



## Doctoral Thesis: Skyrmionics - Low power neuromorphic computing & sensing (f/m/div)

As part of the TOPOCOM project, we are hiring one Doctorate Candidate (DC) to be funded by the Marie Skłodowska-Curie Actions (MSCA) Doctoral Networks (DN), 2023, within the European Union's EU Framework Programme for Research and Innovation Europe Horizon. The TOPOCOM consortium contains six leading European Universities and two major Industrial Partners working in the field of topological spin structures for unconventional computing and sensing. In particular, we are studying the use of skyrmions, magnetic whirls with enhanced stability and dynamics for novel unconventional logic and computing and integrated sensor- logic applications.

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**Location:** Villach  
**Job ID:** HRC1151508  
**Start date:** 01.04.2025  
**Operating department:** SFM IM

**Type of employment:** Full time  
**Length of contract:** Temporary  
**Job splitting possible:** No  
**Hire4IFX:** No

### Job description

In your new role you will:

- **Research field:** Creation, manipulation and control of magnetic skyrmions in thin film multilayers
- **Research Objectives:** Perform experiments to understand the fundamental static and dynamic properties of magnetic spin structures with a particular topologies.
- **Research Activities:** Explore the magnetic device design to match industry requirements for the use case of a power free magnetic revolution counter. Verify different magnetic designs under real application conditions.
- **Employment and Secondment:** The selected DC will be enrolled as Ph.D. student at Physics Department of Johannes Gutenberg University Mainz and will be employed by Infineon Technologies Austria AG (IFAT) within the project period. Furthermore, the TOPOCOM network offers ideal possibilities for scientific exchange with leading groups in the field and secondments are planned at selected partners

**Deadline for online application:** 12th March 2025

**Targeted starting date:** 1st April 2025

**Full-time employment:** 38.5 hrs/week

### Your profile

You are best equipped for this task if you have:

- A professionally relevant background in **Physics, Nanoscience, Materials Science**, or equivalent, with expertise on magnetic materials
- Excellent communication skills in **English and German**
- An **energetic mindset** combined with a **structured and self-organized work style**

For your application please consider the following:

**Eligibility and mobility criteria (mandatory requirements EU rules)**

- Supported researchers must be doctoral candidates, i.e. not already in possession of a doctoral degree at the date of the recruitment.
- Recruited researchers can be of any nationality and must comply with the following mobility rule: they must not have resided or carried out their main activity (work, studies, etc.) in the country of the recruiting beneficiary for more than 12 months in the 36 months immediately before their recruitment date. For 'International European Research Organisations' (IERO), 'international organisations', or entities created under Union law, the researchers must not have spent more than 12 months in the 36 months immediately before their recruitment in the

same appointing organisation. Compulsory national service, short stays such as holidays and time spent by the researcher as part of a procedure for obtaining refugee status under the Geneva Convention (1) are not considered. (1) 1951 Refugee Convention and the 1967 Protocol.

#### Conditions of employment

- The successful candidates will receive from the respective employer an attractive salary in accordance with the MSCA regulations for Doctoral Candidate researchers and will include a mobility allowance.
- The guaranteed PhD funding is valid until September 2027. In addition to their individual scientific projects, all fellows will benefit from further continuing education, which includes internships and secondments, a variety of training modules as well as transferable skills courses and attractive participation in conferences.

#### Application Procedure

- Applications must be submitted to both Infineon Technologies Austria AG (IFAT) and Johannes Gutenberg university Mainz (JGU).

#### Documents requested

- Eligibility Statement: for verifying MSCA requirements, the candidates clearly indicate exact dates of (1) degree entitling to pursue a PhD (typically a Master of Science degree or Engineering degree), (2) positions and country of residence in the last 5 years.
- Complete CV (Europass format obligatory): The candidates are allowed to pursue a maximum of three positions in the E2GO programme. If more than one position is pursued, please clearly indicate all the positions that applied with priorities on the first page of the CV.
- Motivation letter (maximum 1 page per position applied) should state why the applicant wishes to pursue the specific research and why she thinks s/he is an ideal candidate for the position.
- Scan of certificates showing BSc, MSc and other courses followed, with grades and if it is possible a ranking.

This position is subject to the collective agreement for workers and employees in the electrical and electronics industry. The salary for this position is EUR 3.525,00 gross p.m. (full-time basis).

#### #WeAreIn for driving decarbonization and digitalization.

As a global leader in semiconductor solutions in power systems and IoT, Infineon enables game-changing solutions for green and efficient energy, clean and safe mobility, as well as smart and secure IoT. Together, we drive innovation and customer success, while caring for our people and empowering them to reach ambitious goals. Be a part of making life easier, safer and greener.

#### Are you in?

#### – Power & Sensor Systems (PSS) drives leading-edge power management, sensing, and data transfer capabilities –

The PSS division powers decarbonization and digitalization with a wide range of energy-efficient and digital solutions. PSS semiconductors help avoid carbon emissions, use resources sustainably, manage power effectively and intelligently, give 'things' smart senses, and process data quickly and reliably. The portfolio includes power, connectivity, RF, and sensor system technologies to develop smaller, lighter, smarter, and more efficient solutions for consumer devices, smart home/building applications, robotics, computing and data centers, charging devices, power tools, and much more.

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[Click here](#) for more information about working at PSS with interesting employee and management insights and an overview with more #PSSDreamJobs.

At **Infineon in Villach** you shape the technologies of tomorrow and work in an international environment with more than 4700 colleagues from over 70 nations. Your personal contribution will be valued and appreciated as the cornerstones of our success. And all that in beautiful surroundings which guarantee a high quality of life.

The **City of Villach** is located in the center of Carinthia, Austria's southernmost province, in close proximity to the Italian and Slovenian border. Living in Austria has many social, health-care-related and economic perks. The country's social and health care system is among the best in the world and for decades numerous international surveys have singled out Austria as a particularly safe and wealthy country with a high quality of life. Villach itself benefits from its status as a "small town", offering everyday living at affordable prices in an outstanding setting.

#### We are on a journey to create the best Infineon for everyone.

This means we embrace diversity and inclusion and welcome everyone for who they are. At Infineon, we offer a working environment characterized by trust, openness, respect and tolerance and are committed to give all applicants and employees equal opportunities. We base our recruiting decisions on the applicant's experience and skills.

We look forward to receiving your resume, even if you do not entirely meet all the requirements of the job posting.

Please let your recruiter know if they need to pay special attention to something in order to enable your participation in the interview process.

[Click here](#) for more information about Diversity & Inclusion at Infineon.

Does this sound like just the right challenge for you? If so, we look forward to getting to know you!

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### More information

Martin Gabernig [Internal Application Process](#)

[Recruiter Profile](#)