



## Be part of an Exciting Team of PhDs Students in the EU project TOPOCOM

**Artificial Intelligence (AI)** is playing an increasingly important role in our daily life. Neural networks performing the AI tasks, assess large and complex data sets, classify the content, or make decisions. New technologies are required that execute and train such networks in a more efficient manner, overcoming the performance and energy bottlenecks of today's silicon technology.

"TOPOCOM" is a new Marie Skłodowska-Curie Action (MSCA), supporting Doctoral Networks-Industrial Doctorates within the European Union's Framework Programme for Research and Innovation. TOPOCOM consists of six universities and two industrial players, working in the field of unconventional computing and sensing. At IBM we are working on novel materials and devices for neuromorphic computing and future CMOS technology.

### Job description

This opening for a PhD student (F/M/D) is in the neuromorphic devices and systems group, a diverse team of students, PostDocs, engineers, and scientists. We are realizing new materials, devices and structures performing signal processing tasks of interest for neural networks. The PhD student is embedded in the Science of Quantum and Information Technologies Department at the IBM Research Laboratory in Zurich.

In TOPOCOM, we will explore novel emerging ferroelectric memory technologies and the integration thereof in neuromorphic computing architectures.

You will explore the ferroelectric properties of thin films, evaluate the properties of realized nanoscale devices, and study novel computing architectures. As IBM is an industrial research partner in TOPOCOM, the project also covers application scenarios, benchmarking, and knowledge protection aspects.

You will be employed for 36 months by IBM Research Europe – Zurich and enrolled as a Ph.D. student in one of the universities of the TOPOCOM consortium. Within the IBM team and the TOPOCOM network you will find an ideal base for scientific and collaborative exchange. Secondments at other partners of the project are foreseen.

### Your profile:

- Masters degree in physics, electrical/electronic engineering, or related fields.
- Passionate about physics and new technologies research, with interest in emerging compute and memory technologies, analog computing, and future CMOS. Some background in digital, analog, and/or mixed-signal circuits is a plus.
- You are a team player, motivated and result-oriented with an innovative attitude.

**IBM Research Europe - Zurich** is the European branch of the IBM Research Division. It has made major contributions to the advancement of knowledge in material science, nanoscience and nanoscale physics stimulated by problems relevant to applications. Research in the Science of Quantum and Information Technology department is concentrated in the fields of neuromorphic and quantum computing, nano-technology, future emerging devices, and materials science. IBM Research Europe – Zurich is the first industrial research lab that received the Historic Site Award of the European Physical Society for its contributions to physics including the Nobel prizes of 1986 and 1987, and the Kavli prize in nanoscience in 2016. The Binnig-and-Rohrer Nanotechnology Center (BRNC) at IBM Research – Zurich, provides a 1000 m<sup>2</sup> state-of-the-art cleanroom infrastructure for device processing and characterization.

**IBM is committed to diversity at the workplace.** With us you will find an open, multicultural environment. Excellent flexible working arrangements enable all genders to strike the desired balance between their professional development and their personal lives.

### How to apply

In case of questions, do not hesitate to contact Prof. Dr. Bert Offrein at [ofb@zurich.ibm.com](mailto:ofb@zurich.ibm.com). Please submit a cover letter, curriculum vitae, transcripts, and a reference contact to our [career page at IBM](#) by December 20<sup>th</sup>.