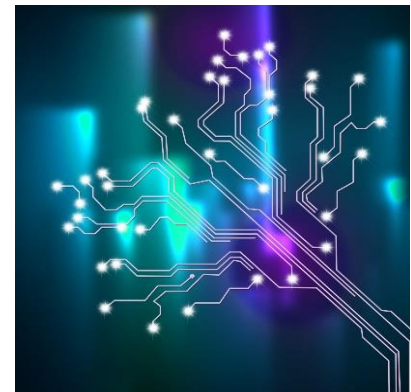


# Master-Thesis

## Building Blocks in Electronic-Photonic Integrated Circuits for Terahertz applications

The field of terahertz integrated technology is gaining momentum with rapidly developing state-of-the-art VLSI capable silicon technologies and recent progress in silicon photonics. The integration of high-performance photonics blocks with high-accuracy electronics blocks is one of the keys for enabling reliable practical solutions for THz applications such as imaging, sensing and next generation 6G communications.



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IHCT is seeking a motivated Master's student to contribute to the currently ongoing research activities in the cutting-edge field of electronic-photonic integrated circuits. The goal of this work is to investigate and optimize the key photonic building blocks for their on-chip implementation in novel terahertz electronic-photonic integrated circuits. The candidate will have an opportunity to acquire most sought-after skills and hands-on experience in industry in the field of integrated circuits. More precisely, he/she will know to carry out 2D/3D optoelectronic electromagnetic simulations, circuit designing, and testing & data analysis for implementing niche Terahertz electronic-photonic integrated circuits. The successful completion of project can lead to a full-time doctoral thesis depending on the progress and mutual interest.

### Requirements:

- Basic understanding of semiconductors (diode, transistor, bandgap, direct/indirect, etc.)
- Knowledge of silicon integrated circuits (would be an advantage but not necessary)
- Notions in fibre optics (would be an advantage but not necessary)
- Notions in programming with Python or MATLAB

For more information, please get in touch with

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