UMR 6164
INSTITUT D'ELECTRONIQUE ET DE TELECOMMUNICATIONS DE RENNES
Organic and Silicone Systems (OASiS) research Departement

Open postdoctoral position at IETR
18 months research position on
Laser fault injection in secure electronic systems

Context

Recently, Rennes 1 university has developed an experimental platform for simulation, detection and vulnerability in secure hardware systems by laser injection faults (CYBER-ELEC platform). A device under test (DUT) is exposed to a pulsed or continuous laser beam and output signals are extracted afterwards to quantify the impact of the beam onto the output answer of the DUT. In particular, one aspect of this research activities focus on hardware security issues from the point of view of the single elementary electronic component until the circuit and/or integrated sub-systems. Vulnerability assessments are established by laser fault injection (LFI) and laser thermal stimulation (TLS).

Job Description

The applicant will contribute to develop the research activities of the CYBER-ELEC platform. Numerical simulations of physical process of generation of faults or faulted sequences into the output answer of the component could be considered. Coding activities for data extraction could also be programmed. Programming of socket board receiving the DUT, and programming of DUT itself, could also be considered. This position will require autonomy, self-motivation, and initiative.

Applicant profile

The applicant should have a PhD degree in Micro-electronics or Applied Computing Science with skills in algorithm, advanced programming level in at least one language such as Python, C++, code analysis including assembly, interfacing, understanding of processor micro-architecture, attacks based on laser beam. Knowledge of the architectures of integrated electronic circuits, (memories, microprocessors, FPGA, chip...) would be a strong asset.
Foreign work experience in a research lab is required.

Location: IETR, *Institut d'Electronique, de Télécommunications et du numéRique*, campus de Beaulieu, 263 avenue du général Leclerc, 35042 Rennes).

Duration: 18 months
Fundings: Britanny Region and Rennes Metropole
Salary: 2200 € net/month (level 7, IMN 582, French indexation, research engineers)

Contacts:

Send resume, cover letter, publications list, and recommendation letters (if available) to:
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