Postdoc Research in Thermal Transport in III-V optoelectronic Devices

Kungliga Tekniska högskolan, KTH Informations- och kommunikationsteknik

KTH Royal Institute of Technology in Stockholm is the largest and oldest technical university in Sweden. No less than one-third of Sweden's technical research and engineering education capacity at university level is provided by KTH. Education and research spans from natural sciences to all branches of engineering and includes Architecture, Industrial Management and Urban Planning. There are a total of 13,400 first and second level students and almost 1,900 doctoral students. KTH has 4,900 employees.

KTH Information and Communication Technology conducts research and education at leading international level in Material Physics, Photonics/Optics, Electronic Systems, Integrated Devices and Circuits, as well as Communication Systems. Our research activity encompasses both basic and applied level. We offer a wide spectrum of educational programs at undergraduate, masters and doctoral level. Our school fosters close collaboration with Swedish and international companies and research institutes as well as surrounding associations such as Kista Science City.

Job description

The position is at the Department of Materials and Nanophysics of the KTH Information and Communication Technology. KTH (www.KTH.se) is a leading research and teaching institution in Europe. The position is tenable at the Department of Materials and Nanophysics (www.kth.se/en/ict/forskning/material-och-nanofysik) of the KTH Information and Communication Technology. In the context of a Swedish Research Council (VR) research project, we seek an enthusiastic, highly motivated and qualified researcher to carry out research on thermal transport in III-V semiconductor device-like structures. The aim of the project is to understand in-plane and across-plane thermal transport in semiconductor multilayers and heterostructures with micro-to nanometer features. While the research work is strongly experimental, a solid theoretical and modelling component will need to be carried out in the context of thermal management.The appointee will work under the supervision of Prof. C. M. Sotomayor Torres in close collaboration with two main groups in the department, those of Profs. S. Lourdudos and S. Anand, and with the Phononic and Photonic Nanostructures group of the Catalan Institute of Nanoscience and Nanotechnology (www.icn.cat/~p2n/).

The successful candidate will become responsible for the day-to-day work of the project "Heat transport in III-V semiconductors: phonon engineering for thermal management", which includes sample design, growth specifications, structural electrical and optical characterisation, thermal studies and modelling, documentation and publications. She or he is expected to carry out publishable research in the general field of phononics.

The responsibilities associated with the position include: (i) Perform research of the highest standards in thermal transport in the Nano scale and phononics; (ii) Organise own work and the collaborations with other groups based technical discussions, research plans, implementation and analysis of experiments, theory and simulations using COMSOL or similar software, contribution to laboratory development; (iii) Dissemination of results in high impact journals, directly relevant major international conferences, workshops and web-based means; (iv) active participation in the academic life of the groups involved.

Qualifications

The candidate should hold a PhD in solid-state physics, physical electronics or electronic & electrical engineering. She or he should have research experience in the science and engineering of phonons in semiconductor systems. The candidate should be familiar with semiconductor optoelectronics, micro- and nanofabrication, electrical and optical and or thermal properties of semiconductors. Above all the candidate should have a demonstrated potential for scientific achievements and good communication skills. Proficiency level in the use of the English language is essential (written, spoken and listening/reading comprehension).

Trade union representatives

You'll find contact information to trade union representatives at http://intra.kth.se/en/administration/rekrytering/annonsering/fackrepresentanter-1.500898.

Application

Applicants are required to submit the following documents:

1. Resume or CV including a list of publications
2. Copy of PhD degree certificate and transcripts from university and graduate studies
3. Cover letter with a statement of the applicant’s research experience relevant to experimental work in nanoscale thermal transport in semiconductors.
4. Contact information of three professional references (e-mail and phone number)

Please note that all material needs to be in English, apart from the official document.

Log into KTH's recruitment system in order to apply to this position. You are the main responsible to ensure that your application is complete according to the ad. Your complete application must be received at KTH no later than the last day of application.

Others

Form of employment: Time limited. A two-year fixed-term appointment.

We firmly decline all contact with staffing and recruitment agencies and job ad salespersons.

Type of employment	Temporary position longer than 6 months
Working hours	Full time
Number of positions	1
Working hours	100%
Reference	I-2015-0038
Access	1st April 2015 (two weeks before or after can be negotiated).
Published	2015-01-29
City	Kista
Last application date	2015-02-19
County	Stockholms län
Country	Sweden
Contact	Dr. Clivia M Sotomayor Torres / Professor email: cmst2@kth.se Elizabeth All / ICT HR-manager Phone: +46 8 790 4411 / email: eall@kth.se
Link to ad	http://kth.mynetworkglobal.com/what:job/jobID:56681/