RESEARCH ACTIVITIES and ACHIEVEMENTS 2024/2025

from April 2024 to March 2025

Yamasaki & Nishimoto Laboratory
Department of Materials Science and Engineering
Magnesium Research Center, Kumamoto University

IF-indexed Journal Papers　欧文学術誌

8. Improving fracture toughness of rapidly solidified Mg–Zn–Y alloys by controlling precipitation of cluster-arranged nanoplates and LPSO phases, S. Nishimoto, M. Yamasaki, Y. Kawamura, Journal of Alloys and Compounds, 1014 (2025) Art. No. 178720.
https://doi.org/10.1016/j.jallcom.2025.178720, Issued on 5 February 2025.

7. Dynamic recovery around deformation kink boundary of Mg-Y-Zn alloy with long-period stacking ordered structure, M. Yamasaki, T. Matsumoto, T. Mayama, H. Somekawa, K. Hagihara, S. Nishimoto, Y. Kawamura, Materials Letters, 377 (2024) Art. No. 137360.
https://doi.org/10.1016/j.matlet.2024.137360, Issued on 15 December 2024.

6. Analysis of Microstructure Formation Process of MgCoY Amorphous Ribbon by TEM Observation and In-Situ Small Angle Scattering Measurement, K. Hirayama, J. Oishi, H. Okuda, Y. Maegawa, M. Yamasaki, Y. Kawamura, N. Ohta, Materials Transactions, 65 (2024) 1384-1389.
https://doi.org/10.2320/matertrans.MT-L2024008, Issued on November 2024.

5. Effects of heterogeneous microstructure evolution on the tensile and fracture toughness properties of extruded AZ31B alloys, S.X. Tang, S. Nishimoto, K. Hagihara, M. Yamasaki, Journal of Magnesium and Alloys, 12 (2024) 4126-4139.
https://doi.org/10.1016/j.jma.2024.10.005, Issued on October 2024.

4. Discovery of a giant lattice in $Mg_{97}Zn_1Yb_2$ alloy, M. Matsushita, A. Yokota, D. Yamasaki, S. Hiraoka, K. Morikawa, S. Iikubo, M. Yamasaki, Y. Kawamura, Materials Today Communications, 40 (2024) Art. No. 109883.
https://doi.org/10.1016/j.mtcomm.2024.109883, Issued on August 2024.

3. Effects of multimodal microstructure on fracture toughness and its anisotropy of LPSO-type extruded Mg-1Zn-2Y alloys, S. Nishimoto, T. Yasuda, K. Hagihara, M. Yamasaki, Journal of Magnesium and Alloys, 12 (2024) 2952 - 2966.
https://doi.org/10.1016/j.jma.2024.07.018, Issued on July 2024.

2. An attempt at friction-stir-welding of α-Mg/long-period stacking ordered two-phase Mg–Zn–Y–Al–La alloys: Effect of texture weakening on their mechanical properties, S. Inoue, M. Yamasaki, M. Ohata, S. Kakiuchi, Y. Kawamura, H. Terasaki, Journal of Advanced Joining Processes, 9 (2024) Art. No. 100221.
https://doi.org/10.1016/j.jajp.2024.100221, Issued on June 2024.

1. Creep deformation behavior and microstructure of α-Mg/long-period stacking ordered (LPSO) duplex Mg-Y-Zn alloy prepared by hot extrusion and heat treatment, T. Mineta, D. Takahashi, W. Bando, H. Sato, K. Hagihara, M. Yamasaki, Materials Today Communications, 39 (2024) Art. No. 108912.
https://doi.org/10.1016/j.mtcomm.2024.108912, Issued on June 2024.

Journal Paper Publications 和文学術誌

2. Cu–Ti 合金における疲労き裂の発生・進展挙動に及ぼす Al・Fe 添加の影響, 橋本拓也, 鎌田俊哉, 兵藤 宏, 渡辺宏治, 千星 聡, 山崎倫昭, 宮本吾郎, 銅と銅合金, 63 (2024) 48-55. https://doi.org/10.34562/jic.63.1_48, Issued on 1 August 2024.

