



研究論文

単結晶マイクロピラー圧縮試験を用いたAl-Fe合金積層造形体の高強度支配因子の検討

長子 明弘・朱 天齊・高田 尚記・鈴木 飛鳥・小橋 眞 (523)

Al-Zn-Mg合金における水素脆化発生挙動のマルチモーダル3Dイメージベース解析

比嘉 良太・藤原 比呂・戸田 裕之・小林 正和・海老原 健一・竹内 晃久 (530)

マグネシウム蓄電池用負極材料向け急冷凝固薄帯の製造条件の検討

桐本 雄市・福家 幸佑・附田 之欣・会田 哲夫・根本 泰則

池田 実・田畑 裕信・栗原 英紀・鈴木 真由美 (537)

共同刊行誌“Materials Transactions Vol. 64, No. 11”掲載論文要旨

Effect of Precipitation Size on Dislocation Density Change during Tensile Deformation in Al-Zn-Mg Alloy

Masahiro Hirata, Koichi Iwata, Daisuke Okai and Hiroki Adachi (545)

Improving Bendability of 6000-Series Extruded Aluminum Profiles Using Dies through Shear Stress and Flow-Velocity Reduction

Shogo Oda, Takeshi Hashiba, Daichi Terada, Yasuaki Tanaka and Katsuhiko Shiotsuki (545)

年間レビュー

2022年日本のチタン業界年間動向

木村 欽一 (546)

はぐくむ

オープンキャンパスにおける軽金属製品展示報告2

高山 善匡 (548)

広島工業大学オープンキャンパスでのアルミニウム製品の展示

桑野 亮一・日野 実 (549)

学会便り

令和5年度第1回参与会報告

田中 宏樹 (550)

支部便り

令和5年度第109回軽金属学会九州支部例会講演会 中堅企業支援セミナーおよび若手研究者支援セミナー開催報告

徳永 辰也 (551)

会告..... (i)

協賛行事..... (xiii)

行事カレンダー..... (xiv)

学会日誌..... (xv)

教員公募..... (xv)

編集後記..... (xvi)

JOURNAL OF THE JAPAN INSTITUTE OF LIGHT METALS

Vol. 73, No. 11 November, 2023

RESEARCH ARTICLE

Investigation of dominant contributors to high strength of additively manufactured Al-Fe alloy by using single-crystal micropillar compression tests

Akihiro CHOSHI, Tianqi ZHU, Naoki TAKATA, Asuka SUZUKI and Makoto KOBASHI (523)

Multi-modal 3D image-based simulation of hydrogen embrittlement crack initiation in Al-Zn-Mg alloy

Ryota HIGA, Hiro FUJIHARA, Hiroyuki TODA,
Masakazu KOBAYASHI, Kenichi EBIHARA and Akihisa TAKEUCHI (530)

Investigation of manufacturing conditions of single roll rapidly solidified ribbon for anode materials of magnesium rechargeable batteries

Yuichi KIRIMOTO, Kousuke FUKU, Tadayoshi TSUKEDA, Tetsuo AIDA, Yasunori NEMOTO,
Minoru IKEDA, Hironobu TABATA, Hideki KURIHARA and Mayumi SUZUKI (537)

Published papers in Materials Transactions via JILM

Effect of Precipitation Size on Dislocation Density Change during Tensile Deformation in Al-Zn-Mg Alloy

Masahiro Hirata, Koichi Iwata, Daisuke Okai and Hiroki Adachi (545)

Improving Bendability of 6000-Series Extruded Aluminum Profiles Using Dies through Shear Stress and Flow-Velocity Reduction

Shogo Oda, Takeshi Hashiba, Daichi Terada, Yasuaki Tanaka and Katsuhiko Shiotsuki (545)

ANNUAL REVIEW

Annual trend of titanium industry in 2022

Kinichi KIMURA (546)

FOR OUR FUTURE BROTHERS & SISTERS

Report 2 on exhibition of light metal products at open-campus

Yoshimasa TAKAYAMA (548)

Exhibition of Aluminum products at HIT open campus 2023

Ryoichi KUWANO and Makoto HINO (549)

JILM ACTIVITY

First meeting of advisory committee report

Hiroki TANAKA (550)

FROM BRANCH ACTIVITY

Report on the annual seminar by JILM Kyushu branch

Tatsuya TOKUNAGA (551)

Editorial Committee

(Chairperson) Toshiya SHIBAYANAGI (Vice-chairperson) Yasumasa CHINO Ryoichi ICHINO
(Director in change) Shinji ANDO Masayuki MIZUMOTO
(Key editors)

Hidetoshi UMEDA	Mitsunari OYAGI	Tomomichi OZAKI	Takashi KUBO
Kazunori SHIMIZU	Kenta SUZUKI	Naoki TAKATA	Yorinobu TAKIGAWA
Keitaro HORIKAWA	Tsutomu MORI		
(Editors)			
Ichiro AOI	Hidetaka ASOH	Hiroki ADACHI	Ken-ichi IKEDA
Takaomi ITOI	Tsutomu ITO	Kentaro IHARA	Tokuteru UESUGI
Hiroshi OKUDA	Tomo OGURA	Naoki OMURA	Keizo KASHIHARA
Tatsuya KIKUCHI	Takashi KUBOKI	Yuji KUME	Equo KOBAYASHI
Sengo KOBAYASHI	Masakazu KOBAYASHI	Yoshiki KOMIYA	Masahiro SAKAI
Ai SERIZAWA	Hideo TAKIZAWA	Eiji TADA	Yosuke TAMURA
Yoshihiro TERADA	Naoyuki NOMURA	Tomohiko HOJO	Noritaka HORIKAWA
Yoshihiko HANGAI	Hiroaki MATSUMOTO	Yukio MIYASHITA	Hiroyuki YAMADA
Takuya YAMAMOTO	Tokujiro YAMAMOTO	Hiroyuki WATANABE	



研究論文

MM-SPS プロセスで作製した純マグネシウムの硬さに及ぼす焼結保持時間の影響

伊野宮 匠・久保田 正広 (491)

β 型チタン合金 Ti-22V-4Al における変形・破壊挙動の温度依存性

矢野 伶・田中 將己・山崎 重人・森川 龍哉・都留 智仁 (497)

ADC12 ポーラスアルミニウムとステンレス金網の複合化による高強度化の検討

高木 樹・半谷 禎彦・後藤 悠・天谷 賢児 (504)

解説

$Zr_{55}Al_{10}Ni_5Cu_{30}$ 金属ガラス薄帯を用いた軽金属板材と SUS304 板材の異材抵抗スポット溶接

山本 篤史郎 (510)

私の一枚

失敗は成功のもと

高橋 知司 (514)

随想

戦後の米国アルミニウム圧延技術導入

川村 知一 (515)

LM コラム

マグネシウム合金の高温酸化と不燃性

井上 晋一 (517)

アルミニウム合金における結晶粒微細化に関する研究

皆川 晃広 (518)

