

235. TESTING AND DIAGNOSIS OF 3-D FIELD PROGRAMMABLE GATE INTERCONNECT FAULTS

Velpuri Jagathi# , Mr. E.Poovannan*

#M.Tech, VLSI Design, SRM university, Tamil Nadu

*M.E., Assistant Professor, SRM university, Tamil Nadu

The emerging three-dimensional (3D) integration technology is one of the promising solutions to overcome the barriers in interconnect scaling, thereby offering an opportunity to continue performance improvements using CMOS technology. As the fabrication of 3D integrated circuits has become viable, developing CAD tools and architectural techniques are imperative for the successful adoption of 3D integration technology. A brief introduction on the 3D integration technology has been proposed, and then reviewed the EDA challenges and solutions that can enable the adoption of 3D ICs, and finally presented the design and architectural techniques on the application of 3D ICs, including a survey of various approaches to design future 3D ICs, leveraging the benefits of fast latency, higher bandwidth, and heterogeneous integration capability that are offered by 3D technology.

Keywords- 3D integrated circuits, interconnect scaling, architectural techniques, 3D technology

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