



Conducting research for a changing society: This is what drives us at Forschungszentrum Jülich. As a member of the Helmholtz Association, we aim to tackle the grand societal challenges of our time and conduct research into the possibilities of a digitized society, a climate-friendly energy system, and a resource-efficient economy. Work together with around 7,500 employees in one of Europe's biggest research centres and help us to shape change!

At the Institute of Climate and Energy Systems - Troposphere ICE-3 we explore the chemistry of the troposphere through atmospheric observations and simulation experiments, performs global observations, and simulates atmospheric chemistry and transport processes by numerical models. (<https://www.fz-juelich.de/en/ice/ice-3>).

As a PhD candidate, you will join the European Research Council (ERC) Starting Grant project CHANEL – Household chemical amplifying urban aerosol pollution, led by Dr. Georgios Gkatzelis at the Institute for Climate and Energy (ICE-3), Forschungszentrum Jülich.

We are offering an interesting

PhD Position - Emerging Urban Emissions and their Impact on Atmospheric Composition

Your Job:

Urban aerosol particles pose one of the greatest global risks to human health. A substantial fraction of these particles is secondary – formed through atmospheric reactions of emitted trace gases. While motor vehicle emissions have been reduced through regulation, attention is shifting to understudied sources such as volatile chemical products (VCPs) and cooking emissions, which are now emerging as key precursors to ozone and secondary organic aerosol (SOA) in urban areas.

CHANEL aims to identify the key volatile organic compounds (VOCs) that lead to SOA and ozone pollution. Using cutting-edge chemical ionization mass spectrometry, the project will perform field measurements across European cities, with a Zeppelin-based airborne platform capturing the “urban breath” of major population centers.

As a PhD student, you will:

- Operate and characterize state-of-the-art mass spectrometers (PTR and

The job will be advertised until the position has been successfully filled. You should therefore submit your application as soon as possible. We look forward to receiving your application via our

Online-Recruitment-System!

Questions about the vacancy?

Get in touch with us by using **our contact form**.

Please note that for technical reasons we cannot accept applications via email. www.fz-juelich.de

NH₄⁺-CIMS; VOCUS) to measure urban VOCs and their oxidation products

- Participate in planning and conducting Zeppelin-based airborne field campaigns over European cities
- Perform VOC flux measurements in 2026 and compare urban emissions across different cities worldwide
- Work with the CHARON aerosol inlet and a FUSION CIMS to analyze the particle-phase organic composition onboard the Zeppelin from 2027 onward
- Analyze large multi-dimensional datasets using statistical tools such as positive matrix factorization (PMF) and cluster analysis
- Investigate the influence of different urban emission sectors on atmospheric composition
- Present your results at international conferences and publish in peer-reviewed journals

Your Profile:

- A Master's degree in chemistry, physics, environmental science, atmospheric science, meteorology, or a related discipline
- Strong experimental skills; experience in analytical chemistry, mass spectrometry, or trace gas measurements is an asset
- Enthusiasm for laboratory and field work
- Willingness to engage in programming and data analysis (preferably Python)
- Excellent communication skills in English, both written and spoken
- Ability to work independently and as part of a collaborative team

Our Offer:

We work on the very latest issues that impact our society and are offering you the chance to actively help in shaping the change! We offer ideal conditions for you to complete your doctoral degree:

- Work at one of Europe's leading interdisciplinary research centers with a vibrant, international atmosphere
- Join the HITEC Graduate School, offering interdisciplinary training, workshops, and international exchange opportunities
- Access to the JuDocS doctoral support center, with tailored workshops, career development, and networking
- Join a dynamic institute hosting over ten atmospheric chemistry research groups, offering rich opportunities for collaboration and learning
- Extensive opportunities for personal development and training, e.g. through an extensive range of training courses; a structured program of continuing education and networking opportunities specifically for doctoral researchers via JuDocS, the Jülich Center for Doctoral Researchers and Supervisors:
<https://www.fz-juelich.de/en/judocs>
- A large, green campus with sports facilities and a supportive research community
- Support services for international employees through the International Advisory Service
- 30 days of annual leave and provision for days off between public holidays and weekends (e.g. between Christmas and New Year)

The position is for a fixed term of 3 years. Pay in line with 67,5% of pay group 13 of the Collective Agreement for the Public Service (TVöD-Bund) and additionally 60 % of a monthly salary as special payment („Christmas bonus“). The monthly salaries in euro can be found on the BMI website: <https://go.fzj.de/bmi.tvloed.entgelt>

Apply now and join us in unraveling the chemical complexity of urban air in Europe's

most exciting airborne platform.

Learn more about doctoral opportunities at Forschungszentrum Jülich:

https://www.fz-juelich.de/gp/Careers_Docs <https://www.fz-juelich.de/en/judocs>

Further information on doctoral degrees at Forschungszentrum Jülich (including its various branch offices) is available at <https://www.fz-juelich.de/en/careers/phd>

We welcome applications from people with diverse backgrounds, e.g. in terms of age, gender, disability, sexual orientation / identity, and social, ethnic and religious origin. A diverse and inclusive working environment with equal opportunities in which everyone can realize their potential is important to us.

Further information on diversity and equal opportunities: <https://go.fzj.de/equality>