

Open postdoctoral position at IETR

18 months research position on

Development of photonic investigation method for hardware security

Context

Cybersecurity is a research topic that has been strongly developed in recent years with the rapid evolution of connected distributed systems, where data protection has become essential. The hardware part of digital security is one of the prop of secure systems (such as the smart card), and is at the heart of their vulnerability. Cybersecurity is a strong political will at national and regional levels and has been identified as a strategic axis for the Brittany Region, both in terms of Research, Training and Innovation.

Recently the Institut d'Electronique et des Technologies du numéRiques (IETR - UMR CNRS 6164) has implemented a platform for "Simulation, detection and vulnerability in secure hardware systems by laser injection faults" (CYBER-ELEC platform).

The objective of this new platform is to develop research activities at IETR, and more widely in the western region of France, based on the measurement/metrology aspects of secure components and systems, at the interface between technology and microelectronics circuits. In particular, the IETR will focus on hardware security issues from the point of view of the electronic component (approach original) to the circuit and/or integrated systems. The research themes developed within the platform are associated with vulnerability assessment are currently conducted by laser-simulated fault injection and laser thermal stimulation.

Job Description

CYBER-ELEC platform will soon be equipped with a high-resolution photonic emission test bench for the expertise of security components. For this purpose, the applicant will be in charge to setup the photo emission platform to make reliable measurement campaigns and analysis for qualification of devices combining laser fault injection, thermal laser stimulation investigation methods. Possibilities for numerical simulations of physical process of faults would be aimed. His/Her mission will also contribute to develop activities through research projects interacting with academic research laboratories and/or industry. This position will require autonomy and initiative.

Applicant profile

The applicant should have PhD degree in Electronics Engineering or Applied Computer Science with experience in algorithm, computer and microcontroller programming. An experience in in some following topics such as laser fault injection and/or laser thermal stimulation, photo-emission in circuitry/microcontrollers, microelectronic technologies, and architectures of integrated electronic circuits, (memories, microprocessors ...) will be strongly appreciated. Foreign work experience in research lab is required.

Location: Institut d'Electronique et des Technologies du numéRique, campus de beaulieu, 263 avenue du général Leclerc, 35042 Rennes

Duration: 18 months

Fundings: Creach Labs/Direction Générale de l'Armement

Salary: at least 2400 € net/month (level 7, IMN 582, of the french indexation of the research engineers) depending on experience of the applicant.

Procedure for application

Applicant should send detailed CV, motivation letter, publications list, and reference persons and their contact information at:

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