



Position:

Electrical Characterization R&D Engineer

Location:

San Jose, CA

Degree Requirements:

MS with 10 years of Experience or PhD with 5 years experience

Job description:

- Here's your chance to be a member of a cross-functional team that creates and implements unique electrical test solutions to proprietary test structures using specialized and proprietary semiconductor test equipment into wafer fabrication mass production test floor that speeds yield enhancement.
- In this role, you will design, implement, verify and support new and enhanced electrical test capabilities with the ultimate application to high volume mass production in-line wafer material. You will lead in product specification definition, enhancements and implementation of software and hardware tester products, as well as characterize, analyze and create turnkey solutions to new test structures and test algorithms (DC parametric, Analog and RF) that leverage PDF proprietary test equipment and test chip designs.

Job Responsibilities include:

- Develop new test algorithms for testing various devices (ex. CMOS, Bipolar, CIS) using OTS and custom equipment
- Improve test capability (speed and accuracy) of PDF proprietary test chips, through novel electrical test methods and/or test structure design and analysis techniques, with a focus on mass production and fab automation solutions..
- Hardware and system-level design and review with knowledge of test chip design, device physics and common (industry-standard) electrical test practices.
- Construct and infer actual product requirements for parametric test capabilities from external clients and internal customers, with specific requirements that target 40nm and below with an eye on mass production testing requirements.
- Contributing directly to the roadmap requirements for parametric variability analysis on PDF-proprietary CV test chips using pdCV™ and dataPOWER™ analysis software.

Required skills and experience:

- This engineer must understand parametric wafer level testing in semiconductor WAT production, device physics, and deep submicron electrical device characterization. Project management skills and good cross-functional team work are important. Strong time management skills and the ability to handle multiple critical tasks in parallel are critical. Self motivation, initiative and follow through are all key attributes for this position.
- Experience with Hardware System Design and/or circuit design experience, especially focused on electrical test equipment or system design.
- Direct experience programming or writing algorithms for parametric wafer-level electrical testers
- Some software engineering experience with C or C++ .
- Experience using structured scripting languages such as Perl or Tcl
- Data analysis related programming or scripting (e.g. computing statistics on large datasets).
- Knowledge of Statistical Process Control in mass production test environment and metrology statistics
- Wafer handling experience and hands-on experience with semiconductor test engineering, including wafer probing technology and techniques
- Experience with writing specifications for Software and Hardware development projects

Job desirables:

- The ideal candidate will have a minimum of 5 years semiconductor test development experience and test hardware knowledge that includes WAT and Agilent 407x or Keithley 6xx hardware. Understanding of characterization processes is needed, along with good communication skills.
- Experience with LabWindowsCVI, Microsoft Visual C
- Familiarity with yield-related test structures like via chains, snakes, combs and routing and testing techniques for these test structures.
- Experience with Analog and RF testing and devices
- Database programming (SQL in (Informix and/or Oracle)
- Experience with inline process control and/or inline electrical testing including, issues relating to wafer-level probing
- Experience in applications support or management of electrical test HW and SW
- Understanding of processing steps involved in advanced semiconductor manufacturing processes (e.g., sequence and purpose of typical CMOS processing steps in a DUV, 8LM Cu/DD process). Experience with HK/MG device characterization is desirable as well.
- Experience with VLSI design of analog and/or digital circuits and full test chips
- Exposure to multi-site testing

- Yield or performance modeling of advanced semiconductor manufacturing processes or products, especially in the breakdown of yield loss into module-specific contributions and/or systematic vs. random behavior.
- Experience in PCB design and layout (Ex. OrCAD, Allegro)

If you are interested in this position, please submit your resume to joblogic@pdf.com.