

**Leibniz-Institut für Kristallzüchtung im Forschungsverbund Berlin e.V.**

The Leibniz-Institut für Kristallzüchtung (IKZ) is a leading research institution in the field of science & technology as well as service & transfer of crystalline materials. Our goal is to enable solutions for pressing societal challenges (e.g. communication, artificial intelligence, climate protection, health, etc.) through modern electronic & photonic technologies. The work covers the entire spectrum from basic and applied research to pre-industrial development and is carried out in cooperation with national and international partners from universities, academies and industry. The institute is part of the Forschungsverbund Berlin (<https://www.fv-berlin.de/>) and a member of the Leibniz Association (<https://www.leibniz-gemeinschaft.de>). You can find more details on the institute webpage: <https://www.ikz-berlin.de>.

**PhD Student (m/f/d)**

“Kinetic Monte Carlo Simulations for the Solution Growth of Herbertsmithite”

Stadt: Berlin; Beginn: Frühestmöglich; Dauer: 3 Jahre; Vergütung: E 13 TVöD;  
Bewerbungsfrist: 30.11.2024

**Aufgaben**

Recently, it was found that Herbertsmithite exhibits quantum spin liquid properties and thus the growth of high quality crystals became of great interest. At SIMaP (CNRS) in Grenoble crystals are grown from solution and the growth is investigated by in-situ optical microscopy.

In an ANR-DFG French-German joint project we want to investigate the growth kinetics in more detail by advanced in-situ techniques (Grenoble) and numerical simulations of the step growth by means of kinetic Monte Carlo method (IKZ).

At IKZ a kinetic Monte Carlo tool has been developed in the programming language Julia. This allows a very flexible use and extension. In particular the work covers

- developing an appropriate model to represent the main possible processes at the surface,
- extending the KMC tool to cover all necessary features,
- including transport in solution into KMC simulations,
- running simulations and compare to experimental results,
- interacting closely with the PhD student at SIMaP who will perform the experiments with in-situ measurements.

The overall goal is to understand the growth kinetics of herbertsmithite during the growth from solution and to control the morphology of the evolving surface.

**Voraussetzungen**

Requirements

- Master in physics, chemistry, mathematics or related fields
- Knowledge in materials science

- Knowledge of python.

### **Unser Angebot**

What we offer:

The position is funded by the German Science Foundation (DFG). It will be firstly limited to three years, an extension for another year is possible. Payment is according to TVöD Bund (75 %) (Collective agreement for the public sector) including the usual social benefits (30 vacation days in a 5-day week, flexible working hours). The Leibniz-Institut für Kristallzüchtung actively supports a healthy work-life balance and is an equal opportunities employer. There is equality for applicants of all genders. Female candidates are encouraged to apply and will be given preference if suitably qualified. Among equally qualified candidates, preference will be given to candidates with disabilities.

The Leibniz-Institut für Kristallzüchtung actively supports a healthy work-life balance and is an equal opportunities employer. Female candidates are encouraged to apply and will be given preference if suitably qualified. Among equally qualified candidates, preference will be given to candidates with disabilities. IKZ promotes diversity. We welcome every qualified application, regardless of age, belief, disabilities, ethnic origin, gender, nationality, religion, or sexual orientation.

### **Bewerbung**

Have we aroused your interest?

Then apply with a letter of motivation, 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". Applications will be accepted until the position is filled.

Weitere Informationen unter <https://stellenticket.de/189045/LUH/>  
Angebot sichtbar bis 01.12.2024

