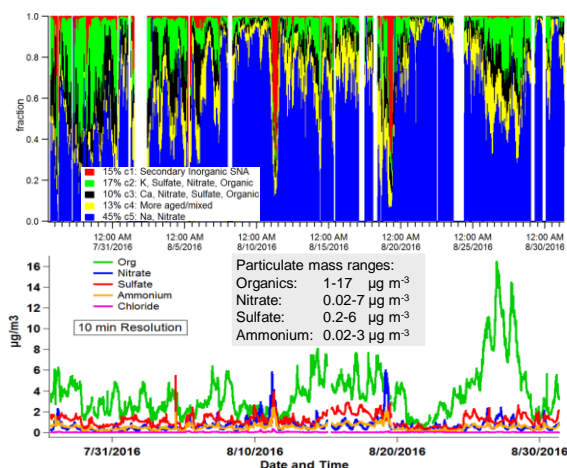
**Department/Institute:** Institute of Meteorology and Climate Research (IMK-AAF)

**Supervising scientist:** Dr. Harald Saathoff/ Prof. Dr. Thomas Leisner

**Position:** PhD Student  Sandwich PhD Student  Postdoc

## Research Area:

The chemical composition of aerosol particles can be explored at high time resolution and various degrees of chemical resolution by means of **mass spectrometry**. This state of the art technique helps to improve our understanding of atmospheric aerosols and their implications for climate and public health. The AIDA facility at IMK-AAF is a renowned **aerosol and cloud chamber (84.5 m<sup>3</sup>)** for the investigation of aerosol and cloud processes, improving our understanding of aerosol chemistry and cloud physics. The recent addition of various mass spectrometers (aerosol mass spectrometer, **HR-TOF-AMS**; single particle mass spectrometer, **SPMS**; chemical ionization mass spectrometer, **FIGAERO-CIMS**) to the suite of aerosol and gas instruments at AIDA allows for insights into chemical processes related to **aerosol particle formation and aging** as well as formation and **composition of cloud condensation nuclei (CCN) and ice nuclei (IN)**. This setup is also used in the **field** for aerosol-cloud interaction studies on high-altitude research stations, at urban locations for air quality **studies**, or more remote environments to investigate interaction of natural and anthropogenic emissions relevant for both gas and particle phase chemical processes. **Laboratory experiments** and further instrument development complement the work carried out in the mass spectrometry lab at IMK-AAF.



Examples of single particle fractions (upper panel, SPMS) and particle mass concentrations (lower panel, AMS) and view into the measurement container with 3 mass spectrometers.

**Specific Requirements:**

- We are looking for a highly motivated student or postdoc with an interest in atmospheric sciences, preferentially atmospheric aerosols, and enthusiasm for experimental work.
- A willingness to solve technical problems and work on technical aspects of the mass spectrometers is preferential.
- The ability to spend several weeks per year in the field is required.
- We are looking for a candidate with a strong commitment to research ethics, teamwork, and a good background in either chemistry, physics, environmental science/engineering or meteorology.

**What can be learned?**

- The role of atmospheric aerosols for air quality and their interaction with clouds.
- Using modern aerosol mass spectrometric tools for addressing these scientific topics.
- Experience in simulation chamber experiments and dedicated field measurements.
- Data analysis employing different software tools (e.g. Matlab, IGOR., etc.).
- You may become member of the KIT Graduate School for Climate and Environment (GRACE) offering further training opportunities and support of conferences or research visits in other countries (<https://www.grace.kit.edu/english/index.php>).

**Work Place:** KIT Campus Nord, Eggenstein-Leopoldshafen, Germany

**Earliest Start:** April 2018 (typically October 2018)

**Language Requirement:** English

**Contact:** Dr. Harald Saathoff ([harald.saathoff@kit.edu](mailto:harald.saathoff@kit.edu)).

You may also ask one of our Chinese students, Wei Huang and Xiaoli Shen, for more information (<http://www.imk-aaf.kit.edu/44.php>).