





## PhD Position – Chemistry and Chemical Engineering – Chemistry for volumetric 3D Printing

 [Universität Freiburg](http://www.unifreiburg.de)  Freiburg

We offer a PhD Position at the NeptunLab. The NeptunLab is the highly interdisciplinary research group of Prof. Bastian E. Rapp at the Department of Microsystems Technology (IMTEK) at the University of Freiburg. Research interests include the development of novel materials, technologies and processes for structuring materials and industrial applications. The work of the NeptunLab is published in the most important international journals including Lab-on-a-Chip, Advanced Materials, Angewandte Chemie and Nature and has been featured in national and international radio and print media including the BBC, the New York Times and the Discovery Channel.

3D printing has gained much attention in recent years: The concept of forming a three-dimensional object by additive manufacturing offers enormous potential for novel designs, fast concept-to-validation periods and significant reduction in waste materials. Classical 3D printing techniques rely on supporting structures and generation of parts in a layer-by-layer fashion. In this project, special printing resins will be developed, that allow for volumetric printing in the bulk volume. To achieve this, novel material formulations in terms of photochemistry and monomer chemistry will be developed, e.g. materials that only selectively transmit or absorb light. The project aims at versed organic or macromolecular chemists with an exceptionally high amount of motivation and independence who seek an ambitious PhD project. This position will play a key role in an ERC Consolidator Grant which will develop a next-generation, first-of-its-kind tactile displays for visually impaired people. Being a project of high social and scientific relevance, the project and this position thus offers significant potential for developing an academic career as well as high-impact publications.

### Activities and responsibilities

- Chemical synthesis of functionalized reagents and compounds
- Development of novel initiators and monomers
- Synthesis and Compounding of novel material formulations for 3D printing
- Proof of practical use of 3D printing for smart materials and multicomponent printing
- Generation of high resolution structures for microfluidics

### Qualification profile

- Master's degree and Studies in chemistry, chemical engineering or related subjects
- Profound knowledge of Stereolithography and 3D printing, photochemistry and macromolecular chemistry is required
- Knowledge of protecting groups and orthogonal chemistry is beneficial.
- Excellent academic track record
- Excellent English skills in reading and writing
- You should be a team player with ambitions who can conduct research projects independently
- You should be able to structure and document your work properly
- You should be a creative mind, developing your own ideas and willing to go the extra mile to generate outstanding scientific results.

### We offer

- An interdisciplinary work environment with a team of motivated scientists that strive to develop clever solutions for scientific as well as industrial problems
- Well-funded projects with access to excellent state-of-the art infrastructure, generous lab space and scientific equipment
- An aspiring young team with great emphasis on publications and publicity
- A lab structure that promotes the development of the individual members and fosters open-minded scientific discussions
- A strong focus on the career development of the candidate including submitting to and attending the most relevant international conferences and summer schools
- An environment that supports start-up mentality – if your research is industrially applicable and promising, we will move towards commercialization of your solution
- Payment of TV-L 13 75% (full time)
- Depending on the performance of the candidate the PhD degree is generally finished within three years

### Send application to

Please consult the “before you apply” section of our homepage <http://www.neptunlab.org/index.php/open-positions#BeforeYouApply>

Make sure you attach all relevant documents (pdf format preferred)

- Letter of motivation: Why do you apply for this position?
- Curriculum Vitae
- Academic track record (recent grades)
- References

 Vollzeit, Befristete Anstellung  Doktorandenstelle  Aktualisiert am 09.07.2020