手を動かすことの楽しさ・大切さについて

徳永 透子 (519)

はぐくむ

女子中高生夏の学校 2023 参加報告

成田 麻未 (520)

ダイバーシティリレーエッセイ～様々なひとの多様な視点～

本質は何か

関 史江 (521)

昭和は遠くになりにけり

西田 進一 (521)

支部便り

第15回東海支部女性の会「軽金属分野で活躍する女性研究者・技術者と話そう ライフプラン・キャリアプランを考える7」開催報告

成田 麻未 (522)

会告.....	(i)
協賛行事.....	(xvii)
行事カレンダー.....	(xviii)
学会日誌.....	(xix)
編集後記.....	(xx)

JOURNAL OF THE JAPAN INSTITUTE OF LIGHT METALS

Vol. 73, No. 10 October, 2023

RESEARCH ARTICLE

- Effect of sintering time on the hardness of pure magnesium fabricated by MM-SPS process**
Takumi INOMIYA and Masahiro KUBOTA (491)
- Temperature dependence of deformation and fracture in a beta titanium alloy of Ti-22V-4Al**
Rei YANO, Masaki TANAKA, Shigeto YAMASAKI, Tatsuya MORIKAWA and Tomohito TSURU (497)
- Investigation of composite of ADC12 porous aluminum and stainless steel wire mesh for high strength**
Tatsuki TAKAGI, Yoshihiko HANGAI, Yu GOTO and Kenji AMAGAI (504)

REVIEW

- Dissimilar resistance spot welding of light metal and SUS304 plates using $Zr_{55}Al_{10}Ni_5Cu_{30}$ metallic glass ribbons**
Tokujiro YAMAMOTO (510)

MY ONE SHOT

- Failure teaches success**
Tomoshi TAKAHASHI (514)

ESSAY AND LETTERS

- The introduction of Aluminum Rolling Technologies from the USA after the War**
Tomokazu KAWAMURA (515)

LM COLUMN

- Oxidation behavior and nonflammability of Mg alloys**
Shinichi INOUE (517)
- Investigation of grain refinement on aluminum alloys**
Akihiro MINAGAWA (518)
- Happy lathe time !**
Toko TOKUNAGA (519)

FOR OUR FUTURE BROTHERS & SISTERS

- Report of participating Summer School for Girls 2023 – Science, technology, and human encounters**
Mami MIHARA-NARITA (520)

ESSAYS ON DIVERSITY

- What is the essence of it ?**
Fumie SEKI (521)
- The Showa Era is growing distant**
Shinichi NISHIDA (521)

FROM BRANCH ACTIVITY

- Report on the 15th women's meeting from Tokai branch**
Mami MIHARA-NARITA (522)

Editorial Committee

(Chairperson) Toshiya SHIBAYANAGI	(Vice-chairperson) Yasumasa CHINO	Ryoichi ICHINO
(Director in change) Shinji ANDO	Masayuki MIZUMOTO	
(Key editors)		
Hidetoshi UMEDA	Mitsunari OYAGI	Tomomichi OZAKI
Kazunori SHIMIZU	Kenta SUZUKI	Takashi KUBO
Keitaro HORIKAWA	Tsutomu MORI	Yorinobu TAKIGAWA
(Editors)		
Ichiro AOI	Hidetaka ASOH	Hiroki ADACHI
Takaomi ITOI	Tsutomu ITO	Kentaro IHARA
Hiroshi OKUDA	Tomo OGURA	Naoki OMURA
Tatsuya KIKUCHI	Takashi KUBOKI	Yuji KUME
Sengo KOBAYASHI	Masakazu KOBAYASHI	Yoshiki KOMIYA
Ai SERIZAWA	Hideo TAKIZAWA	Eiji TADA
Yoshihiro TERADA	Naoyuki NOMURA	Tomohiko HOJO
Yoshihiko HANGAI	Hiroaki MATSUMOTO	Yukio MIYASHITA
Takuya YAMAMOTO	Tokujiro YAMAMOTO	Hiroyuki WATANABE



研究論文

Al-2%Si合金の共晶凝固過程における力学特性に及ぼすSrの影響

平野 椋己・尾崎 祥梧・永田 益大・松下 彬・坂本 敏夫・折尾 寛太
沖村 泰彦・岡根 利光・ムハマド ハイリ ファイズ・吉田 誠 (447)

共同刊行誌“Materials Transactions Vol. 64, No. 9”掲載論文要旨

Age Hardening of Si-Bearing Near- α Titanium Alloy Ti-6Al-2.75Sn-4Zr-0.4Mo-0.45Si (Ti-1100) with Two Kinds of Initial Phases

Tatsuaki Sakamoto, Hiroaki Akiyama, Seiya Tange and Hiromichi Takebe (455)

Microstructure of Mg-In Alloy Systems and Their Room Temperature Rollability

Ryota Nagata, Yoshiki Tomura and Takaomi Itoi (455)

ミニ特集「アルミニウムによる脱炭素社会への取り組み2」

解説

ゼロカーボン社会構築におけるアルミニウムとその合金の役割と可能性

熊井 真次 (456)

縦型高速双ロール鋳造を用いたリサイクルアルミニウム合金の不純物元素無害化とアップグレードリサイクルへの課題

原田 陽平・熊井 真次 (470)

分別結晶法によるアルミニウム素材のリサイクルに向けた不純物元素除去技術

村上 雄一朗・志賀 敬次・尾村 直紀 (481)

維持会員紹介

株式会社成田製作所

荒木 透 (487)

学会便り

第128回シンポジウム アルミニウムのアップグレードリサイクル技術

木村 申平 (489)

会告.....	(i)
協賛行事.....	(xiii)
行事カレンダー.....	(xiv)
学会日誌.....	(xv)
編集後記.....	(xvi)
第145回秋期大会プログラム.....	(巻末)

JOURNAL OF THE JAPAN INSTITUTE OF LIGHT METALS

Vol. 73, No. 9 September, 2023

RESEARCH ARTICLE

Influence of Sr on mechanical properties of Al-2%Si alloys during eutectic solidification

Rio HIRANO, Shogo OZAKI, Yoshihiro NAGATA, Akira MATSUSHITA, Toshio SAKAMOTO, Kanta ORIO,
Yasuhiko OKIMURA, Toshimitsu OKANE, Muhammad Khairi Faiz and Makoto YOSHIDA (447)

Published papers in Materials Transactions via JILM

Age Hardening of Si-Bearing Near- α Titanium Alloy Ti-6Al-2.75Sn-4Zr-0.4Mo-0.45Si (Ti-1100) with Two Kinds of Initial Phases

Tatsuaki Sakamoto, Hiroaki Akiyama, Seiya Tange and Hiromichi Takebe (455)

Microstructure of Mg-In Alloy Systems and Their Room Temperature Rollability

Ryota Nagata, Yoshiki Tomura and Takaomi Itoi (455)

Special Issue "Efforts towards decarbonizing society with aluminum 2"

REVIEW

Role and potential of aluminium and its alloys for a zero-carbon society

Shinji KUMAI (456)

Detoxification of impurity elements in recycled aluminum alloys using vertical-type high-speed twin-roll casting and remaining problems for upgrade recycling

Yohei HARADA and Shinji KUMAI (470)

Impurity elements removal technologies by fractional solidification method for recycling aluminum materials

Yuichiro MURAKAMI, Keiji SHIGA and Naoki OMURA (481)

PROFILE of CORPORATE MEMBERS

Narita Mfg., Ltd.

