University of Stuttgart
Institute of Smart Sensors

Research/Master Thesis - Physical design of a sigma-delta ADC for NMR-on-a-chip transceiver

Nuclear magnetic resonance (NMR) is the method widely used in a large number of disciplines, including analytical chemistry, biochemistry, geology, materials science, nondestructive testing (NDT), and medicine. Tremendous efforts have been invested in the miniaturization of NMR electronics with the goal of opening up new application scenarios. Modern integrated circuit technologies allow for the integration of entire NMR electronics on a single chip, greatly reducing the weight, size, and cost of NMR experiments.

You will work under the mixed-signal ASIC design flow using Cadence, an industry-standard EDA tool for integrated circuits (ICs). You will gain experience in the design, layout, and verification (DRC, LVS, ERC) of the ASIC.

Requirements:

- ✓ Knowledge of analog circuit design
- ✓ Knowledge of semiconductor manufacturing processes

Duration: 6 months (or upon agreement)

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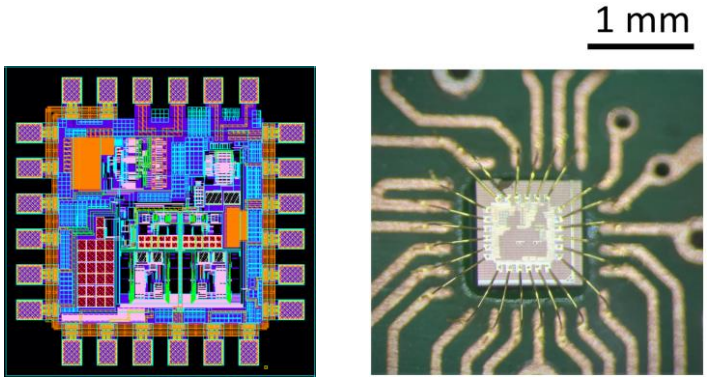

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