

Publications and Invited Talks

Atsushi Oshiyama

(A) Original Papers

1. Y.-i. Matsushita and A. Oshiyama, “Structural stability and energy levels of carbon-related defects in amorphous SiO₂ and its interface with SiC”, *Jpn. J. Appl. Phys.* **57**, 125701 (2018).
2. T. Kobayashi, Y.-i. Matsushita, T. Okuda, T. Kimoto and A. Oshiyama, “Microscopic mechanism of carbon annihilation upon SiC oxidation due to phosphorous treatment: Density functional calculations combined with ion mass spectrometry” *Appl. Phys. Exp.* **11**, 121301 (2018).
3. K. M. Bui, J.-I. Iwata, Y. Kangawa, K. Shiraishi, Y. Shigeta, and A. Oshiyama, “Reaction Pathway of Surface-Catalyzed Ammonia Decomposition and Nitrogen Incorporation in Epitaxial Growth of Gallium Nitride” *J. Phys. Chem. C* **122**, 24665 - 24671 (2018).
4. K. M. Bui, J.-I. Iwata, Y. Kangawa, K. Shiraishi, Y. Shigeta, and A. Oshiyama, “First-Principle Study of Ammonia Decomposition and Nitrogen Incorporation on the GaN Surface in Metal Organic Vapor Phase Epitaxy” *J. Cryst. Growth* **507**, 421-424 (2019)
5. T. Kobayashi, Y.-i. Matsushita, T. Kimoto and A. Oshiyama, “Structural determination of phosphosilicate glass based on first-principles molecular dynamics calculation” *Jpn. J. Appl. Phys.* **58**, 011001 (2019).
6. K. M. Bui, J.-I. Iwata, Y. Kangawa, K. Shiraishi, Y. Shigeta, and A. Oshiyama, “Incorporation of Nitrogen-related Species on Ga-rich GaN (0001) Surfaces” *Jpn. J. Appl. Phys.* (2019)

(B) Invited Talks

1. A. Oshiyama, “Computics approach to power semiconductors: Reactions in GaN epitaxial growth and carrier traps near SiC/SiO₂ Interfaces” 37th Electronic Materials Symposium (October 10 - 12, 2018, Nagahama, Shiga, Japan).
2. A. Oshiyama, “Electronic Properties of Nanometer-Scale Surfaces and Interfaces through Computics Approach” The Japan Society of Vacuum and Surface Science Meeting (Nov 19-21, 2018, Kobe, Japan).
3. A. Oshiyama, “Large-scale density-functional calculations in real space and its application to bilayer graphene and semiconductor epitaxial growth” American Physical Society March Meeting (March 4-8, 2019, Boston, USA).