# Post Doc Position in the Project STAR– ANR CPJ – Terahertz spectroscopy applied to the research in climate and air quality

**Project:** The project STAR "Spectroscopie Térahertz Appliquée à la Recherche sur le climat et la qualité de l'air" (Terahertz spectroscopy applied to the research in climate and air quality) is funded by the French national agency for research (Agence Nationale de la Recherche ANR). This project focuses on the development of a continuous slit-jet expansion chamber coupled with various millimeter-wave / Terahertz spectrometers to study chemical reaction mechanism relevant to the climate and air quality.

STAR's main proposal integrates cutting-edge research combining the knowledge of millimeter-wave / Terahertz spectroscopy, atmospheric and aerosol chemistry, and chemical kinetics. Key efforts will be put on the investigation of oxidation reaction of organic sulfur molecules such as dimethyl sulfide.

The project is to be carried out at the Laboratoire de Physico-Chimie de l'Atmosphère (LPCA), Université du Littoral Côte d'Opale in Dunkerque, France. This laboratory is a research unit in the research center "Le Pôle Mutations Technologiques et Environnements" (MTE, Technological changes and environment) of the university. The laboratory was created in 1993 with the perspective of developing fundamental and applied research aimed at understanding the natural and anthropogenic disturbances in the environment, mainly in the atmosphere. The laboratory exploits a broad spectrum of skills in physics and chemistry, covering optics, opto-electronics, molecular spectroscopy, atmospheric physics and chemistry, remote sensing and glass chemistry. The research activities include laboratory experimental development, field and remote measurement campaigns, numerical modeling, and theoretical studies. The laboratory possesses excellent working conditions and is equipped with a large platform dedicated to spectroscopic research and access to a large variety of cutting-edge facilities and technological platforms.

**Required Education Level:** Candidates should have a PhD degree in physics, chemistry or relevant fields before the starting date of the position.

**Starting Date:** The starting date of this position is September 1st 2024. The initial term is 1 year, and is possible to be extended depending on funding availability and performance.

**Responsibility:** The post-doctorate scholar is mainly responsible for the instrument development of the ANR-STAR project. It includes the building, trouble-shooting and testing of a high vacuum chamber with a continuous slit jet-expansion source. The scholar is expected to work in a team with other scientists, engineers, technicians, and students to accomplish the project. The scholar will also participate in preliminary spectroscopic measurements and analysis of molecules in the millimeter-wave region.

**Required Skills/Qualifications:**

Research background: The scholar is expected to have a research background in molecular spectroscopy and have experience in instrument development / maintenance. The experience in working with free-jet expansion is highly preferable.

Skills: Instrument development, experience with vacuum systems, programming, data analysis, good interpersonal skills and team-working spirit.

Language: The scholar is required to have fluent written and oral English. Basic knowledge of French or the willingness to learn French is preferable.

**Indicative gross salary:** 2500€ monthly and can be negotiated based on the experience of the scholar.

**Application:** Candidates are invited to submit the application by e-mail to address: luyao.zou@univ-littoral.fr with the subject "Postdoc application – ANR STAR". Application material includes a cover letter, 1–2 pages summary of research activities, the applicant's CV, and the name and email address of at least one referee who could write a recommendation letter.

**Application Deadline:** Candidates are invited to submit the application whenever possible. The application remains open until the position is filled.