

**IFW Dresden e.V.**

The Leibniz Institute for Solid State and Materials Research Dresden e. V. (IFW Dresden) conducts modern materials research on a scientific basis for the development of new and sustainable materials and technologies. The institute employs an average of 500 people from over 40 nations and, in addition to its scientific tasks, is dedicated to promoting young scientists and engineers. Further information at: <http://www.ifw-dresden.de>.

**PhD Position (m/f/d) - Precursor chemistry for MOCVD, ALD, and AS-ALD processes 020-25-3000**

on the following topic: New chemical compounds for atomic-scale selective deposition processes

City: Dresden; Starting Date: 15/04/25; Duration: 1 Year; Remuneration: TV-L 13;  
Reference number: 020-25-3000; Closing date: 28/02/25

**Working field**

The atomic layer processing technologies such as atomic layer deposition (ALD) and its variant area-selective atomic layer deposition (AS-ALD) have major roles to play as higher densities of various material components (thin films) of the devices need to be accommodated at the integration level to enhance the functionality combination and reduce the costs. As the semiconductor device structures continue to decrease in size (from Nano to Angstrom scale), new fabrication methods and processes are necessary to meet the challenges of device fabrication and new chemical precursors and small molecule inhibitors (SMIs) with more efficient and precise properties (volatility, stability, selectivity) need to be developed. The PhD project is focussed on:

- Design, synthesis and development of novel ALD precursors and SMIs for atomic layer processing, (AS-ALD and ALD)
- Implementing, and analysing experiments on both test and preparatory scales; scaling up of SMIs and ALD precursors in gram scale batches for thin film deposition of functional nanostructured materials,
- Characterizing ALD precursors and SMIs via SC-XRD, NMR, FTIR, Thermal Analysis and other analytical methods.

**Requirements**

We are looking for highly motivated candidates (m/f/d) with M.Sc. degree in inorganic chemistry, organometallic or organic chemistry who are interested in carrying out interdisciplinary research. Expertise in synthetic chemistry techniques including (but not limited to): performing chemical reactions under inert gas conditions (Schlenk-line, Glove box etc.). Hands on experience in analysis of organometallic compounds using spectroscopic and spectrometric methods. Excellent skills in presenting scientific results, fluency in written and spoken English, strong ability to survey and assess the scientific literature. We aim to recruit candidates with pronounced initiative, creativity, and ability to work effectively in a team of international researchers with, inorganic chemistry,

materials chemistry and materials science and engineering background.

## What We Offer

- employment in accordance with the collective agreement for the public service of the federal states (TV-L),
- A modern, well-equipped workplace on the campus of the Technische Universität Dresden,
- Flexible, family-friendly working hours,
- 30 days vacation,
- Company pension scheme (VBL),
- Benefits for job ticket/Germany ticket,
- Special annual payment,
- Capital-forming benefits,
- Cooperation agreements with daycare centers to help with childcare shortages,
- Company health management (back training, health day with various offers),
- discounted sports offers from the Dresden University Sports Center,
- job-related further training opportunities and language courses,
- Company restaurant with a variety of breakfast and lunch dishes.

The contract of employment, including remuneration, is based on the collective bargaining law for the public service of the federal states TV-L EG 13 (65 %) with working hours 26h/week. The initial appointment is for one year with the possibility of extension for additional two years based on the performance. The expected start date is April 15th, 2025.

## Application

IFW Dresden strives for a balanced gender ratio in all areas. In science, IFW Dresden would like to increase the proportion of women and therefore explicitly invites suitably qualified female scientists to apply. The application of disabled persons is explicitly welcome.

Please send your application with informative documents (letter of motivation, which describing the research career goals, CV, relevant transcripts, training certificates, and contact details for at least two professional references) exclusively in electronic form and in a PDF file (other formats will not be considered), citing the reference number 020-25-3000, no later than February 28th 2025 to

**[bewerbung@ifw-dresden.de](mailto:bewerbung@ifw-dresden.de)**

If you have further questions about the position, please contact Prof. Dr. Anjana Devi (**[office-ime@ifw-dresden.de](mailto:office-ime@ifw-dresden.de)**).

More information at <https://stellenticket.de/191639/>  
Offer visible until 28/02/25

