KL Pey's research awards

Best papers

- **Best Paper Award** of 2019 IEEE International Reliability Physics Symposium (IRPS)**, "***Spatio-Temporal Defect Generation Process in Irradiated HfO2 MOS Stacks: Correlated versus Uncorrelated Mechanisms***",** Fernando Leonel Aguirre, Andrea Padovani, Alok Ranjan, Nagarajan Raghavan, Nahuel Vega, Nahuel Müller, Sebastián Matías Pazos, Mario Debray, Joel Molina, **Kin Leong Pey**, Félix Palumbo.

- **Best Student Paper** of 2018 International Symposium for Testing and Failure Analysis (ISTFA), "*Pattern Search Automation for Combinational Logic Analysis*" (Emerging FA Techniques and Concepts session) by PhD student, Mr. Venkat Ravikumar.

- **The Best of Design in Engineering" award** of 2012 American Society for Engineering Education (ACEE) conference, "*A Symphony of Designiettes: Exploring the Boundaries of Design Thinking in Engineering Education*", Kristin L. Wood, Rajesh Elara Mohan, Sawako Kaijima, Stylianos Dritsas, Daniel D. Frey, Christina Kay White, Daniel D. Jensen, Richard H. Crawford, Diana Moreno, and **Kin-Leong Pey**.

- **Best Paper (Reliability) award** of 2011 IEEE 18th International Physical and Failure Analysis Symposium (IPFA), "*Study of the charge leakage of dual layer Pt metal nanocrystal-based high-k/SiO_2 flash memory cell - a relaxation current point of view*", Y.N. Chen, **K.L. Pey**, K.E.J. Goh. Z.Z. Lwin, P.K. Singh and S. Mahapatra.

- **Best Paper (Reliability) award** of 2009 IEEE 16th International Physical and Failure Analysis Symposium (IPFA), "*Can a MOSFET survive from multiple breakdowns?*", X Li, C.H. Tung and **K.L. Pey**.

- **2009 Electrochemical Society Norman Hackerman Young Author Award** in Solid-State Science & Technology for "*Materials and Electrical Characterization of $Er(Si_{1-x}Ge_x)_{2-y}$ Films Formed on $Si_{1-x}Ge_x(001)$ (x = 0-0.3) via Rapid Thermal Annealing*", E.J. Tan, **K.L. Pey**, D.Z. Chi, P.S. Lee and Y. Setiawan and K.M. Hoe, Journal of the Electrochemical Society, 155(1), pp. H26-H30, 2008.

- **Graduate Student Award/Paper of 2003 Material Research Society Spring Meeting** (USA) for "*Experimental characterization of the reliability of multi-terminal dual-damascene copper interconnect trees*", C.L. Gan, C.V. Thompson, **K.L. Pey**, W.K. Choi, C.W. Chang and Q. Guo.

- **Best Paper (Reliability) Award** of 2002 IEEE 9th International Physical and Failure Analysis Symposium (IPFA), "*Consequence of preferential void formation at the Cu/Si_3N_4 interface on the multiple failure mechanisms of cu dual-damascene metallization"*, C.L. Gan, F. Wei, C.V. Thompson, **K.L. Pey,** W.K. Choi and B. Yu.

- **Electrochemical Society Norman Hackerman Young Author Awards 2002** for "*Effect of ion implantation on layer inversion of Ni silicided poly-Si*", P. S. Lee, **K. L. Pey**, D. Mangelinck, J. Ding, D. Z. Chi, T. Osipowitcz, J. Y. Dai and L. Chan published in *Journal of Electrochemical Society*, Vol. 149 (9), G505-G509, 2002.

Research Awards

- **TSMC 2010 Outstanding Student Research Award**: Wu Xing on "*Physical Analysis of Breakdown in Advanced High-k Gate Dielectric Using Transmission Electron Microscopy and Atomistic Simulations*".

- **Top Place in Photo Contest** for "*Art of Failure Analysis*" of 2010 IEEE 17th International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA).

- **Japan Society for the Promotion of Science (JSPS), Visiting Professor**, Tokyo Institute of Technology, 2 February – 7 February 2009.

- **8th Place in Photo Contest** for "*Art of Failure Analysis*" of 2008 IEEE 15th International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA).

- **TSMC 2008 Outstanding Student Research Awards**:
  - A Commendation Prize in Category III: Physics, Chemistry of Material for Nano-Scale Devices by Li Xiang on "*Gate dielectric reliability study using TEM and EELS*".
  - A Bronze Prize in Category III: Physics, Chemistry of Material for Nano-Scale Devices by Ong Yi Ching on "*Scanning Tunneling Microscopy of the $Sc_2O_3/La_2O_3/SiO_x$ Gate Stack – A Nanoscopic Perspective*".

- **Japan Society for the Promotion of Science (JSPS) 2007 Scientist Exchange Award** for visiting to Tokyo Institute of Technology of Prof. Hiroshi Iwai's lab.

Highlights

- **Top papers for conference highlights** of 2018 IEEE International Reliability Physics Symposium (IRPS), "*Mechanism of soft and hard breakdown in hexagonal boron nitride 2D dielectrics*", A. Ranjan, N. Raghavan, S.J.O' Shea, S. Mei, M. Bosman, K. Shubhakar and **K.L. Pey**.

- **Highlight of the IEEE 2008 Electron Device Meeting** (IEDM), "*The Chemistry of Gate Dielectric Breakdown*", X Li, CH Tung, **KL Pey** and V. Lo.

Others

- **2011 Chinese Government Award** for Outstanding Self-financed students abroad for PhD research by Wu Xing.

- **2011 IEEE Electron Devices Society PhD Student Fellowship** for Nagarajan Raghavan.

- **IEEE Electron Devices Society 2002 Graduate Student Fellowship** for PhD student Alfred YF Chong's work on "*Fabrication of ultra-shallow junctions and advanced gate stacks for ULSI technologies using laser thermal processing*".