IHP GmbH -
Leibniz Institute for High Performance Microelectronics/
Leibniz-Institut für innovative Mikroelektronik

Research Associate (m/f/d): NanoWired Integration and Packaging Coordination

Job-ID: 70410/26 | Department: Technology | Salary: as per tarif (TV-L) | Working Time: 40h/week (part-time work option) | Limitation: initially two years with option of extension | Starting Date: as soon as possible

The IHP – Leibniz Institute for High Performance Microelectronics is a leading research institute in the field of silicon-based semiconductor technologies. The Institute's research focuses on high-frequency and photonic technologies for applications in communication, sensing, and quantum systems. In interdisciplinary teams, we combine cutting-edge fundamental research with practical implementation – from technology and design to system-level solutions. We develop innovative solutions for application areas such as wireless and broadband communication, security, medical technology, industry 4.0, automotive industry, and aerospace. IHP employs approximately 400 people. It operates a pilot line for technological developments and the preparation of high-speed circuits with 0.13/0.25 µm-SiGe-BiCMOS technologies, located in a 1500 m² cleanroom that meets the highest industrial nanotechnology requirements.

Why this role matters

This position sits at the interface of NanoWired-based low-temperature bonding, advanced packaging, sensor integration, characterization, and open design enablement.

You will help translate technically demanding research results into clear requirements, demonstrator concepts, structured engineering input, and reusable ADK-relevant content. In doing so, you will work closely with internal expert teams in ADK, electrical/RF characterization, sensor integration, packaging, and cleanroom processing, as well as with international partners in Taiwan.

The role combines technical coordination and requirements-transfer tasks from the projects BioBond-AL and ODE4EC-DIG, with a focus on NanoWired integration, packaging and integration constraints, demonstrator support, and reusable engineering input for design enablement.

A mandatory part of this role is project-related work in Taiwan with a total duration of 6 months.

Your mission

You will strengthen the technical coordination between project work, demonstrator implementation, internal expert teams, and external partners. The role is intended for someone who can understand technically demanding topics, structure them clearly, and turn them into robust, usable engineering input.

This is neither a pure hands-on ADK development role nor an operational measurement position. Instead, the role focuses on technical interface work, requirements consolidation, demonstrator-oriented design support, and the transfer of project results into reusable technical artefacts.

Your responsibilities

- Derive, structure, and maintain technical requirements, constraints, and decision material for NanoWired integration, advanced packaging, sensor integration, and design-enablement-related topics
- Consolidate technical input from BioBond-AL and ODE4EC-DIG and prepare it as usable input for the internal ADK team
- Coordinate technical questions, requirements, and feedback loops between the project teams and the internal ADK and electrical/RF characterization teams
- Support the preparation of simple demonstrator-oriented layouts, test structures, and interposer-related design elements required for the validation of packaging and characterization concepts
- Coordinate the implementation of such structures in close collaboration with the DSE team and the responsible cleanroom and process experts
- Work with internal experts in sensor systems, packaging, integration, and characterization to derive consistent and practically usable technical requirements
- Consolidate results from joining, characterization, demonstrator evaluation, and integration studies into structured specifications and technical documentation
- Assess and document trade-offs, interface constraints, risks, acceptance criteria, and implementation boundaries in a structured and traceable way
- Support the transfer of project results into ADK-relevant artefacts, technical guidelines, datasets, and other reusable engineering outputs
- Contribute to project-related reporting, workshops, dissemination activities, and technical coordination with national and international partners
- Support the technical coordination of cooperation activities with project partners in Taiwan

Your qualifications

Required

- Master's degree, Diplom, or equivalent university degree in electrical engineering, microsystems engineering, physics, materials science, or a related technical/scientific field
- Strong organisational and communication skills and enthusiasm for coordinating interdisciplinary technical work
- Strong interest in microelectronics integration, advanced packaging, heterogeneous integration, sensor-oriented system integration, and open design enablement
- Ability to understand complex technical topics quickly and translate them into clear requirements, specifications, and structured decision material
- Sound technical understanding of bonding- and integration-relevant interface topics in microelectronics, including the ability to follow discussions on surface preparation, oxide-related effects, and metallization adaptations for NanoWired-based integration, and to translate such input into practical requirements and technical documentation.
- Very good command of English, both written and spoken
- Willingness to undertake mandatory project-related stays in Taiwan with a total duration of 6 months

Advantageous

- Basic understanding of reliability and qualification approaches such as thermal cycling, humidity, or electromigration
- Basic understanding of electrical and RF characterization and typical measurement and data flows
- Initial experience with simple layout, test-structure, demonstrator, or interposer-related design tasks
- Interest in NanoWired-based low-temperature bonding and its use in sensor-related or heterogeneous integration scenarios
- Experience in requirements engineering, structured technical documentation, or coordination of research and development projects

- Experience working in interdisciplinary or international teams

You are a strong team player with a structured and reliable way of working. You enjoy bringing order to complex technical topics, interacting with different expert groups, and helping translate research results into concrete technical outputs.

What you can expect from us

At IHP, you will work in a challenging and international research environment with strong technical infrastructure and close links between research and implementation.
This position offers the opportunity to contribute to highly relevant topics at the interface of:

- NanoWired integration
- advanced packaging
- sensor demonstrators
- characterization and design enablement
- international project collaboration

You will work with experienced expert teams across multiple technical domains and gain insight into both project-level coordination and practical demonstrator implementation. A structured orientation process will support your integration into the institute and your new research environment.
We are committed to supporting your individual career development through conference participation, further training, and mentoring opportunities. At the same time, we value the personal needs of our employees by offering flexible working hours, remote work options, and a family-friendly work culture.

Equal opportunities and inclusion

IHP is TOTAL E-QUALITY-certified for promoting equal opportunities for women and men in the workplace and is strongly committed to diversity and inclusion. We explicitly encourage women to apply and welcome applications from all individuals regardless of gender, nationality, ethnic or social origin, disability, age, or sexual orientation.
Disabled applicants with equal qualifications will be given preference.
If you are relocating to Frankfurt (Oder), our **Relocation Service** will be happy to assist you with accommodation and settling in.

Further advantages

30 days holiday | special annual payment | Company pension scheme (VBL) | Flexible working hours, also part-time (no core working hours) | Possibility to work up to 40 % independent of location according to company agreement | Parent-child room as a possibility to work with a child in case of childcare bottlenecks | A wide range of further training opportunities in-house or within the framework of business trips | Discounted company ticket with monthly allowance of € 15 for various fare zones | Good transport connections | Free parking at the institute | Canteen with breakfast and lunch | On-site health services | Company family and care guides | Free, confidential counselling by an external service provider in a wide variety of challenging private or professional situations | Structured induction and actively supported integration into the institute

Your application

Have we sparked your interest? Then we look forward to receiving your application via our **online application form.**

For further information regarding the position please contact Dr. Herfurth: career@ihp-microelectronics.com.