Toru ARAKI (487)

JILM ACTIVITY

Development of up-grade recycling technology of aluminum

Shimpei KIMURA (489)

Editorial Committee

(Chairperson) Toshiya SHIBAYANAGI (Vice-chairperson) Yasumasa CHINO Ryoichi ICHINO
(Director in change) Shinji ANDO Masayuki MIZUMOTO
(Key editors)

Hidetoshi UMEDA
Kazunori SHIMIZU
Keitaro HORIKAWA
(Editors)

Mitsunari OYAGI
Kenta SUZUKI
Tsutomu MORI

Tomomichi OZAKI
Naoki TAKATA

Takashi KUBO
Yorinobu TAKIGAWA

Ichiro AOI
Takaomi ITOI
Hiroshi OKUDA
Tatsuya KIKUCHI
Sengo KOBAYASHI
Ai SERIZAWA
Yoshihiro TERADA
Yoshihiko HANGAI
Takuya YAMAMOTO

Hidetaka ASOH
Tsutomu ITO
Tomo OGURA
Takashi KUBOKI
Masakazu KOBAYASHI
Hideo TAKIZAWA
Naoyuki NOMURA
Hiroaki MATSUMOTO
Tokujiro YAMAMOTO

Hiroki ADACHI
Kentaro IHARA
Naoki OMURA
Yuji KUME
Yoshiki KOMIYA
Eiji TADA
Tomohiko HOJO
Yukio MIYASHITA
Hiroyuki WATANABE

Ken-ichi IKEDA
Tokuteru UESUGI
Keizo KASHIHARA
Equo KOBAYASHI
Masahiro SAKAI
Yosuke TAMURA
Noritaka HORIKAWA
Hiroyuki YAMADA



研究論文

樹脂を用いた簡易補修が模擬亀裂を有するA6063アルミニウム合金の疲労寿命に与える影響

佐々木 大輔・植木野 介子・吉利 用之・原田 豊満・南口 誠・川上 雄士 (375)

Al-4.4Zn-1.4Mg合金押出し板材のVDA曲げ性に及ぼす初期組織の影響

アマリナ アイナ カハルディン・佐伯 蘭・高谷 舞・箕田 正・本間 智之 (382)

異径双ロールキャストで製造したAl-Mg合金板のインライン熱間圧延

羽賀 俊雄・古川 眞隆 (389)

高速双ロールキャストで製造した板の表面欠陥と偏析に対する製造条件の影響

山崎 一輝・羽賀 俊雄 (393)

共同刊行誌“Materials Transactions Vol. 64, No. 8”掲載論文要旨

Effects of Local Bonding between Solute Atoms and Vacancy on Formation of Nanoclusters in Al-Mg-Si Alloys

Kensuke Kurihara, Ivan Lobzenko, Tomohito Tsuru and Ai Serizawa (399)

Influence of Dislocation Substructure on Size-Dependent Strength of High-Purity Aluminum Single-Crystal Micropillars

Naoki Takata, Shintaro Uesugi, Tianqi Zhu, Soichiro Takeyasu, Asuka Suzuki and Makoto Kobashi (399)

解説

難燃性マグネシウム合金板材および接合材の平面曲げ疲労特性に及ぼすミクロ組織の影響

斎藤 尚文 (400)

年間レビュー

溶解・凝固・ casting

神戸 洋史・白井 孝太・森下 誠・才川 清二・吉田 誠 (406)

組織制御

小貫 祐介 (409)

力学特性

清水 一行 (411)

成形

久米 裕二 (415)

腐食・表面改質

多田 英司 (418)

接合技術

鈴木 健太 (424)

複合材料・ポーラス材料・付加製造技術・粉末冶金

半谷 禎彦 (426)

マグネシウム合金

鈴木 真由美 (429)

チタンおよびチタン合金

上田 恭介・石本 卓也 (432)

2022年度アルミニウム業界年間動向

戸上 義朗 (436)

2022年マグネシウム業界年間動向

駒井 浩 (439)

支部便り

軽金属学会東海支部2023年度総会および講演会

小橋 眞・小林 正和・栗田 洋敬 (445)

北陸支部 春期講演会中堅企業支援セミナー開催報告

土屋 大樹 (446)

会告.....	(i)
協賛行事.....	(viii)
行事カレンダー.....	(ix)
学会日誌.....	(x)
編集後記.....	(xi)

JOURNAL OF THE JAPAN INSTITUTE OF LIGHT METALS

Vol. 73, No. 8 August, 2023

RESEARCH ARTICLE

Effect of simple repair using resin on fatigue life of A6063 aluminum alloy with a simulated crack

Daisuke SASAKI, Kaishi NARAGINO, Mochiyuki YOSHITOSHI,
Toyomitsu HARADA, Makoto NANKO and Yuji KAWAKAMI (375)

Influence of initial extruded microstructures of Al-4.4Zn-1.4Mg alloy flat bar on VDA bendability

Amalina Aina KAHARUDIN, Ran SAEKI, Mai TAKAYA, Tadashi MINODA and Tomoyuki HOMMA (382)

In-line hot rolling of Al-Mg strip casts using unequal-diameter twin-roll caster

Toshio HAGA and Masataka FURUKAWA (389)

Effect of casting conditions on surface defect and segregation of strips cast by a high-speed twin-roll caster

Kazuki YAMAZAKI and Toshio HAGA (393)

Published papers in Materials Transactions via JILM

Effects of Local Bonding between Solute Atoms and Vacancy on Formation of Nanoclusters in Al-Mg-Si Alloys

Kensuke Kurihara, Ivan Lobzenko, Tomohito Tsuru and Ai Serizawa (399)

Influence of Dislocation Substructure on Size-Dependent Strength of High-Purity Aluminum Single-Crystal Micropillars

Naoki Takata, Shintaro Uesugi, Tianqi Zhu, Soichiro Takeyasu, Asuka Suzuki and Makoto Kobashi (399)

REVIEW

Effect of microstructure on plane bending fatigue properties of frame-retardant magnesium alloy plates and welded joints

Naobumi SAITO (400)

ANNUAL REVIEW

Melting, solidification and casting

Hiroshi KAMBE, Kota SHIRAI, Makoto MORISHITA, Seiji SAIKAWA and Makoto YOSHIDA (406)

Microstructural control

Yusuke ONUKI (409)

