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 Multi-physics Simulation (m/f/d)

Many modern crystalline materials are produced in complex high-temperature processes involving a large variety of physical phenomena such as heat transfer including radiation and phase change, electromagnetism, melt and gas flows as well as thermal stresses. Within the framework of the highly regarded Starting Grant from the European Research Council (ERC) we are working on a new generation of multiphysical models for such crystal growth processes (see *News* on our webpage). A dedicated experimental platform for model experiments will provide unique data for model validation. In this project you will gain unique experience while working in an interdisciplinary team on groundbreaking science.

Your tasks:

- Analyze heat transfer, electromagnetic aspects, and thermal stresses in selected crystal growth processes at IKZ (e.g., Czochralski growth of silicon)
- Identify physical models and their parameters for the description of all relevant phenomena
- Develop validation strategies using dedicated model experiments based on similarity criteria, perform the necessary trials and measurements
- Implement the models in open source software libraries (e.g., Elmer, OpenFOAM)
- Describe und publish model demonstrators, applications, and benchmark cases

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 Bund (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, E-Mail: 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 by **March 13th 2020**. 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.

We look forward to receiving your application!