Master thesis: Electro Migration in Highly Integrated Circuits

Advertising institute: Forschungszentrum Jülich - ZEA-2 - Electronic Systems
Reference number: D127/2016, Electrical engineering, physics

The Central Institute of Engineering, Electronics and Analytics (ZEA-2 – Electronic Systems) is a scientific technical institute of Forschungszentrum Jülich GmbH performing research and development projects in cooperation with the institutes of the research center as well as external partners. The focus of our work is electronic and information technology system solutions in sensor and detector technology, signal and data processing as well as measurement techniques.

Field of activity:
The Central Institute of Engineering, Electronics and Automation (ZEA-2 – Electronic Systems) is engaged in the development of complex, modular and high-scale cross-linked measurement, detector and sensor systems. Hereby the preferred approach are silicon-based System-on-Chip (SoC, highly integrated) solutions.

One important factor for the long-term reliability of integrated circuits, with ever decreasing feature sizes, is the effect of electromigration (removal of metal by electrical current at the line borders). An important step in this field for the improvement of reliability is an automatic simulation or check to avoid too narrow metal lines in the chip layout. In this context the master theses shall concentrate on the investigation and implementation of available TCAD (Technology Computer Aided Design) tools for the assessment of electromigration effects in integrated circuits.

Your task:
In the described context the candidate will work closely together with the team of designers and layouters to make sure that the manufactured chips will pass the requirement tests on long-term reliability as specified, e.g., in HTOL (high temperature operating life) tests. The candidate will explore and improve the electro migration robustness of integrated circuits that are actually part of the ZEA-2 most recent chip developments. The candidate will work hand in hand with / as part of the design team towards this goal.

Application
Did we raise your attention and you got curious?
We are looking forward for your application.
For further information please contact:

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