Mechanical properties

Kazuyuki SHIMIZU (411)

Forming

Yuji KUME (415)

Corrosion and surface modification

Eiji TADA (418)

Welding and joining technology

Kenta SUZUKI (424)

Composite materials, porous materials, additive manufacturing technology and powder metallurgy

Yoshihiko HANGAI (426)

Magnesium alloys

Mayumi SUZUKI (429)

Titanium and its alloys

Kyosuke UEDA and Takuya ISHIMOTO (432)

Annual trends in the aluminum industry in 2022

Yoshiro TOGAMI (436)

Annual trend of magnesium industry in 2022

Hiroshi KOMAI (439)

FROM BRANCH ACTIVITY

Tokai branch of the Japan Institute of Light Metals

2023 branch annual meeting and plenary lecture

Makoto KOBASHI, Masakazu KOBAYASHI and Hirotaka KURITA (445)

A report of seminar on supporting for small and medium enterprise by Hokuriku branch, Japan Institute of Light Metals

(Spring annual meeting of Hokuriku branch, 2023)

Taiki TSUCHIYA (446)

Editorial Committee

(Chairperson) Toshiya SHIBAYANAGI	(Vice-chairperson) Yasumasa CHINO	Ryoichi ICHINO	
(Director in change) Shinji ANDO	Masayuki MIZUMOTO		
(Key editors)			
Hidetoshi UMEDA	Mitsunari OOHYAGI	Tomomichi OZAKI	Takashi KUBO
Kazunori SHIMIZU	Kenta SUZUKI	Naoki TAKATA	Yorinobu TAKIGAWA
Keitaro HORIKAWA	Tsutomu MORI		
(Editors)			
Ichiro AOI	Hidetaka ASOH	Hiroki ADACHI	Ken-ichi IKEDA
Takaomi ITOI	Tsutomu ITO	Kentaro IHARA	Tokuteru UESUGI
Hiroshi OKUDA	Tomo OGURA	Naoki OMURA	Keizo KASHIHARA
Tatsuya KIKUCHI	Takashi KUBOKI	Yuji KUME	Equo KOBAYASHI
Sengo KOBAYASHI	Masakazu KOBAYASHI	Yoshiki KOMIYA	Masahiro SAKAI
Ai SERIZAWA	Hideo TAKIZAWA	Eiji TADA	Yosuke TAMURA
Yoshihiro TERADA	Naoyuki NOMURA	Tomohiko HOJO	Noritaka HORIKAWA
Yoshihiko HANGAI	Hiroaki MATSUMOTO	Yukio MIYASHITA	Hiroyuki YAMADA
Takuya YAMAMOTO	Tokujiro YAMAMOTO	Hiroyuki WATANABE	



研究論文

Al-Mg-Mn系ダイカスト合金におけるAE法を用いたSr添加時の凝固割れ感受性低減メカニズムの解明

土屋 蒼・永田 益大・熊木 拓海・ムハマド ハイリ ファイズ・沖村 泰彦・岡根 利光・吉田 誠 (315)

溶融Al-Mg合金からのFe除去に資する Al_3Fe 金属間化合物の生成に関する熱力学的研究

四宮 悠成・山本 陣平・加藤 謙吾・小野 英樹・山口 勝弘・小森 康平 (322)

7000系アルミニウム合金の機械的性質に及ぼすSc, Zr添加の影響

高谷 舞・一谷 幸司・箕田 正 (328)

解説

軽金属材料の時効組織のナノ・原子レベル解析

本間 智之 (332)

共同刊行誌“Materials Transactions Vol. 64, No. 7”掲載論文要旨

Nanoscale Analysis of Solute Distribution in Ultrahigh-Strength Aluminum Alloys

Equo Kobayashi, Masato Ohnuma, Shigeru Kuramoto, Junya Kobayashi and Goroh Itoh (340)

Modeling of Yield Surfaces for A5052 Aluminum Alloy Sheets with Different Tempers by Simplified Identification Method and Its Experimental Validation

Yuta Saito and Hideo Takizawa (340)

随想

忘れ去られた合金“につぼんジュラルミン：ND合金”

川村 知一 (341)

ダイバーシティリレーエッセイ～様々なひとの多様な視点～

子どもの成長とダイバーシティ

黒崎 友仁 (343)

新天地で見えたもの

寺田 佳織 (343)

学会便り

第144回春期大会後記

田中 康弘 (344)

第44回「若手の会」および「若手育成のための合同会合」

清水 裕太 (347)

第34回「女性会員の会」報告

大島 智子 (348)

第8回男女共同参画セッションパネルディスカッション「働き方改革その後～子育て編～」

成田 麻未 (349)

第127回シンポジウム「軽金属材料の高強度化の最前線」

倉本 繁 (350)

關西支部特集

令和5年度定時総会資料.....	(i)
会告.....	(ii)
行事カレンダー.....	(x)
協賛行事.....	(xi)
学会日誌.....	(xii)
編集後記.....	(xiii)

JOURNAL OF THE JAPAN INSTITUTE OF LIGHT METALS

Vol. 73, No. 7 July, 2023

RESEARCH ARTICLE

Clarification of the mechanism of hot tearing susceptibility reduction by Sr addition in Al-Mg-Mn-based die casting alloy using acoustic emission method

Ao TSUCHIYA, Yoshihiro NAGATA, Takumi KUMAKI, Muhammad Khairi Faiz,
Yasuhiko OKIMURA, Toshimitsu OKANE and Makoto YOSHIDA (315)

Thermodynamics of formation of Al_3Fe inter-metallic compound for Fe removal from molten Al-Mg alloy

Yusei SHINOMIYA, Jimpei YAMAMOTO, Kengo KATO,
Hideki ONO, Katsuhiro YAMAGUCHI and Kohei KOMORI (322)

Effects of Sc and Zr addition on the mechanical properties of 7000 series aluminum alloys

Mai TAKAYA, Koji ICHITANI and Tadashi MINODA (328)

REVIEW

Nano and atomic level analyses of aged microstructures in light metals

Tomoyuki HOMMA (332)

Published papers in Materials Transactions via JILM

Nanoscale Analysis of Solute Distribution in Ultrahigh-Strength Aluminum Alloys

Equo Kobayashi, Masato Ohnuma, Shigeru Kuramoto, Junya Kobayashi and Goroh Itoh (340)

Modeling of Yield Surfaces for A5052 Aluminum Alloy Sheets with Different Tempers by Simplified Identification Method and Its Experimental Validation

Yuta Saito and Hideo Takizawa (340)

ESSAY AND LETTERS

Forgotten alloy “Nippon Duralumin: ND alloy”

Tomokazu KAWAMURA (341)

ESSAYS ON DIVERSITY

Children's growth and diversity

Tomohito KUROSAKI (343)

The view in a new world

Kaori TERADA (343)

JILM ACTIVITY

Report of 144th Conference of the Japan Institute of Light Metals

Yasuhiro TANAKA (344)

