

# Curriculum Vitae

## 1. Personal Details

Name and Surname: Shinji MURAISHI  
Titles: Associate Professor  
Field of Specialization: Materials Science and Engineering  
Affiliation: School of Material Science and Technology, Tokyo Institute of Technology

## 2. Areas of Supervision

Science of Metals and Alloys  
Structural Material  
Micromechanics

## 3. Academic Background (Please start from the undergraduate study experience)

Bachelor, Department of Metallurgy, Tokyo Institute of Technology (1997)  
Master, Department of Materials Science and Technology, Tokyo Institute of Technology (1999)  
Doctor, Department of Materials Science and Technology, Tokyo Institute of Technology (2002)

## 4. Grants-in-Aid for Scientific Research

2020 Mechanical properties and dislocation dynamics of aluminum alloy micropillars containing sequence precipitation phase. Ministry of Education and Japan Society for the Promotion of Science  
2009-2010 Development of mechanical energy light emitting device and high brightness. Ministry of Education and Japan Society for the Promotion of Science  
2007 Ministry of Education and Japan Society for the Promotion of Science

## 5. Professional Experience

2014-present: Associate Professor, School of Material Science and Technology, Tokyo Institute of Technology  
2012(Jan.~Sept.): Visiting Assistant Professor, University of Washington Dept. of Mechanical Engineering  
2011(Aug.~Sept.): Visiting research associate, Norwegian University of Science and Technology, Dept. of Physics  
2007-2008: PART-TIME Lecturer, Tokyo Metropolitan College of Technology  
2004-2014: Assistant Professor, Tokyo Institute of Technology, Metallurgy and Ceramics Science

## 6. Publications: Selection over last 5 years below. Full list available at

<https://orcid.org/0000-0002-1088-567X>

1. Orientation Dependent Hardening by <001> Rod-Shaped Misfitting Precipitates in Aluminium Alloys, Materials, vol.15, page 1380, Feb. 2022.
2. Internal Stress and Dislocation Interaction of Plate-Shaped Misfitting Precipitates in Aluminum Alloys, Materials, vol.14, page 5811, Oct. 2021.
3. Dislocation Topological Evolution and Energy Analysis in Misfit Hardening of Spherical Precipitate by the Parametric Dislocation Dynamics Simulation, Materials, Oct. 2021.

4. Orientation dependent hardening of  $\{111\}$  plate precipitate by parametric dislocation dynamics, *Mechanics of Materials*, vol. 160, page 103968, June 2021.
5. Influence of Residual Stress Around Constituent Particles on Recrystallization and Grain Growth in Al-Mn-Based Alloy during Annealing, *Materials*, vol. 14, page 1701, Mar. 2021.
6. Micromechanical analysis of residual stress around coarse precipitates under cold rolling condition, *Mechanics of Materials*, Volume 157, Page 103841, Mar. 2021.
7. Eshelby problem in continuous shape transition of helical inclusion, *International Journal of Solids and Structures*, May 2020.
8. Energy analysis of misfit hardening by parametric dislocation dynamics simulation, *Computational Materials Science*, Mar. 2020.
9. Experimental and Numerical Analysis of Magnetic Pulse Forming of A1050 Aluminum Sheet, *Materials Transactions*, Vol. 61, No. 2, pp. 346-354, Feb. 2020.
10. Influence of Kinetic Parameters on Interface Formation of Al/Fe Magnetic Pulse Welded Joints, *Proceedings of the 14th International Aluminium Conference (INALCO2019)*, Nov. 2019.
11. Experimental and Numerical Analysis of MPW and MPF of Al Sheet, *The 14th International Aluminium Conference (INALCO2019)*, Nov. 2019.
12. Welding Interface of MPWed Aluminium Plates with Different Hardness, *Proceedings of the 14th International Aluminium Conference (INALCO2019)*, Nov. 2019.
13. Average Eshelby tensor and elastic field for helical inclusion problems, *International journal of solids and structures*, Volume 180-181, No. 15, Page 125-136, July 2019.
14. Synthesis of Fe<sub>70</sub>Pd<sub>30</sub> nanoparticles and their surface modification by zwitterionic linker, *Materials chemistry and physics*, vol. 234, pp. 237-244, May 2019.
15. Study of the Q' (Q)-phase precipitation in Al-Mg-Si-Cu alloys by quantification of atomic-resolution transmission electron microscopy images and atom probe tomography, *Journal of Materials Science*, Springer, pp. 1-10, Feb. 2019.
16. The multiple orientation relationships and morphology of  $\beta'$  phase in Al-Mg-Si-Cu alloy, *Journal of Alloys and Compounds*, vol. 767, pp. 81-89, July 2018.
17. Clustering behavior during natural aging and artificial aging in Al-Mg-Si alloys with different Ag and Cu addition, *Materials Science & Engineering A*, Vol. 732, pp. 273-283, July 2018.
18. Magnetoresistance of oxygen concentration-modulated Co-Ti-O films, *Applied Physics A*, Vol. 124, No. 401, June 2018.
19. Molecular dynamics model for nano-motions of FePd nanohelices, *Journal of Applied Physics*, AIP publishing, 121, 154302, Apr. 2017.
20. Mechanism and its mathematical expressions of stress-induced light emission of ZnS:Mn/polyester composite, *Key Engineering Materials*, Vol. 728, pp. 252-257, 2017.
21. Experimental and Numerical Analysis of the Formation Behavior of Intermediate Layers at Explosive Welded Al/Fe Joint Interfaces, *Journal of Manufacturing Processes*, Vol. 24, pp. 100-106, Oct. 2016.
22. Efficient interpolation algorithm of electro-elastic Green's function for boundary integral equation method and Eshelby inclusion problem, *International Journal of Solids and Structures*, Elsevier, Sept. 2016.
23. Disc-shaped nanocrystal model for simulating the diffraction peak profile from a one-dimensional superlattice and its application to Pt/AlN superlattice films, *Journal of Applied Crystallography*, IUCr, Vol. 49, No. 3, pp. 909-917, June 2016.
24. Effect of substrate temperature on the structure and magnetic properties of CoPt/AlN multilayer films, *Journal of Wuhan University of Technology-Mater. Sci. Ed.*, Springer, Vol. 31, No. 1, pp. 44-47, Feb. 2016.