Doctorate Researcher (f/m)
in the area of “Emerging Non-Volatile Spintronics Memories”

Job description: The possibility to pursue a Doctorate (PhD) degree exists.

This project investigates reliable and energy-efficient computer architectures based on non-volatile spintronics memory technologies. In spintronic memories, not only the electrical information but also the spin of electrons is used to store data. As a result, these non-volatile memories have very low standby power consumption, are very dense and also allow close to SRAM speed. However, to enable spintronics for mass production still a variety of challenges at device, circuit, and system-level have to be resolved.

Therefore, in this research project, it is the aim to design, develop, and analyze hybrid CMOS-Spintronic normally-off computing architectures in which spintronic memories are used at various levels of the memory hierarchy (memory-in-logic, register files, different levels of cache, main memory) along with traditional CMOS devices and memories to achieve ultra-low-power and provide high performance and low cost. In this regard, it is of decisive importance to cover fault modeling, design for test, reliability, and robustness. This PhD research will be done in collaboration with an international team all around Europe.

Qualification: The applicants should hold a university degree (Diploma or Masters) in the areas of Computer Science or Electrical Engineering and should also have strong English communication skills (both Oral and Writing). Suitable candidates must posses a strong willingness for research exploration, independence, self-learning, creativity, teamwork and communication skills as well as the willingness in the preparation of research proposals.

Experience and solid background in VLSI circuit design, RTL design, advanced computer architecture, and simulation (RTL and/or cycle-accurate) is necessary.

Salary: The remuneration occurs on the basis of the wage agreement of the civil service in TV-L. Salary will be according to German public service positions.

Institute: Department of Computer Scienc, Chair of Dependable Nano Computing (CDNC)

Contract duration: limited

Starting date: as soon as possible

Application up to: 21.02.2016
Contact person in line-management:
For further information please contact Prof. Dr. Mehdi B. Tahoori,
Tel.: 0721/608-47778, Email: mehdi.tahoori@kit.edu

Application:
Candidates with excellent grades are invited to send their application materials including resume and university transcripts via email to: cdnc@itec.kit.edu

KIT is an equal opportunity employer. Women are especially encouraged to apply. Applicants with disabilities will be preferentially considered if equally qualified.

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