Meeting report on “the 44th Youth meeting” and “Associated meeting for youth development”

Yuta SHIMIZU (347)

The 34th women's meeting of the Japan Institute of Light Metals

Tomoko OHSHIMA (348)

The 8th Gender equality session panel discussion “After work style reform ~Child-rearing~”

Mami MIHARA-NARITA (349)

Leading edge of strengthening light metals

Shigeru KURAMOTO (350)

Special Issue "Kansai Branch"

Greeting of special issue on Kansai branch	Hideki ARAKI (352)
The recent activities of Kansai branch	Hideki ARAKI (353)
Structure and Property of Materials Laboratory, Metallic Materials Design Laboratory, Resources and Energy System Laboratory, Kyoto University	Hiroshi OKUDA, Mamoru MABUCHI and Nobuhiro TSUJI (358)
Introduction of Process Integration Area at Osaka University	Shinji FUKUMOTO (360)
Introduction of Quantum Functional Materials Design Area at Osaka University	Hideki ARAKI (361)
Introduction of Materials Design and Fabrication Engineering Laboratory at KOBE University	Naoko IKEO (362)
Introduction of Reliable Materials Laboratory, Department of Materials Science, Graduate School of Engineering, Osaka Metropolitan University	Yorinobu TAKIGAWA (363)
Introduction of Adachi Laboratory at University of Hyogo	Hiroki ADACHI (364)
Design Engineering Laboratory, Graduate School of Engineering, University of Hyogo	Yasunori HARADA (365)
Introduction of Haga Laboratory, Department of Mechanical Engineering, Osaka Institute of Technology	Toshio HAGA (366)
Department of Chemistry and Materials Engineering, Faculty of Chemistry, Materials and Bioengineering, Kansai University	Toshihide TAKENAKA, Akio NISHIMOTO, Masato UEDA, Taiki MORISHIGE and Takumi HARUNA (367)
Research Division of Metallic Materials, Izumi Center, Osaka Research Institute of Industrial Science and Technology	Tomotake HIRATA (368)
Materials Science and Processing Laboratory, Research Division of Materials Science and Engineering, Morinomiya Center, Osaka Research Institute of Industrial Science and Technology	Hiroyuki WATANABE (369)
Kobe Steel Ltd., Technical Development Group, Materials Research Laboratory	Yoshitomi OKAZAKI (370)
Sakai aluminium Corporation	Satoshi HOZUMI (371)
Briefly Introduction of Nihon Superior Co., LTD.	Masahiko IKEDA (372)

Editorial Committee

(Chairperson) Shoichi HIROSAWA	(Vice-chairperson) Yasumasa CHINO	Yoshihiro NAKAYAMA
(Director in change) Ryoichi ICHINO		
(Key editors)		
Hidetoshi UMEDA	Masaya ENDO	Kohei KUBO
Naoki TAKATA	Yosuke TAMURA	Daisuke NAGASAWA
Tsutomu MORI		Takashi KUBO
(Editors)		Keitaro HORIKAWA
Ichiro AOI	Hidetaka ASOH	Shinji ANDO
Ken-ichi IKEDA	Takaomi ITOI	Kentaro IHARA
Tokuteru UESUGI	Hiroshi OKUDA	Tomomichi OZAKI
Naoki OMURA	Keizo KASHIHARA	Tatsuya KIKUCHI
Yuji KUME	Equo KOBAYASHI	Masakazu KOBAYASHI
Yoshiki KOMIYA	Masahiro SAKAI	Ai SERIZAWA
Yorinobu TAKIGAWA	Hideo TAKIZAWA	Daisuke TERADA
Yoshihiro TERADA	Masafumi NODA	Tomohiko HOJO
Noritaka HORIKAWA	Yoshihiko HANGAI	Yukio MIYASHITA
Hiroyuki YAMADA	Takuya YAMAMOTO	Hiroyuki WATANABE



巻頭言

会長就任のご挨拶

平野 清一 (259)

研究論文

Al-Mg-Zn-Cu-Ni 5元系耐熱合金へのTi微量添加による高温クリープ特性の向上

近藤 雅晶・鈴木 智博・黎 若琪・高田 尚記 (260)

ろう付熱処理したAl-Mn-Si-Cu合金の粒界腐食感受性に及ぼすMgの影響およびTiによる粒界腐食抑制効果

中村 優希・吉野 路英 (266)

硫酸中での高電流密度の陽極酸化によるアルミニウム表面の白色化

針山 智・伊藤 和宣・斎藤 彰典・渡辺 純貴・小野 幸子 (273)

溶融Al-Mg合金からのMn除去のための Al_6Mn 金属間化合物の生成に関する熱力学

加藤 謙吾・花井 雄介・小野 英樹・山口 勝弘・小森 康平 (279)

共同刊行誌“Materials Transactions Vol. 64, No. 6”掲載論文要旨

Grain Refinement of Cast Aluminum by Heterogeneous Nucleation Site Particles with High Lattice Matching

Yoshimi Watanabe, Mami Mihara-Narita and Hisashi Sato (285)

解説：軽金属学会賞

機械系での材料科学・材料工学研究—高温変形と組織制御と接合技術

高山 善匡 (286)

解説

超軽量Mg-Li基合金の力学特性改善に向けた材料設計

峯田 才寛 (297)

随想

“いぶし銀”のような材料組織学的研究を目指して

高橋 知司 (307)

北海道支部での活動を振り返って

高橋 英徳 (309)

アルミニウムのデザイナー

戸次 洋一郎 (310)

維持会員紹介

株式会社チーマグ

高橋 謙三 (311)

研究部会紹介

6000系アルミニウム合金の相変態挙動研究部会

廣澤 渉一 (313)

令和5年度定時総会資料..... (i)

会告..... (ii)

協賛行事..... (xv)

行事カレンダー..... (xvi)

学会日誌..... (xvii)

教員公募..... (xvii)

編集後記..... (xviii)

JOURNAL OF THE JAPAN INSTITUTE OF LIGHT METALS

Vol. 73, No. 6 June, 2023

OPENING ADDRESS

Seiichi HIRANO (259)

RESEARCH ARTICLE

Improved high-temperature creep properties of heat-resistant Al-Mg-Zn-Cu-Ni quinary alloy by adding a trace amount of Ti

Masaaki KONDO, Tomohiro SUZUKI, Ruqi LI and Naoki TAKATA (260)

Influence of additional Mg on intergranular corrosion susceptibility of brazed Al-Mn-Si-Cu alloys and improvement effect by Ti

Yuki NAKAMURA and Michihide YOSHINO (266)

Whitening of aluminum surface by anodizing at high current density in sulfuric acid solution

Tomo HARIYAMA, Kazunobu ITO, Teruyoshi SAITO, Sumitaka WATANABE and Sachiko ONO (273)

Thermodynamics of formation of Al_6Mn inter-metallic compound for Mn removal from molten Al-Mg alloy

