



## Universität Potsdam

### Job announcement

Young, modern, and research oriented... the University of Potsdam has firmly established itself within the scientific landscape since its founding in 1991. Nationally and internationally renowned scientists teach and perform research here at Brandenburg's largest university. The University of Potsdam is successful in acquiring third-party funds, delivers outstanding performance in technology and knowledge transfer, and has a very service-oriented administration. With about 20,000 students studying at three campuses – Am Neuen Palais, Griebnitzsee and Golm – the University of Potsdam is a prominent economic factor and engine of development for the region. The University of Potsdam has a total of about 2,750 faculty and staff members and is located in one of Germany's most scenic areas.

innoFSPEC Potsdam, the Innovation Centre (ZIK) for fibre-based Spectroscopy and Sensing, is a joint initiative of the Physical Chemistry Group at the University of Potsdam (UPPC) and the Leibniz Institute for Astrophysics Potsdam (AIP). In the framework of the BMBF funded project NIR-Spectroscopy for the Characterization of light transport in opaque ultra-concentrated dispersions (NIR-CLOUD) UPPC invites applications for a:

### **Academic Staff Member/Postdoctoral Scientist Requisition No.: 219/2018**

The position includes a weekly working time of 40 hours (100 %) and is to be filled preferably from 01.05.2018. The salary is determined by the collective bargaining agreement for public employees in Germany (TV-L 13 Ost). This is a temporary position up to 31.10.2020 in accordance with the Academic Fixed-Term Contract Law (WissZeitVG). The position is suitable for part-time employment.

The research group "Innovative fiber-optical sensing (InFaSe)" within innoFSPEC has set out to investigate fundamental mechanisms of interaction between light and matter, i.e. absorption, scattering and luminescence. A special emphasis is placed on complex materials like hetero-phase systems (emulsions and suspensions) with structures in the nano- to micrometer regime. For that purpose innovative fiber-optical methods are developed allowing for a physical-chemical characterization of such demanding samples. For example, Photon Density Wave (PDW) spectroscopy is used for the independent and absolute quantification of absorption and scattering properties of strongly light scattering materials.

The position aims at the expansion of our competence in the field of the analytical and numerical description of light transport in strongly scattering and weakly absorbing materials like polymer dispersions or emulsions. The main task within the project NIR-CLOUD will be the development of new analytical solutions and numerical methods (e.g. Monte Carlo simulations) for the theoretical description of light transport in these materials.

These tools will be used to investigate substantial influences on the light transport like sample boundaries, inclusions, inhomogeneities etc. and hence to achieve a deeper understanding of experimental findings. Vice versa, experimental results can be used to validate the developed models. Finally, the theoretical models will be used in the analysis of experimental results like PDW spectroscopy to determine independently and absolutely the absorption and scattering properties of the above mentioned materials.

More details about the ZIK innoFSPEC and InFaSe group can be found under <http://www.innofspec.de>.

Candidates should have a **Diploma, Master or PhD in physics (Physik), engineering (Ingenieurwissenschaften), applied mathematics (Angewandte Mathematik)**, or a related discipline, including experience in **one or more** of the following fields:

- Light scattering
- Modelling of radiative transport in strongly scattering materials (MC-simulation, analytical description)
- Programming for modelling and instrument control (e.g. LabView, C++)
- Laser spectroscopy and optical sensing
- Fibre-optical instrumentation and photonics
- Instrumental analytics (particle sizing, refractive index measurements, etc.)
- Radio frequency electronics

All applicants are expected to possess **high interdisciplinary research interest, structured working manner, team spirit**, and a **willingness to travel** (contribution to conferences).

Under the laws of the federal state of Brandenburg, employees under this contract are permitted to dedicate at least 33% of their contract time for their scientific qualification. The University of Potsdam strives to maintain gender balance among its staff. Severely disabled applicants shall receive preference in case of equal qualifications. We expressly invite applications from people with migration backgrounds.

**Applications (including motivation letter, CV, certificates, list of publications and presentations) should be submitted before April 20<sup>th</sup> 2018 to Mrs. Dr. L. Bressel ([bressel@uni-potsdam.de](mailto:bressel@uni-potsdam.de)) in a single pdf file. Submissions later-on are possible, but consideration cannot be guaranteed.**

For further information please contact: Dr. L. Bressel ([bressel@uni-potsdam.de](mailto:bressel@uni-potsdam.de)).

Potsdam, 27.03.2018