The Leibniz Institute for Crystal Growth (IKZ) is a leading research institution in the area of science & technology as well as service & transfer of crystalline materials to enable solutions in society by modern technologies (e.g. artificial intelligence, climate protection, health etc.). Our work covers the full spectrum from basic over applied research up to pre-industrial development, including national and international partners from university, institutes as well as industry. The institute is part of Forschungsverbund Berlin (www.fv-berlin.de) and a member of the Leibniz Association (www.leibniz-gemeinschaft.de). You can find more details at the institute webpage: www.ikz-berlin.de.

We are currently looking for a

**PhD student for Modeling of Multiphysical Processes (m/f/d)**

Modern crystalline materials, that are the basis of innovations in microelectronics or renewable energy, are produced in complex high-temperature processes involving a large variety of physical phenomena. In the NEMOCRYS project (see group “Model experiments” on our homepage), funded by the European Union through the research & innovation program Horizon 2020, we are working on a new generation of multiphysical models for such processes. An innovative experimental platform using model materials provides comprehensive data for the development and validation of new physical models, which is one of the major challenges in crystal growth technology. In our project you will gain unique experience while working in an interdisciplinary team on ground-breaking science shaping the production of the materials of tomorrow.

**Your tasks:**

- Analyze multiphysical phenomena (thermo-, electro- and fluid dynamical aspects) of selected crystal growth processes at IKZ (e.g., floating zone growth of silicon)
- Identify the essential physical models for the description of relevant phenomena
- Implement your models in open source software libraries (e.g., OpenFOAM, Elmer)
- Develop validation strategies using dedicated model experiments based on similarity criteria, perform the necessary trials and measurements
- Publish your results and thus help to develop the next generation of crystal growth models

**Our requirements:**

- MSc or equivalent degree in physical sciences or related discipline with an excellent score
- Solid knowledge in the development and validation of models for complex physical processes
- Excellent capability of scientific work as well as its documentation and presentation
- Practical experience in numerical simulation using finite elements or similar methods
- Skills in programming and scripting languages (e.g., C++, Python)

The position is limited to 3 years, an extension for another year is possible. Payment is according to TVöD (75%) (Treaty for German public service). IKZ is an equal opportunity employer. Therefore, female candidates are encouraged to apply and will be preferred in case of adequate qualification. Among equally qualified applicants preference will be given to disabled candidates.

For information about the project contact: Dr. Kaspars Dadzis, kaspars.dadzis@ikz-berlin.de, Phone +49 30 6392 2830.

**Have we aroused your interest?**

Then apply with a letter of motivation for this project (1–2 pages), curriculum vitae and all relevant certificates. To do so, please go to Job offers/jobs on our homepage and click on this advertisement and then on "Apply online". Please send us your complete application documents this way. Please note that we process all applications as they come in, and currently there is no formal deadline.

**We look forward to receiving your application!**