

Secondment report

Name: ESR1.1 Guilherme CARDOSO MEDEIROS
IRP title: **Test and Reliability of FinFET Memories**
From: TUD
To: TUT
Period: April 29 – June 28, 2019

Activities during the secondment

- **Scope and objectives.**
 - To develop a Design-for-Testability scheme for FinFET SRAMs
 - To collaborate with ESR 4.3, Cemil Cem Gürsoy from TUT, on the topics of memory testing
 - And to exchange ideas and expand the already-existing collaboration between TUD and TUT
- **Activities.**
 - Design a DFT hardware and integrate it into a memory circuit
 - Perform electrical simulations of the modified memory circuit
 - Write an academic paper with the achieved results
- **Main results achieved.**
 - A new DFT scheme for FinFET memories
 - Validation and evaluation of the DFT scheme
 - An academic paper accepted at DATE 2020: Guilherme Cardoso Medeiros, Cemil Cem Gürsoy, Lizhou Wu, Moritz Fieback, Maksim Jenihhin, Mottaqiallah Taouil, Said Hamdioui, "A DFT Scheme to Improve Coverage of Hard-to-Detect Faults in FinFET SRAMs"
- **Next steps.**
 - Discussions about a diagnose methodology for memories are being carried out between both institutions
- **Optional request for support or a technology/tool available at host:**
 - No requests

Self-evaluation

Overall score: 4

I consider this secondment successful, with regards to the research objectives achieved, skills developed, supervision quality, diversity of the resources. (Agree = 5 ... Disagree = 1)

Optional comments: During my secondment, I had the opportunity to work in a different academic culture than the one I was used to back in the Netherlands. This allowed me to gain new perspectives on how to do research. While the secondment was successful and yielded a DATE paper, the lack of preplanning resulted in little active collaboration – that is, exchange of ideas and discussions with ESR 4.3. For my next secondment, I will push for a more detailed schedule and plan.

Date of the report approval by the supervisor: 08.11.2019

