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PRESENT POSITION AND UNIVERSITY ADDRESS

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EDUCATION

April 19, 2007 Ph.D., Nuclear Engineering, The University of Tokyo, Japan
(The title of Ph.D. thesis is “Modeling of interaction between hydrogen isotopes and defect in lithium oxide”)

April 1, 2004-April 31, 2006
(Doctoral course) Department of Quantum Engineering and Systems Science, School of Engineering, The University of Tokyo, Japan
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March 31, 2004 Master of Science, Nuclear Engineering, The University of Tokyo, Japan
April 1, 2002-March 31, 2004
(Master’s course) Department of Quantum Engineering and Systems Science, School of Engineering, The University of Tokyo, Japan

March 31, 2002 Bachelor of Science, Quantum Engineering and Systems Science,
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April 1, 1998-March 31, 2002
Department of Quantum Engineering and Systems Science, Faculty of Engineering, The University of Tokyo, Japan

PROFESSIONAL EXPERIENCE

March 2017 –present
Associate Professor, Department of Nuclear Engineering,
School of Engineering, Seoul National University, South Korea

March 2013 – February 2017
Assistant Professor, Department of Nuclear Engineering,
School of Engineering, Seoul National University, South Korea

Feb 2012 - Feb 2013
Research associate, Department of Materials Science and Engineering,
The University of Tennessee, Knoxville, USA

May 2007 - Feb 2012
Assistant Professor, Department of Nuclear Engineering and Management
School of Engineering, The University of Tokyo, Japan

May 2006-April 2007

PUBLICATIONS

1. J. Han, T. Oda*, “Chemical origin of differences in steel corrosion behaviors of s-electron and p-electron liquid metals by first-principles calculation”, *Phys. Chem. Chem. Phys.* **21** (2019) 25916.
2. J. Jun, J. Lee, M. Chang, T. Oda*, “A comparative study on modeling of the ferromagnetic and paramagnetic states of uranium hydride using a DFT+ U method”, *Phys. Chem. Chem. Phys.* **21** (2019) 17628.
3. S. Park, M. Banisalman, T. Oda*, “Characterization and quantification of numerical errors in threshold displacement energy calculated by molecular dynamics in bcc-Fe”, *Comp. Mater. Sci.* **170** (2019) 109189.
4. M. Banisalman, T. Oda*, “Atomistic simulation for strain effects on threshold displacement energies in refractory metals”, *Comp. Mater. Sci.* **158** (2019) 346.
5. J. Gil, T. Oda*, “Structural and chemical analysis of second-row impurities in liquid lead–bismuth eutectic by first-principles molecular dynamics”, *Phys. Chem. Chem. Phys.* **20** (2018) 30480.
6. J. Han, T. Oda*, “Performance of exchange–correlation functionals in density functional theory calculations for liquid metal: A benchmark test for sodium”, *J. Chem. Phys.* **148** (2018) 144501.
7. S. Yang, S. Yun, T. Oda*, “Molecular dynamics simulation on stability and diffusivity of hydrogen around a <111> symmetric tilt grain boundary in bcc-Fe”, *Fusion Eng. Des.* **131** (2018) 105–110.
8. M.J. Banisalman, S. Park, T. Oda*, “Evaluation of the threshold displacement energy in tungsten by molecular dynamics calculations”, *J. Nucl. Mater.* **495** (2017) 277–284.
9. S. Fukada, M. Kinjyo, T. Oda, T. Nishikawa, K. Katayama, “Experiment to Recover Tritium from Li–Pb Blanket and Understanding Chemistry of the Li₁₇Pb₈₃–H System”, *Fusion Sci. Technol.* **72**, 1–8 (2017).
10. J. Han, T. Oda*, “Chemical states of 3d transition metal impurities in a liquid lead–bismuth eutectic analyzed using first principles calculations”, *Phys. Chem. Chem. Phys.* **19**, 9945–9956 (2017).
11. T. Oda*, “Thermodynamic model for grain boundary effects on hydrogen solubility, diffusivity and permeability in poly-crystalline tungsten”, *Fusion Eng. Des.* **112**, 102–116 (2016).
12. D. Zhu, T. Oda*, “Trap effect of vacancy on hydrogen diffusivity in bcc-Fe”, *J. Nucl. Mater.* **469**, 237–243 (2016).
13. T. Oda*, W.J. Weber, H. Tanigawa, “Two-body potential model based on cosine series expansion for ionic materials”, *Comput. Mater. Sci.* **111**, 54–63 (2016).
14. T. Oda*, “Nuclear Engineers for Society: What Education can do”, a book chapter 20 in “Reflection on the Fukushima Daiichi Nuclear Accident”, edited by J. Ahn, C. Carson, M. Jensen, K. Juraku, S. Nagasaki, S. Tanaka, Springer Open (2015).
15. T. Oda*, D. Zhu, Y. Watanabe, “Kinetic Monte Carlo simulation on influence of vacancy on hydrogen diffusivity in tungsten”, *J. Nucl. Mater.* **467**, 439–447 (2015).
16. D. Zhu, T. Oda, S. Tanaka, “Influence of surface morphology and surface area on release behavior of hydrogen isotopes in LiNbO₃”, *Fusion Eng. Des.* **89**, 2797–2805 (2014).
17. T. Oda*, Y. Zhang, W.J. Weber, “Study of intrinsic defects in 3C–SiC using first-principles calculation with a hybrid functional”, *J. Chem. Phys.* **139**, 124707 (2013).
18. T. Oda*, Y. Zhang, W.J. Weber, “Optimization of a hybrid exchange–correlation functional for silicon carbides”, *Chem. Phys. Letter* **579**, 58–63 (2013).
19. M. Kobayashi, M. Shimada, Y. Hatano, T. Oda, B. Merrill, Y. Oya, S. Tanaka, “Deuterium trapping by irradiation damage in tungsten induced by different displacement processes”, *Fusion Eng. Des.* **88**, 1749–1752 (2013).
20. K. Azuma, T. Oda, S. Tanaka, “First-principles calculations for the surface termination of Li₂TiO₃