Kengo KATO, Yusuke HANAI, Hideki ONO, Katsuhiro YAMAGUCHI and Kohei KOMORI (279)

Published papers in Materials Transactions via JILM

Grain Refinement of Cast Aluminum by Heterogeneous Nucleation Site Particles with High Lattice Matching

Yoshimi Watanabe, Mami Mihara-Narita and Hisashi Sato (285)

REVIEW—26th JILM PRIZE & AWARDS

Materials science and engineering studies in Mechanical Engineering Department

– high temperature deformation, microstructural control and welding/ joining technology

Yoshimasa TAKAYAMA (286)

REVIEW

Materials design for improving mechanical properties of ultra-lightweight Mg-Li based alloys

Takahiro MINETA (297)

ESSAY AND LETTERS

I am aiming to perform the studies of material structure like “oxidized silver”

Tomoshi TAKAHASHI (307)

Looking back on the activities of the Japan Institute of Light Metals Hokkaido Branch

Hidenori TAKAHASHI (309)

Aluminum Designer

Yoichiro BEKKI (310)

PROFILE of CORPORATE MEMBERS

Zmag Ltd.

Kenzo TAKAHASHI (311)

FROM RESEARCH LABORATORY

The sectional meeting on phase transformations in 6000 series aluminum alloys

Shoichi HIROSAWA (313)

Editorial Committee

(Chairperson) Shoichi HIROSAWA (Vice-chairperson) Yasumasa CHINO Yoshihiro NAKAYAMA

(Director in charge) Ryoichi ICHINO

(Key editors)

Hidetoshi UMEDA

Naoki TAKATA

Tsutomu MORI

(Editors)

Ichiro AOI

Ken-ichi IKEDA

Tokuteru UESUGI

Naoki OMURA

Yuji KUME

Yoshiki KOMIYA

Yorinobu TAKIGAWA

Yoshihiro TERADA

Noritaka HORIKAWA

Hiroyuki YAMADA

Masaya ENDO

Yosuke TAMURA

Hidetaka ASOH

Takaomi ITOI

Hiroshi OKUDA

Keizo KASHIHARA

Equo KOBAYASHI

Masahiro SAKAI

Hideo TAKIZAWA

Masafumi NODA

Yoshihiko HANGAI

Takuya YAMAMOTO

Kohei KUBO

Daisuke NAGASAWA

Hiroki ADACHI

Tsutomu ITO

Tomo OGURA

Tatsuya KIKUCHI

Sengo KOBAYASHI

Kazunori SHIMIZU

Eiji TADA

Naoyuki NOMURA

Hiroaki MATSUMOTO

Tokujiro YAMAMOTO

Takashi KUBO

Keitaro HORIKAWA

Shinji ANDO

Kentaro IHARA

Tomomichi OZAKI

Takashi KUBOKI

Masakazu KOBAYASHI

Ai SERIZAWA

Daisuke TERADA

Tomohiko HOJO

Yukio MIYASHITA

Hiroyuki WATANABE



特集「アルミニウムの諸特性に及ぼす水素の作用」

巻頭言

アルミニウムの諸特性に及ぼす水素の作用

堀川 敬太郎 (195)

研究論文

三点曲げ試験によるアルミニウム合金の水素脆性評価と各種めっきの影響

川上 滉太・日野 実・桑野 亮一・小田 幸典・堀川 敬太郎・金谷 輝人 (196)

動的な水素検出とデジタル画像相関法を用いた7075アルミニウム合金の環境水素脆性モニタリング

堀川 敬太郎・菅原 卓馬 (201)

復元再時効処理によるAl-Zn-Mg-Cu系合金の耐水素脆化特性の改善

真中 俊明・乙島 あいな (205)

高純度アルミニウムおよびA6061アルミニウム合金におけるポアの成長挙動と水素脱離挙動

八重樫 祥之・清水 一行・鎌田 康寛・戸田 裕之・藤原 比呂・上相 真之・竹内 晃久 (212)

Al-10%Zn-2.5%Mg-1.6%Cu合金の引張特性に及ぼすひずみ速度と内在水素の影響

北條 智彦・菊池 護・脇 裕之・秋山 英二 (218)

Al-10%Mg合金の引張特性に及ぼすひずみ速度と内在水素の影響

北條 智彦・菊池 護・秋山 英二 (223)

研究論文

フラックスろう付性に及ぼすろう付中の炉内雰囲気と昇温速度の影響

鈴木 太一・山吉 知樹 (230)

製品の輸出入を考慮したアルミニウムのスクラップ回収量の推計システムの開発

田端 祥久・大瀧 光弘・戸上 義朗 (238)

解説

発泡直後の加工による発泡アルミニウムへの形状付与

半谷 禎彦 (244)

はぐくむ

芝浦工業大学開講授業「加工学」におけるアルミニウム製品の紹介

青木 孝史朗 (252)

研究部会紹介

アルミニウム合金のひずみ速度感受性モデル化研究部会

西田 政弘 (253)

学会便り

第126回シンポジウム「軽金属研究のための分析・解析」

坂入 正敏 (255)

支部便り

令和4年度軽金属学会東北支部講演会およびイブニングセミナー「医用材料における軽金属の役割」開催報告

山本 卓也 (256)

令和4年度第108回軽金属学会九州支部例会講演会 中堅企業支援セミナーおよび若手研究者支援セミナー開催報告

安藤 新二 (257)

東海支部「若手研究者・技術者のための軽金属基礎講習会」開催報告

千野 靖正・佐藤 尚・中西 茂紀 (258)

会告.....	(i)
協賛行事.....	(xv)
行事カレンダー.....	(xv)
学会日誌.....	(xvi)
編集後記.....	(xvii)

JOURNAL OF THE JAPAN INSTITUTE OF LIGHT METALS

Vol. 73, No. 5 May, 2023

Special Issue “Hydrogen effects on various properties of aluminum”

Special issues on hydrogen effects on various properties of aluminum

Keitaro HORIKAWA (195)

RESEARCH ARTICLE

Evaluation of hydrogen embrittlement of three aluminum alloys by three-point bending test affected by three types of plating

Kota KAWAUE, Makoto HINO, Ryoichi KUWANO, Yukinori ODA

Keitaro HORIKAWA and Teruto KANADANI (196)

Monitoring of environmental hydrogen embrittlement in Al-Zn-Mg-based alloys by means of dynamic hydrogen detection and digital image correlation

Keitaro HORIKAWA and Takuma SUGAHARA (201)

Improving hydrogen embrittlement resistance of an Al-Zn-Mg-Cu alloy by retrogression and re-aging treatment

Toshiaki MANAKA and Aina OTOSHIMA (205)

Growth behavior of pores and hydrogen desorption behavior in pure aluminum and A6061 aluminum alloys

Shono YAEHASHI, Kazuyuki SHIMIZU, Yasuhiro KAMADA, Hiroyuki TODA

Hiro FUJIHARA, Masayuki UESUGI and Akihisa TAKEUCHI (212)

