# 3 Positions (PhD/PostDoc) at the University of Augsburg (Group Prof. Pietschmann)

We offer **three positions** at the Chair for Inverse Problems/nonlinear PDEs (Prof. Pietschmann) at the University of Augsburg, starting **April 2023.** All PhD positions require a master in mathematics while for the PostDoc position, a PhD is necessary requirement.

1 PhD or PostDoc position (75% (PhD)/100% (PostDoc) German public service tariff scale E 13 TV-L) on

"**Data driven gradient flows**"

The successful candidate will work on a combination of modern formulations of gradient flows with data in order to mitigate possible uncertainties in the gradient flow structure. Depending on the background and interests of the candidate, the project can also include a substantial numerical part. A solid background in analysis, in particular (non-linear) partial differential equations as well as measure theory is appreciated. Knowledge about the theory of (Wasserstein) gradient flows and optimal transport are a plus. The position includes teaching duties.

1 PhD position on (75% German public service tariff scale E 13 TV-L) on

"**Cross-diffusion equations**"

The successful candidate will work on the modelling and analysis of systems of cross-diffusion equations motivated by different application ranging from pedestrian motion to solar cell production. A common feature will be the introduction of additional effects that go beyond the purely diffusive setting. A solid background in analysis, in particular partial differential equations, as well as experience in modelling with PDEs is appreciated. Knowledge of numerical methods for PDEs is a plus. The position includes teaching duties.

1 PhD position on (75% German public service tariff scale E 13 TV-L) on

"**Modelling organic solar cell production via a phase field approach**"

This position is within the newly funded DFG research group (Forschungsgruppe) *Printed & stable Organic Photovoltaics from non-fULlerene AcceptoRs* which is a multidisciplinary project which aims to gain a better understanding of the process of printing organic solar cells. The successful candidate will work on phase field models that describe the formation of electric structure in the cells, taking into account the external influences due to the printing process. A solid background in mathematical modelling and/or phase field models is a plus.

All positions are in the newly funded group Inverse Problems/nonlinear PDEs lead by Prof. Jan-F. Pietschmann. We provide a friendly and open working atmosphere and are looking for ambitious and independent candidates. The group is associated to the Centre for Advanced Analytics and Predictive Sciences (CAAPS), an multidisciplinary centre with the goal of enabling progress and innovation in method development - experimental and theoretical - and in actual applications.

Augsburg University is an equal opportunity employer. Applications of women are strongly encouraged. Disabled persons will be given preference in case of equal qualifications.

Candidates are requested to send their application including

- a curriculum vitae, a description of their scientific interests, publication list (if applicable) and contact details of two references as a single pdf document

in German or in English to **jan-f.pietschmann@uni-a.de** by **February 28, 2023** (later applications will be considered, until the position is filled).

For further inquiries please email to:  jan-f.pietschmann@uni-a.de