

Hier
entsteht
Zukunft!



UNIVERSITÄT
DES
SAARLANDES

Foto: Oliver Dietze



Saarland University is a campus university that is internationally recognized for its strong research programmes. Fostering young academic talent and creating ideal conditions for teaching and research are a core part of the university's mission. As part of the University of the Greater Region, Saarland University enables students and staff to share and exchange knowledge and ideas between disciplines, between universities and across borders. With over 17,000 national and international students, studying more than a hundred different academic disciplines, Saarland University is a diverse and dynamic learning environment. [Saarland University is officially recognized as one of Germany's family-friendly higher-education institutions and with a combined workforce of more than 4,000 it is one of the largest employers in the region.]

The Biophysics Department of the Medical Faculty, Center of Human and Molecular Biology is inviting applications for the following position commencing at the earliest opportunity.

Doctoral Research Position (m/f/x)

Reference number W2856, salary in accordance with the German TV-L salary scale¹, pay grade: E13 TV- L, duration of employment: 3 years, volume of employment: 65 % of standard working time.

Workplace/Department:

The Biophysics Department at the Medical Faculty in Homburg comprises several excellent research groups. The advertised position is associated with the group of Prof. Leticia Prates Roma, which investigates how redox metabolism and reactive oxygen species (ROS) govern cellular adaptation in health and disease, with a particular focus on pancreatic β -cells, metabolic disorders, and cardio-renal complications. We combine advanced redox imaging, metabolic physiology, and disease models to understand how compartment-specific H_2O_2 production and redox signaling determine cell fate, function, and stress responses. Our work bridges redox biochemistry, metabolism, and physiology, emphasizing H_2O_2 as a central regulator of metabolic adaptation. We study how NADPH/NADP⁺ balance, NOX activity, and localized ROS shape signaling networks controlling metabolism, stress resistance, and survival. In β -cells, physiological H_2O_2 fluctuations fine-tune insulin secretion, whereas excessive or NOX2-derived H_2O_2 drives dysfunction under lipotoxic or inflammatory stress. Similar principles extend to cardiac and renal cells, where H_2O_2 mediates adaptive and maladaptive signaling that influences mitochondrial function, calcium handling, and inter-organ crosstalk. To dissect these mechanisms, we have developed a comprehensive

¹ TV-L = collective agreement on remuneration of public sector employees in the German *Länder*

The pay grade assigned to an employee depends on their professional qualifications and the number of years of service. Each pay grade is further subdivided into levels. Entry-level employees with no previous experience will initially be assigned a level 1 rating. After one year at level 1 of the E10 pay grade, an employee will move up to level 2. After a further two years, the employee will move to level 3, etc.

toolbox for quantitative, compartment-resolved redox biology, including genetically encoded biosensors (HyPer7, NAPstar, roGFP2-Orp1, GRX1-roGFP2) and chemogenetic H₂O₂-generation systems. These tools enable real-time visualization and causal testing of redox dynamics in living cells and tissues. Combined with our redox histology approach for fixed samples, they provide unprecedented insight into how spatially and temporally defined redox changes regulate metabolism, calcium signaling, and gene expression across tissues.

Job requirements and responsibilities:

Your role will involve conducting research with international impact in the fields of diabetes, cardio-renal physiology, and redox biology. You will develop your doctoral project in close collaboration with your supervisors within a structured and supportive research environment at Saarland University, with access to interdisciplinary training opportunities, scientific exchange, and career development activities typically provided within the university's doctoral training framework. The position is designed to enable the completion of a PhD within four years or less. Saarland University provides structured doctoral support, including supervision, access to core facilities, methodological training, and opportunities for participation in seminars, workshops, and international conferences. While Saarland University offers flexible working arrangements including partial remote work, regular on-site presence is essential for experimental work. Applicants must either reside within commuting distance of the Homburg campus or be willing to relocate to the area.

Your academic qualifications:

- Completed scientific university studies in Biology, Life Sciences, or a related field (Master's degree)
- Language skills (according to GER): English C1

The successful candidate will also be expected to:

- possess solid foundational laboratory skills, including cell culture, molecular biology, and biochemistry
- isolate and work with murine primary cells or tissue
- have prior experience in the relevant research area, which is considered desirable
- demonstrate good command of Microsoft Office applications
- have excellent English language skills (essential)
- additional proficiency in German is considered advantageous
- work independently with a high degree of responsibility and motivation for self-directed research
- demonstrate strong organizational, planning, and coordination skills
- maintain a reliable, precise, and well-structured working style
- possess excellent teamwork and communication skills, combined with resilience and flexibility
- ideally hold certification for working with laboratory animals, which would be considered an advantage

What we can offer you:

- A flexible work schedule allowing you to balance work and family, among other things the possibility of teleworking
- Secure and future-oriented employment with attractive conditions
- A broad range of further education and professional development programmes (for example language courses)
- An occupational health management model with numerous attractive options, such as our university sports programme
- Supplementary pension scheme (RZVK)
- Discounted tickets on local public transport services ('Job-Ticket' of the saarVV)
- Job bike leasing (JobRad)

We look forward to receiving your **meaningful online application** (in a PDF file) by **31.07.2026** to janina.frisch@uks.eu. Please include the reference number **W2856** in the subject line of the e-mail.

If you have any **questions**, please contact us for assistance. Your contact:

Frau Dr. Janina Frisch
Biophysics, CIPMM, Building 48, 66424 Homburg
Tel.: 06841-1616241

Pay grade classification is based on the particular details of the position held and the extent to which the applicant meets the requirements of the pay grade within the TV-L salary scale. Part-time employment is generally possible.

If you have obtained a foreign university degree, a proof of the equivalence of this degree with a German degree by the Zentralstelle für ausländisches Bildungswesen (ZAB) is needed before hiring. If necessary, please apply for this in time. You can find more information at <https://www.kmk.org/zeugnisbewertung>.

Unfortunately, neither costs for attending an interview at Saarland University nor costs for any certificate evaluation by the ZAB can be reimbursed in principle.

We welcome applications regardless of gender, nationality, ethnic and social origin, religion/belief, disability, age, and sexual orientation and identity. In accordance with its policy of increasing the proportion of women, the University actively encourages applications from women. Applications from severely disabled persons will be given preferential consideration in the event of equal suitability.

When you submit a job application to Saarland University you will be transmitting personal data. [Please refer to our privacy notice for information on how we collect and process personal data in accordance with Art. 13 of the Datenschutz-Grundverordnung](#). By submitting your application you confirm that you have taken note of the information in the Saarland University privacy notice.