Effects of strain rate and internal hydrogen on tensile properties of Al-10%Zn-2.5%Mg-1.6%Cu alloys

Tomohiko HOJO, Mamoru KIKUCHI, Hiroyuki WAKI and Eiji AKIYAMA (218)

Effects of strain rate and internal hydrogen on tensile properties of Al-10%Mg alloys

Tomohiko HOJO, Mamoru KIKUCHI and Eiji AKIYAMA (223)

RESEARCH ARTICLE

Effect of brazing atmosphere and heating rate on brazeability for flux brazing

Taichi SUZUKI and Tomoki YAMAYOSHI (230)

Development of estimation system for aluminum scrap recovery amounts with considering imports and exports of manufactured products

Yoshihisa TABATA, Mitsuhiro OTAKI and Yoshiro TOGAMI (238)

REVIEW

Shaping of aluminum foam by mechanical processing immediately after foaming

Yoshihiko HANGAI (244)

FOR OUR FUTURE BROTHERS & SISTERS

Exhibition of aluminum products in SIT course “Material processing”

Koshiro AOKI (252)

BRANCH RESEARCH COMMITTEES

Sectional meeting on modeling strain rate sensitivity of aluminum alloys

Masahiro NISHIDA (253)

JILM ACTIVITY

Surface analysis for light metal research

Masatoshi SAKAIRI (255)

FROM BRANCH ACTIVITY

Report on the lecture and evening seminar held by Tohoku branch, Japan Institute of Light Metals

Takuya YAMAMOTO (256)

Report on the annual seminar by JILM Kyushu branch

Shinji ANDO (257)

Report on “Light-metal basic technical session for young researchers and engineers” by Tokai branch

Yasumasa CHINO, Hisashi SATO and Shigeki NAKANISHI (258)

Editorial Committee

(Chairperson)	Shoichi HIROSAWA	(Vice-chairperson)	Yasumasa CHINO	Yoshihiro NAKAYAMA
(Director in charge)	Ryoichi ICHINO			
(Key editors)				
Hidetoshi UMEDA	Masaya ENDO	Kohei KUBO	Takashi KUBO	
Naoki TAKATA	Yosuke TAMURA	Daisuke NAGASAWA	Keitaro HORIKAWA	
Tsutomu MORI				
(Editors)				
Ichiro AOI	Hidetaka ASOH	Hiroki ADACHI	Shinji ANDO	
Ken-ichi IKEDA	Takaomi ITOI	Tsutomu ITO	Kentaro IHARA	
Tokuteru UESUGI	Hiroshi OKUDA	Tomo OGURA	Tomomichi OZAKI	
Naoki OMURA	Keizo KASHIHARA	Tatsuya KIKUCHI	Takashi KUBOKI	
Yuji KUME	Equo KOBAYASHI	Sengo KOBAYASHI	Masakazu KOBAYASHI	
Yoshiki KOMIYA	Masahiro SAKAI	Kazunori SHIMIZU	Ai SERIZAWA	
Yorinobu TAKIGAWA	Hideo TAKIZAWA	Eiji TADA	Daisuke TERADA	
Yoshihiro TERADA	Masafumi NODA	Naoyuki NOMURA	Tomohiko HOJO	
Noritaka HORIKAWA	Yoshihiko HANGAI	Hiroaki MATSUMOTO	Yukio MIYASHITA	
Hiroyuki YAMADA	Takuya YAMAMOTO	Tokujiro YAMAMOTO	Hiroyuki WATANABE	



研究論文

アルミニウムの高電流アノード酸化時の焼けの抑制に及ぼす二段階アノード酸化の効果

佐野 拓馬・阿相 英孝 (145)

Mg-In系合金の組織と室温圧延特性

永田 涼太・戸村 好貴・糸井 貴臣 (152)

平板で座屈を防止する引張－圧縮試験の実験精度の検証

永谷 圭祐・吉田 健吾 (158)

速報論文

A1050 アルミニウム/SS400 鋼接合体の接合界面への発泡剤塗布によるポーラス化を用いた易分離の検討

増田 敦哉・半谷 禎彦・鈴木 良祐・松原 雅昭・青木 祥宏・藤井 英俊 (164)

共同刊行誌 “Materials Transactions Vol. 64, No. 4” 掲載論文要旨

Role of KMnO_4 -NaF Treatment in Galvanic Corrosion Resistance of AA5083 Coupled to Steel

Takumi Kosaba, Izumi Muto, Masashi Nishimoto and Yu Sugawara (167)

解説

新開発マグネシウム合金板材を適用した自動車用フロントフード部材の開発

千野 靖正・黄 新勝・中津川 勲・佐藤 雅彦・山崎 一正・小崎 匠・梅田 真裕・
春木 美穂・高山 亮平・中村 謙一・湯地 浩志・堀谷 貴雄 (168)

解説：小山田記念賞

低 CO_2 リサイクルアルミ材の開発

山崎 裕貴・永井 健史・蔵本 遼・中西 英貴・竹田 博貴・
浅井 千尋・倉本 剛・西川 直樹・増田 勇也 (175)

LMレビュー

アルミニウム水平リサイクルによる新幹線N700S内装材の開発

橋本 清春 (180)

連載講座 最新の分析機器・加工装置の特徴と可能性8

アブレスジェット加工技術の紹介とその加工事例

野坂 亮太 (184)

ダイバーシティリレーエッセイ～様々なひとの多様な視点～

無意識のバイアス

持田 美緒 (190)

国際的な交流を進めるうえでの学び

河原 康仁 (190)

研究部会紹介

マテリアルズ・インフォマティクス研究部会

杉尾 健次郎 (191)

学会便り

第35回軽金属セミナー「マグネシウム合金の基礎技術」(第4回)

行武 栄太郎 (193)

支部便り

東海支部「デポジション式金属3Dプリンティング」支部セミナー開催報告

赤堀 俊和 (194)

会告..... (i)

協賛行事..... (xvii)

行事カレンダー..... (xvii)

学会日誌..... (xviii)

編集後記..... (xix)

JOURNAL OF THE JAPAN INSTITUTE OF LIGHT METALS

Vol. 73, No. 4 April, 2023

RESEARCH ARTICLE

- Effect of two-step anodizing on suppression of burning of aluminum surface during high current anodizing**
Takuma SANO and Hidetaka ASOH (145)
- Microstructure of Mg-In alloy systems and their room temperature rollability**
Ryota NAGATA, Yoshiki TOMURA and Takaomi ITOI (152)
- Experimental accuracy of tension-compression test with antibuckling plates**
Keisuke NAGAYA and Kengo YOSHIDA (158)

LETTER

- Investigation of easy separation of A1050 aluminum / SS400 steel joints using foaming by applying a foaming agent to the joining interface**
Atsuya MASUDA, Yoshihiko HANGAI, Ryosuke SUZUKI, Masaaki MATSUBARA, Yasuhiro AOKI and Hidetoshi FUJII (164)

