The Department of Information Technology (INTEC) of the Ghent University Faculty of Engineering is active in education and scientific research in telecommunication and information technology. INTEC, with its 220 people, is an associated laboratory of the micro-electronics research center IMEC in Leuven, Belgium. The *Photonics Research Group* of INTEC performs research in the field of photonic integrated circuits, which process optical signals and have a wide range of applications, from telecommunication networks to bio-sensors. A core technology developed by the group is *silicon photonics*, photonic integrated circuits in silicon. Fabrication of such silicon photonic IC's builds on high-end micro-electronics technology. The *Photonics Research Group* is one of the leading groups in this field in Europe.
In the European project HELIOS, silicon photonics technologies are being elaborated to a point where they can form the basis for many commercial applications, preferably through access to one or more foundries. However, such a working model implies the availability of design tools and libraries similar as those available in electronics. Today's photonic tools don't have the same maturity, and are often incompatible with one another, which has a negative impact of the design process. These tools include electromagnetic solvers, circuit modelers, mask layout libraries and virtual fabrication processors. In the photonics group, we have a number of these tools available, some of which were designed in-house, while others were (commercially) acquired from third parties. The integration of these tools into a single framework could resolve a large fraction of the design issues. For instance, it would allow for hierarchical modeling, where photonic circuit blocks can be calculated through (semi) automatic electromagnetic simulation of virtually fabricated mask layouts. This would then allow designers to create photonic component designs directly from existing electronic design tools. This activity is part of the project HELIOS.

In the framework of this research, the department offers a position for a

SOFTWARE INTEGRATION ENGINEER (m/f)

Job content:
- Elaborating an unified framework for photonic design tools
- Developing interfaces for the various design and simulation tools available in the photonics research group, in order to integrate these tools in the framework.
- Developing an hierarchical modeling strategy for photonic circuits
- Integrate the photonic tools into existing electronic design automation (EDA) tools, such as Cadence.

Profile:
- Master of Engineering or Master of Industrial Sciences degree, preferably in software engineering or electronics.
- Software architecture skills and a thorough knowledge of computer programming. Languages used for this work include C, C++ and Python.
- Good communication skills in English.
- The candidate demonstrates teamwork skills as well as working independently and taking initiative.
- A competence in micro-electronics or photonics design is an asset.
- The candidate is willing to train further skills in photonics, nanophotonics and microelectronics on the job.

Offer: We offer a position in a young, dynamic, and high-tech research environment with international appeal in the center of Ghent. The position fits in a European project and will involve contacts with colleagues in Europe and world-wide. **Start:** Negotiable, from 1/6/2009. **Duration**: 1 year, negotiable.

For more information, please contact:
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Candidates send their written CV and motivation letter to

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