1. Cu–Ni–Al 合金圧延材の組織と機械的特性に及ぼす時効、仕上圧延および最終焼鈍の影響, 沖 世紀, 西本宗矢, 山崎倫昭, 兵藤 宏, 依藤 洋, 銅と銅合金, 63 (2024) 20-25. https://doi.org/10.34562/jic.63.1_20, Issued on 1 August 2024.

Review Paper Publications 和文解説記事

1. 機能マルチモーダル制御による高強度と高延性を兼ね備える軽合金展伸材設計, 山崎倫昭, 萩原幸司, 松本龍介, 眞山 剛, ハルヨ ステファヌス, 日本金属学会会報まてりあ, 第63巻, 第1号 (2024) pp. 9-17.

Patents 産業財産権

1. 特願2024-030113, 塑性加工金属の製造方法, 山崎倫昭, 萩原幸司, 眞山剛, 2024年2月29日出願.

Awards 受賞

9. 優秀教育者表彰, 山崎倫昭, 国立大学法人熊本大学工学部, 2025年3月26日.
8. 奨学賞, 安倍颯人, 日本金属学会・日本鉄鋼協会, 2025年3月25日.
7. Top Cited Authors 2024, Materials Transactions, "Relationship between Cluster-Arranged Nanoplate Formation and Mechanical Properties of Dilute Mg-Y-Zn Alloys Prepared by Combination of Low-Cooling-Rate Solidification and Extrusion Techniques", S. Ishizaki, M. Yamasaki, K. Hagihara, S. Nishimoto, T. Nakamura, Y. Kawamura, Materials Transactions, 64 (2023) 756-765.
6. 日本金属学会第72回論文賞, "Unified Understanding of Strengthening Mechanisms Acting in Mg/LPSO Two-Phase Extruded Alloys with Varying LPSO Phase Volume Fraction", K. Hagihara, T. Tokunaga, K. Yamamoto, M. Yamasaki, T. Mayama, T. Shioyama, Y. Kawamura, T. Nakano, Materials Transactions, 64 (2023) 720-729. 2025年3月8日.
5. Excellent Paper of the Year 2024, International Magnesium Science & Technology Award (International Mg Society), "Strengthening of αMg and long-period stacking ordered phases in a Mg-Zn-Y alloy by hot-extrusion with low extrusion ratio, S. Harjo, W. Gong, K. Aizawa, T. Kawasaki, M. Yamasaki, Acta Materialia, 255 (2023) 119029", November 5th, 2024.
4. 日本銅学会第58回論文賞, "Cu-Ti合金における疲労き裂の発生・進展挙動に及ぼすAl・Fe添加の影響", 橋本拓也, 鎌田俊哉, 兵藤 宏, 渡辺宏治, 千星 聡, 山崎倫昭, 宮本吾郎, 銅と銅合金, 63 (2024) pp. 48-55. 2024年10月19日
3. 日本金属学会第43回優秀ポスター賞, "HCP/FCC層状構造を有する高強度Cu-Ge合金の開発", 樋口竜太朗, 西本宗矢, 山崎倫昭, 日本金属学会2024年秋期第175回講演大会, 大阪大学豊中キャンパス, 2024年9月18-20日
2. 日本金属学会第4回新進論文賞, "Relationship between Cluster-Arranged Nanoplate Formation and Mechanical Properties of Dilute Mg-Y-Zn Alloys Prepared by Combination of Low-Cooling-Rate Solidification and Extrusion Techniques, S. Ishizaki, M. Yamasaki, K. Hagihara, S. Nishimoto, T. Nakamura, Y. Kawamura, Materials Transactions, 64 (2023) 756-765", 日本金属学会, 2024年9月18日
1. 軽金属学会優秀ポスター賞, "マルチモーダル組織を有するMg97Zn1Y2合金押出材の室温引張・圧縮変形挙動の調査", 堀口皓匠, 山崎倫昭, 西本宗矢, 眞山剛, 萩原幸司, 徳永透子, ハルヨ ステファヌス, 軽金属学会2024年第146回春期大会, 名古屋大学東山キャンパス, 2024年5月10-12日