Research Associate (PhD or Postdoc position)

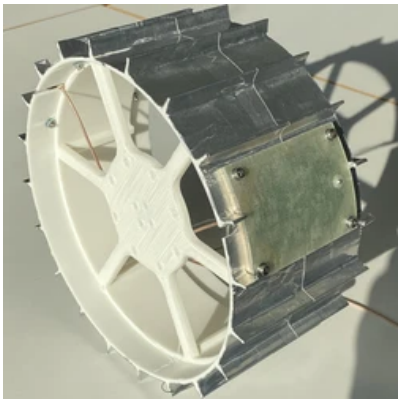
The Chair of Lunar and Planetary Exploration at TUM invites applications for a Research Associate at the level of TV-L E13 (100%, public sector pay scale). The position is dedicated to the ESA-funded Rover Permittivity Sensor. The expected starting date is February 2025, with an initial contract limited to 2 years and a possible extension.

About us

We are strongly dedicated to improving the understanding of the lunar water cycle, with many applications in the field of solar system science and exploration. To this end, we combine both numerical modelling and experimental methods and develop instrumentation to characterise water in situ on the lunar surface. We are currently involved in several flight instrument developments for the European Space Agency, one of which is the Rover Permittivity Sensor (RPS).

Your tasks

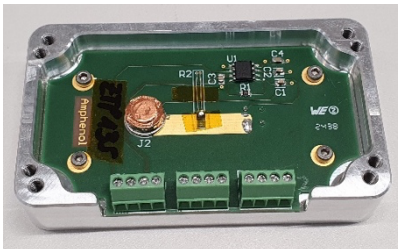
For RPS, we are developing a sensor suite to measure the electrical permittivity and temperature of lunar regolith, supporting the search for water on the Moon. RPS will be part of the Rashid-3 rover by MBRSC (UAE) and is expected to be launched to the Moon in 2028. Your tasks will include instrument development from TRL 5 to 8, test and characterisation of the instrument performance in a relevant environment (thermal-vacuum), scientific analysis and publication of the results, and contributing to the project management. The focus of your tasks will lie on the infrared sensing unit of RPS to determine the temperature of the surface regolith.



Prototype of the Rover Permittivity Sensor instrument on a mock-up of the Rashid 3 wheel (image by TUM/LPE)

Our offer

We offer the opportunity to conduct cutting-edge research in an academic environment at one of Europe's top universities. You will work in a team of highly motivated researchers, in an ambitious project aiming towards a Moon mission. You will have the opportunity to engage in the international research community, present your work at international conferences, and publish in leading journals. Through its Graduate Centre and Talent Factory, TUM supports PhD students and Postdocs by providing a dedicated qualification program, as well as interdisciplinary collaboration and networking opportunities.



Prototype of the Infrared Sensor for the Rover Permittivity Sensor (image by TUM/LPE)

We look for

- a team player with the ability to work independently with an excellent master's (or doctoral) degree in aerospace, mechanical engineering, robotics, applied physics, planetary science, or related fields,
- practical experience in measurement techniques and experimental work on thermal-vacuum systems,
- ideally, experience in infrared temperature sensing,
- proficiency in programming, numerical simulation, and data analysis,
- a strong passion and curiosity for space exploration and solar system science,
- excellent organisational and communicational skills in English (oral/writing).

Application

Please send your CV and relevant university and work certificates in one pdf-file to office.lpe@ed.tum.de.
We look forward to receiving your application as soon as possible and no later than *15 December 2025*.

As an equal opportunity employer, TUM explicitly encourages applications from women and all others who would bring additional diversity dimensions to the university. Preference will be given to disabled candidates with essentially the same qualifications.

As part of your application, you provide personal data to the Technical University of Munich (TUM). Please view our privacy policy on collecting and processing personal data in the course of the application process pursuant to Art. 13 of the General Data Protection Regulation of the European Union (GDPR) at https://portal.mytum.de/kompass/datenschutz/Bewerbung/. By submitting your application, you confirm you have read and understood the data protection information provided by TUM.