



Prof. Koji Eriguchi

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Education

- B.S. Engineering physics and mechanics, Kyoto University, 1989
- M.S. Engineering physics and mechanics, Kyoto University, 1991
- Ph.D. Engineering physics, Kyoto University 2004

Professional Background

Koji Eriguchi has been a professor of Kyoto University since 2016 after joining Kyoto University in 2005, working on plasma–solid surface interaction, optical characterization techniques of Si surfaces, and modeling of plasma-induced damage and defect creation in crystalline Si, particularly, the degradation of materials and devices in such harsh environments. Prior to joining Kyoto University in 2005, he had been a senior engineer at Panasonic from 1991 responsible for the research of plasma etch processes, thin gate dielectric wear-out phenomena including plasma-induced damage (PID), CMOS process integration, and reliability of electronic devices. He has published more than 100 journal papers. He received the Best Paper Award from the 32nd Dry Process Symposium in 2009, the APEX/JJAP Paper Award, the Plasma-Electronics Award from the Japan Society of Applied Physics (JSAP) in 2010, and 2015 Dry Process Symposium, Paper Award.

Publication (2009-2018)

- (1) K. Eriguchi, "Modeling of defect generation during plasma etching and its impact on electronic device performance—plasma-induced damage", *J. Phys. D: Appl. Phys.*, **50**, 333001 (2017).
- (2) K. Eriguchi and Y. Okada, "Electrical characterization of carrier trapping behavior of defects created by plasma exposures", *J. Phys. D: Appl. Phys.* **50**, 26LT01 (2017).
- (3) K. Eriguchi, "Defect generation in electronic devices under plasma exposure: Plasma-induced damage", *Jpn. J. Appl. Phys.* **56**, 06HA01 (2017).
- (4) K. Eriguchi and K. Ono, "Impacts of plasma process-induced damage on MOSFET parameter variability and reliability", *Microelectronics Reliability* **55**, 1464 (2015).
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- (7) K. Eriguchi, M. Kamei, Y. Takao, and K. Ono, "Analytic Model of Threshold Voltage Variation Induced by Plasma Charging Damage in High-k Metal–Oxide–Semiconductor Field-Effect Transistor", *Jpn. J. Appl. Phys.* **50**, 10PG02 (2011).



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- (14) K. Eriguchi, Y. Nakakubo, A. Matsuda, Y. Takao, and K. Ono, "Plasma-Induced Defect-Site Generation in Si Substrate and Its Impact on Performance Degradation in Scaled MOSFETs", *IEEE Electron Dev. Lett.* **31**, 1275 (2009).
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