

## **Advanced IC Process Characterization Tool Puts Reliability Data in Hands of Fabless Design Houses**

*ProChek™ Measures Critical DSM Degradation Effects in Hours, Not Weeks*

**Anaheim, California, September 19, 2011** -- Ridgetop Group today introduced ProChek™, an innovative new system for rapid and inexpensive characterization of any semiconductor manufacturing process. With ProChek, any fabless integrated circuit (IC) supplier can independently collect critical reliability data concerning many of the deep sub-micron (DSM) effects that adversely affect IC performance, yield, and life expectancy.

ProChek is a complete system for generating, collecting, and analyzing reliability data about the transistors that comprise all semiconductor-based electronic circuits. The ProChek Test Coupon is a digitally synthesizable array of devices under test (DUTs), typically up to 1024 DUTs in a 1mm<sup>2</sup> test chip, consisting of transistors with user-specifiable geometries for any target fabrication process. The Test Coupon resides on a small test interface card which in turn connects to ProChek's compact Benchtop Test System controlled by the Host Controller. The transistors are stressed for temperature- and voltage-related effects through programmatically controlled mechanisms. As a result, ProChek can measure Negative/Positive Biased Temperature Instabilities (NBTI/PBTI), Time-Dependent Dielectric Breakdown (TDDB), Hot Carrier (HC), Threshold Voltage ( $V_T$ ) Shift, Stress Migration (SM), Electromigration, and other major DSM effects. ProChek also supports single-event (SE) and total ionizing dose (TID) radiation measurements.

ProChek is completing rigorous beta tests at a major fabless semiconductor design company in Southern California. ProChek test structures have been implemented for several processes, including IBM 45 nm Silicon-on-Insulator (SOI), TSMC 65 nm CMOS, and TowerJazz 180 nm silicon germanium (SiGe), with additional processes currently underway.

Andrew Levy, Director of the Semiconductor and Precision Instrument (SPI) Division,, said, "IC reliability is a matter of increasing concern as we build chips with ever smaller geometries and more complex architectures. ProChek is the ideal system to address such concerns because it is easy-to-use, compact, and inexpensive, and it puts information about degradation effects in the hands of the companies who are ultimately responsible for the products they design and sell."

"ProChek will be an essential tool to help designers gather data to create much more reliable chips without having to rely on very time-consuming and expensive test equipment and techniques," said Dr. Esko Mikkola, Ridgetop Principal Engineer for ProChek. "The system gathers data that is difficult to get from their foundry, and to do it in a matter of hours or days, instead of the weeks or months they would previously have to wait."



Ridgetop Group is exhibiting ProChek for the first time at the International Test Conference, booth #200, September 19-23, 2011, in Anaheim, California, USA. For additional information about ProChek, visit <http://www.ridgetopgroup.com/products/ProChek>. Please contact us for pricing and availability of ProChek.

#### **About Ridgetop Group, Inc.**

Founded in 2000, Ridgetop Group, Inc. has built an impressive reputation as the technology leader for radiation-hardened components, precision test structures and advanced electronic prognostic tools. For customers having critical systems, the firm has designed award-winning and patented products that serve semiconductor firms, aerospace/automotive and medical instrument companies in the USA, Europe and Asia. Ridgetop's partner companies include Altera, Cassidian (EADS), Q-Star Test, and numerous other progressive firms.

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