

Secondment report

Name: ESR1.1 Guilherme CARDOSO MEDEIROS
IRP title: Test and Reliability of FinFET Memories
From: TUD
To: IROC
Period: February 24 – March 13, 2020

Activities during the secondment

- **Scope and objectives.**
 - To learn techniques applied by the industry on the development of FinFET transistors
 - To collaborate with ESR 2.3, Aneesh Balakrishnan, on the topics of electrical simulation
 - And to exchange ideas and expand the collaboration between TUD and IROC
- **Activities.**
 - Model a FinFET transistor using industrial tools
 - Perform electrical simulations of the modified FinFET device
 - Write an academic paper with the achieved results
- **Main results achieved.**
 - A new FinFET model using TCAD
 - A new variation-aware electrical simulation flow
- **Next steps.**
 - The definition of logic gates in which variation-aware electrical simulations must be carried out
- **Optional request for support or a technology/tool available at host:**
 - Synopsys TCAD tools

Self-evaluation

Overall score: 3

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 very different work environment, mainly due to working in a company instead of working in academia. This allowed me to gain new perspectives on how to do research and develop new technologies. Unfortunately, the secondment had only started when the COVID-19 pandemic started in Europe. Therefore, I was forced to come back to Netherlands after a couple of weeks in IROC. This resulted in the collaboration being paused and pushed aside. Hopefully this will change once the situation with the pandemic improves.

Date of the report approval by the supervisor: 26.06.2020

