

### Research Assistant “Laser speckle simulation”

We are looking for a research assistant (m/f/d) with a Dipl.-Ing. (Univ.) or M.Sc. degree in Computer science, Mechanical engineering, Physics, Mechatronics, Informatics or related field.

### About us

As a globally renowned institute in the field of brewing, beverage, and grain technology, it is our aim to always be at the forefront of scientific research. The development, implementation, and provision of innovative, forward-looking technologies and concepts in these fields are essential core aspects of our work. We believe that excellent research and lateral thinking will create innovative ideas and solutions for tomorrow's industry.

### What we offer

Creative freedom – knowledge development – industrial contacts – young and creative team

### Research topic:

When a scattering medium backscatters monochromatic light, such as laser light, it creates a pattern called speckle pattern. Since this dynamic laser speckle pattern is correlated with the Brownian motion of the scattering particles, the mechanical properties of the material can be achieved by analyzing the temporal fluctuations of laser speckle intensities.

Lattice Boltzmann method (LBM) has been applied in various complex phenomena. In this research position, we will open a new field of application to it, which is to simulate the speckle behavior of backscattered laser lights. This model will be developed on the open-source code, waLBerla, which provides a fast framework for the simulation of fluid flow with the LBM and particle interaction with DEM. Experimental setup and results are provided to build and verify the model.

### Requirements

- You are enthusiastic about tasks of multivariate and statistically based process analysis
- Ability and interest in analytical, creative and interdisciplinary thinking
- High level of initiative and commitment
- Ability to work in a team and communication skills
- Good knowledge of C++ programming
- Knowledge of particle interaction and physics behind it
- Experience with the lattice Boltzmann method
- Completed university degree

This position is compensated in wages according to the German salary structure for public sector employees (TV-L). The option to earn a Ph.D. degree at the Chair of Brewing and Beverage Technology is provided. TUM is an equal opportunity employer. As such, we explicitly encourage applications from women. Applications from disabled persons with essentially the same qualifications will be given preference.

### Application

Please submit your electronic application as a single PDF file and include the reference “Laser speckle” in the subject line. For full consideration, apply no later than **01.04.2020** to:

Lehrstuhl für Brau-und Getränketechnologie  
Weihenstephaner Steig 20  
85354 Freising  
verwaltung@bgt.wzw.tum.de  
www.lbgt.wzw.tum.de

### Note on data protection

As part of your application for a position at the Technical University of Munich (TUM), you transmit personal data. Please note our data protection information according to Art. 13 General Data Protection Regulation (GDPR) on the collection and processing of personal data in context with your application (see <http://go.tum.de/554159>). By submitting your application, you confirm that you have taken note of the TUM's data protection information