- (001) surfaces”, *J. Nucl. Mater.* **442**, S705-709 (2013).
21. D. Zhu, T. Oda, Y. Shono, S. Tanaka, “Release behavior of hydrogen isotopes thermally sorbed in Li_2TiO_3 single crystal”, *J. Nucl. Mater.* **442**, S437-441 (2013).
 22. H. Tsuchihira, T. Oda*, S. Tanaka, “Effects of threshold displacement energy on defect production by displacement cascades in α , β and γ - LiAlO_2 ”, *J. Nucl. Mater.* **442**, S429-432 (2013).
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 26. Y.W. Zhang, M. Ishimaru, V. Varga, T. Oda, C. Hardiman, H.Z. Xue, Y. Katoh, S. Shannon, W.J. Weber, “Nanoscale engineering of radiation tolerant silicon carbide”, *Phys. Chem. Chem. Phys.* **15**, 13429-13436 (2012).
 27. M. Shimada, Y. Hatano, Y. Oya, T. Oda, M. Hara, G. Cao, M. Kobayashi, M. Sokolov, H. Watanabe, B. Tyburska-Puschel, Y. Ueda, P. Calderoni, K. Okuno, “Overview of the US-Japan collaborative investigation on hydrogen isotope retention in neutron-irradiated and ion-damaged tungsten”, *Fusion Eng. Des.* **87**, 1166-1170 (2012).
 28. T. Oda* and S. Tanaka, “Modeling of diffusivity of tritium interacting with F centers in Li_2O ”, *J. Nucl. Mater.* **417**, 743-747 (2011).
 29. D. Masuyama, T. Oda, S. Tanaka, “Correlation between surface hydroxyl behavior and surface oxidation state of F82H”, *J. Nucl. Mater.* **417**, 1139-1142 (2011).
 30. D. Zhu, T. Oda, S. Tanaka, “Effects of grain size on hydrogen isotope behavior in LiTaO_3 ”, *Fusion Sci. Technol.* **60**, 1147-1150 (2011).
 31. Y. Oya, T. Oda, S. Tanaka, K. Okuno, “Development of Tritium Recovery by Flowing O_2+Ar Gases at Steam Generator in Fast Breeder Reactor”, *Fusion Sci. Technol.* **60**, 1423-1426 (2011).
 32. T. Oda*, M. Shimada, K. Zhang, P. Calderoni, Y. Oya, M. Sokolov, R. Kolasinski, J. P. Sharpe, Y. Hatano, “Development of Monte Carlo simulation code to model behavior of hydrogen isotopes loaded into tungsten containing vacancies”, *Fusion Sci. Technol.* **60**, 1455-1458 (2011).
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- dynamics", *J. Nucl. Mater.* **414**, 44-52 (2011).
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 45. S. Fukada, T. Oda, "Hot topics in nuclear fusion: How to control fuel created in the blanket", *ATOMOS* (Journal of the Atomic Energy Society of Japan) **51**, 178-182 (2009). (in Japanese)
 46. T. Oda*, K. Okuno, "Understanding tritium behavior: the chemical state in materials", *J. Plasma and Fusion Research* **85**, 28-30 (2009). (in Japanese)
 47. T. Oda*, Y. Oya, S. Tanaka, "Review on tritium behavior in breeding materials for fusion reactors", *J. Plasma and Fusion Research* **84**, 563-570 (2008). (in Japanese)
 48. T. Oda*, Y. Oya, K. Okuno, S. Tanaka, "Monte Carlo simulation on permeation of hydrogen isotopes through bcc Fe", *Fusion Sci. Technol.* **54**, 537-540 (2008).
 49. Y. Oya, T. Oda, K. Okuno, S. Tanaka, "Recovery of tritium dissolved in sodium at the steam generator of fast breeder reactor", *Fusion Sci. Technol.* **54**, 337-340 (2008).
 50. T. Luo, T. Oda, Y. Oya, S. Tanaka, "IR observation on O-D vibration in LiNbO₃ and LiTaO₃ single crystal irradiated by 3 keV D₂⁺", *J. Nucl. Mater.* **382**, 46-50 (2008).
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 57. T. Oda*, Y. Oya, S. Tanaka, "Thermal desorption behavior of hydrogen isotopes interacting with radiation defects in Li₂O", *Fusion Eng. Des.* **75-79**, 835-839 (2005).
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