

# Ph.D. position in Microresonator Frequency Combs at EPFL

## Project description

Within the framework of the EU H2020 Marie Skłodowska-Curie European Training Network “MICROCOMB: Applications and Fundamentals of Microresonator Frequency Combs”, a **PhD position is available** in the Laboratory of Photonics and Quantum Measurements at EPFL. The specific research project will be focused on developing novel sources of ultra-broadband and ultrashort laser pulses, which are fully compatible with state-of-the-art photonic integration. The underlying technology is based on the highly nonlinear and ultra-low loss silicon nitride (SiN) based micron-scale waveguides and resonators developed and fabricated at EPFL.

The ultimate goals of the project are to demonstrate few-to-single-cycle transient waveforms in integrated photonics devices for the first time. The project will be carried out in the research group of Prof. Tobias J. Kippenberg (<http://k-lab.epfl.ch>), who will serve as Ph.D. advisor. Because this project resides at the interface of modern nonlinear integrated technologies and ultrafast optics, the applicant will acquire a diverse set of theoretical and experimental techniques ranging from advanced dispersion engineering, wafer-mask design, ultrafast pulse characterization and the numerical modelling of the Lugiato-Lefever equation.

## We offer a unique PhD experience

- world-class research facilities
- hands-on workshops in technical and transferable skills
- Industry exposure
- International conferences and outreach activities

## Requirements

- A master's degree in engineering or physics
- An outstanding academic record
- Good communication and English language skills

As per the **Marie Curie eligibility rules**, the candidate must not have resided or carried out his/her main activity (work, studies, etc.) in Switzerland for more than 12 months during the last three years.

Previous research experience in optics, numerical simulation or nanoscale fabrication would be beneficial.

## Diversity

EPFL is committed to diversity in the workplace. We offer an open, multicultural environment. Excellent, flexible working arrangements enable both women and men to strike the desired balance between their professional development and their personal lives.

## How to apply

Please send a **single PDF file** including a motivation letter, curriculum vitae, transcripts of undergraduate and graduate grades, and contact information from at least two references to Prof. Tobias J. Kippenberg ([tobias.kippenberg@epfl.ch](mailto:tobias.kippenberg@epfl.ch)).