

## Call for Papers

### Special Issue of IEEE Transactions on Device and Materials Reliability

#### Breakdown in Advanced Gate Dielectrics

This special issue is devoted to research activities for advancing the understanding of breakdown in ultra-thin SiO<sub>2</sub> and advanced gate dielectric systems. Observations that some circuit architectures remain functional even after a gate oxide failure had led to considerable interest in studying the time-dependent increase of post-soft breakdown conduction in ultra-thin gate oxides. The accurate projection of circuit lifetime will require the correct physical models and acceleration parameters that describe the process by which soft breakdown evolves into hard breakdown and consequently catastrophic levels of leakage current. The objective of this special issue is to provide a comprehensive collection of contributed research works in the following areas:

- Oxide breakdown and wear-out mechanisms and models.
- Breakdown in high-k gate dielectrics and metal gate effects.
- Polarity dependent effects.
- Stress and characterization methodologies.
- CAFM, STM studies of breakdown paths.
- Understanding and modeling of post-BD FET behavior.
- Impact of breakdown on circuit operation.

#### Submission Deadline July 29, 2005

Please submit papers by July 29, 2005, through <http://mc.manuscriptcentral.com/tdmr>. For any questions or help needed to upload your paper, contact:

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