

IC Design and CAD Engineer

Job Reference: ICCAD
Posted: May 2019

Location London, UK
Weekly Hours 40.0

The Role

At DNA Electronics Ltd, we are developing cutting-edge integrated circuit technologies which couple with novel biochemical techniques to develop products for DNA analysis and molecular diagnostics. Our single-use sensor IC is being applied to detection and classification of bacteria in human blood.

The IC is designed and developed at DNAe by our dedicated IC design team. The team is engaged in the entire IC design process, from initial interactions with stakeholders through to requirements definition, specification creation, and detailed analog design, layout, verification, and silicon characterization. In addition, the team interacts with third parties which are involved in the IC design and development cycles and which are managed from within the team. This includes the CMOS wafer fab, packaging houses, and test development partners as well as software vendors (Cadence, Synopsys, etc.).

You will be a key contributor to the design of the mixed-signal integrated circuits. This will involve analog design and/or verification work, and detailed layout of macros potentially including entire ICs. The candidate will also be expected to manage our EDA/CAD environment, be familiar with the Cadence family of IC design tools, and interact with foundries, installing and maintaining PDKs, etc.

Reporting to the Electronic Engineering Group Lead, this role sits in our dedicated Electronic Engineering team within the multi-disciplinary development team at DNAe.

Responsibilities – General

- Full custom schematic design of custom analog cells for analog front-ends and analog-to-digital converters and their sub circuits.
- Full custom layout design of custom analog cells for analog front-ends and analog-to-digital converters and their sub circuits.
- Manage the design team's CAD /EDA flow with responsibility for keeping Cadence tools up-to-date and installing and maintaining foundry PDK's.
- Maintain project environments, setting up modules and scripts to aid the design flow

- Be a team player, working in very close collaboration with other members of the IC design team, software development engineers, hardware development engineers, mechanical engineers, and scientists.
- Collaborate with external development and manufacturing partners in the UK and abroad, such as CMOS fab partners, packaging houses, test development houses, and failure analysis partners.
- Together with the IC design technical lead, be responsible for the team's tape-outs delivering GDSII and liaising with foundries on tape-out matters as necessary.

Qualifications and experience

Required

- Excellent academic background in a relevant discipline.
- Experience in Analog /Mixed Signal full custom IC design and layout with a proven track record of full custom design and layout in advanced CMOS technologies.
- Good understanding of design techniques, both schematic and layout, in submicron CMOS processes
- Experience in CAD/EDA setup and management. Understanding of Linux releases and installations, and of Cadence and PDK installations.
- Experience with design management software, e.g., Clisoft.
- Knowledge of scripting in Skill/Perl and/or shell. Setting up and maintaining modules.
- Fully competent in the use of Cadence design tools (e.g. Virtuoso schematic editor, Spectre /Spectre-APS and Spectre-RF, Virtuoso Layout editors and Assura or PVS DRC/LVS/RCX

Desirable

- Design experience with analog front-ends, both as a schematic or layout design engineer
- Design experience with analog-to-digital converters, both as a schematic or layout design engineer. Ideally exposure to both Nyquist-rate (e.g., SAR) and oversampling (e.g., Sigma-Delta) converters.
- Experience with mixed-signal behavioural languages (VerilogA, VerilogAMS, SpectreHDL, etc.)
- Understanding of ESD and latch-up.
- Solid understanding of physical, electrical, and DFM rules for CMOS processes. Experience of layout and schematic verification, and other physical and electrical design rules.
- A background in medical device development and understanding of legislative requirements (i.e., ISO13485).
- Performs well in a cross-functional cross-cultural team environment.

- Understands specific roles within the team and maintains both personal focus and group vision.
- Results oriented, flexible drives subsystem and top-level layout tradeoffs required to meet deadlines.

Location

This role will be based in DNA Electronics headquarters, in West London at White City, W12 7SB.

Apply

If you meet the above criteria and would relish playing a key role in developing a revolutionary technology, we would be delighted to hear from you. We offer a competitive compensation package to successful candidates.

Please email your CV, making a note of your salary expectations and availability in the email to: careers@dnae.com quoting the **job title and your name** in the subject line.

For more information about DNAe, please visit our website www.dnae.com