



## Dr. Jae-hyun Kim

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Dr. Kim has is a principal engineer within the metrology and inspection technology for the semiconductor development and manufacturing division at SK Hynix. He is the leading of in-line analysis technology related to X-ray, optical metrology and the analysis of physical properties in the semiconductor process and integration. He received the Ph.D. degree at KAIST in 2017 and MS at Korea Univ. in 2003. He focus on research related to mechanical stress and strain on semiconductor device. He has proposed the comparison between the analytical solution using the experimental measurement and the simulation technique showed good agreement and thus the feasibility of such experiment to understand the mechanical properties.

### Publications and Achievements

1. **KIM, Jae Hyun**; YOO, Woo Sik; HAN, Seung Min. Non-destructive micro-Raman analysis of Si near Cu through silicon via. *Electronic Materials Letters*, 2017, 13.2: 120-128.
2. Joo Young Jung, Nadeem Qaiser, Gang Feng, Byung-il Hwang, Taegeon Kim, **Jae Hyun Kim**, Seung Min Han, "Size-Dependent Hardness of Five-fold Twin Structured Ag Nanowires" *Physical Chemistry Chemical Physics*, (2016)
3. **KIM, Jae Hyun**; HAN, Seung Min; YOO, Woo Sik. Communication—In-Line Detection of Silicon Surface Quality Variation Using Surface Photovoltage and Room Temperature Photoluminescence Measurements. *ECS Journal of Solid State Science and Technology*, 2016, 5.7: P438-P440.
4. **KIM, Jae Hyun**, et al. Direct observation of x-ray radiation-induced damage to SiO<sub>2</sub>/Si interface using multiwavelength room temperature photoluminescence. *Journal of Vacuum Science & Technology B, Nanotechnology and Microelectronics: Materials, Processing, Measurement, and Phenomena*, 2016, 34.4: 041208.
5. YOO, Woo Sik; **KIM, Jae Hyun**; HAN, Seung Min. Multiwavelength Raman characterization of silicon stress near through-silicon vias and its inline monitoring applications. *Journal of Micro/Nanolithography, MEMS, and MOEMS*, 2014, 13.1: 011205-011205.
6. Sun-Wook Kim, Dae-Seop Byun, Mijin Jung, Saurabh Chopra, Yihwan Kim, **Jae-Hyun Kim**, Seung-Min Han, Dae-Hong Ko, Hoo-Jeong Lee, "Channel Strain Measurement of Si<sub>1-x</sub>C<sub>x</sub> Structure: Effects of Gate Length, Source/Drain Length, and
7. **KIM, Jae Hyun**, et al. Methodology for N% recovery post PM for aged/non-annealed SPA oxynitride gate without XPS referencing. In: *Semiconductor Manufacturing (ISSM), 2010 International Symposium on*. IEEE, 2010. p. 1-4. 9 4
8. **KIM, Jae-Hyun**, et al. In-Line Non-Contact Micro-Kelvin Measurements Applied to ZrO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub>/ZrO<sub>2</sub> Dielectric Stacks in the Active Capacitor Cell Areas of Advanced DRAM. *ECS Transactions*, 2007, 11.4: 377-392.
9. **Kim, J. H.**, Lee, J. M., Shin, H. C., & Paik, Y. H. (2003). Separation of oxide inclusions from liquid metal in an applied electrostatic field. *Metals and Materials International*, 9(6), 593-597.