Published papers in Materials Transactions via JILM

- Role of KMnO_4 -NaF Treatment in Galvanic Corrosion Resistance of AA5083 Coupled to Steel**
Takumi Kosaba, Izumi Muto, Masashi Nishimoto and Yu Sugawara (167)

REVIEW

- Research for application of newly-developed magnesium alloy sheet to front hood of automobiles**
Yasumasa CHINO, Xincheng HUANG, Isao NAKATSUGAWA, Masahiko SATO, Kazumasa YAMAZAKI, Takumi KOZAKI, Masahiro UMEDA, Miho HARUKI, Ryohei TAKAYAMA, Kenichi NAKAMURA, Hiroshi YUCHI and Takao HORIYA (168)

OYAMADA MEMORIAL LECTURE

- Development of low- CO_2 recycled aluminum alloy**
Yuki YAMAZAKI, Takeshi NAGAI, Ryo KURAMOTO, Hidetaka NAKANISHI, Hiroki TAKEDA, Chihiro ASAI, Go KURAMOTO, Naoki NISHIKAWA and Yuya MASUDA (175)

LM REVIEW

- Development of interior materials for Shinkansen N700S by horizontal recycling of aluminum**
Kiyoharu HASHIMOTO (180)

LECTURE

- Introduction of abrasive water jet technology and processing examples**
Ryota NOZAKA (184)

ESSAYS ON DIVERSITY

- Unconscious Bias**
Mio MOCHIDA (190)
- Lessons for proceeding international fellowship**
Yasuhiro KAWAHARA (190)

BRANCH RESEARCH COMMITTEES

- The sectional meeting on materials informatics**
Kenjiro SUGIO (191)

JILM ACTIVITY

- Basic technologies of Magnesium alloys**
Eitaro YUKUTAKE (193)

FROM BRANCH ACTIVITY

- Report on branch seminar "Deposition type metal 3D printing" organized by Tokai branch, Japan Institute of Light Metals**
Toshikazu AKAHORI (194)

Editorial Committee

(Chairperson) Shoichi HIROSAWA	(Vice-chairperson) Yasumasa CHINO	Yoshihiro NAKAYAMA	
(Director in change) Ryoichi ICHINO			
(Key editors)			
Hidetoshi UMEDA	Masaya ENDO	Kohei KUBO	Takashi KUBO
Naoki TAKATA	Yosuke TAMURA	Daisuke NAGASAWA	Keitaro HORIKAWA
Tsutomu MORI			
(Editors)			
Ichiro AOI	Hidetaka ASOH	Hiroki ADACHI	Shinji ANDO
Ken-ichi IKEDA	Takaomi ITOI	Tsutomu ITO	Kentaro IHARA
Tokuteru UESUGI	Hiroshi OKUDA	Tomo OGURA	Tomomichi OZAKI
Naoki OMURA	Keizo KASHIHARA	Tatsuya KIKUCHI	Takashi KUBOKI
Yuji KUME	Equo KOBAYASHI	Sengo KOBAYASHI	Masakazu KOBAYASHI
Yoshiki KOMIYA	Masahiro SAKAI	Kazunori SHIMIZU	Ai SERIZAWA
Yorinobu TAKIGAWA	Hideo TAKIZAWA	Eiji TADA	Daisuke TERADA
Yoshihiro TERADA	Masafumi NODA	Naoyuki NOMURA	Tomohiko HOJO
Noritaka HORIKAWA	Yoshihiko HANGAI	Hiroaki MATSUMOTO	Yukio MIYASHITA
Hiroyuki YAMADA	Takuya YAMAMOTO	Tokujiro YAMAMOTO	Hiroyuki WATANABE



研究論文

電磁圧接したA5052アルミニウム合金/SPCC鋼重ね接合材の界面組織と強度

渡邊 満洋・佐野 悠介・熊井 真次 (99)

解 説

機械学習の概要と材料工学への応用例 (前編)

上杉 徳照 (104)

アルミニウム合金の最高押出速度を引き出す設計技術

林 沛征 (112)

連載講座 最新の分析機器・加工装置の特徴と可能性 7

量子ビーム (X線・陽電子・中性子) を使った先端計測・分析法

大島 永康・加藤 英俊・友田 陽 (117)

学会便り

第23回軽金属国際ワークショップ報告

松田 健二・李 昇原・土屋 大樹 (128)

關東支部特集2

発刊にあたって

田村 洋介 (130)

小野 幸子 (131)

伊藤 吾朗 (133)久保田 正広 (135)寺田 大将 (136)御手洗 容子 (137)桑原 利彦 (138)山中 晃德 (139)久保木 孝 (140)吉田 誠 (141)北蘭 幸一 (142)

公告..... (i)

協替行事 (xiii)

行事カレンダー..... (xiii)

学会日誌..... (xiii)

教員公募..... (xiv)

編輯後記..... (xv)

第144回春期大会プログラム.....(巻末)

JOURNAL OF THE JAPAN INSTITUTE OF LIGHT METALS

Vol. 73, No. 3 March, 2023

RESEARCH ARTICLE

Interfacial microstructure and strength of magnetic pulse welded A5052 aluminum alloy/SPCC steel lap joint

Mitsuhiro WATANABE, Yusuke SANO and Shinji KUMAI (99)

REVIEW

Overview and applications of machine learning to materials engineering (part 1)

Tokuteru UESUGI (104)

Design technology to bring the highest speed extrusion of aluminum alloys

Peizheng LIN (112)

LECTURE

Advanced measurements and analysis methods using quantum beams (X-ray, positron, and neutron)

Nagayasu OSHIMA, Hidetoshi KATO and Yo TOMOTA (117)

JILM ACTIVITY

Report for 23rd International light metals workshop

Kenji MATSUDA, Seungwon LEE and Taiki TSUCHIYA (128)

Special Issue “Kanto Branch” 2

Greeting of special issue on Kanto branch

Yosuke TAMURA (130)

My History in The Japan Institute of Light Metals: Reflections on Surface Finishing Research and Kanto Branch Activities

Sachiko ONO (131)

More than 40 years seeking for stimulating research

Goroh ITOH (133)

Kubota Laboratory, College of Industrial Technology, Nihon University

Masahiro KUBOTA (135)

Terada Lab., Department of Advanced Materials Science and Engineering, Faculty of Engineering, Chiba Institute of Technology

Daisuke TERADA (136)

Mitarai Lab, High temperature materials design, Graduate School of Frontier Science, The University of Tokyo

Yoko Yamabe-Mitarai (137)

Kuwabara Laboratory, Tokyo University of Agriculture and Technology

Toshihiko KUWABARA (138)

Yamanaka Research Group, Department of Mechanical Systems Engineering, Tokyo University of Agriculture and Technology

Akinori YAMANAKA (139)

Kuboki Laboratory & Kajikawa Laboratory, The University of Electro-Communications

Takashi KUBOKI (140)

Introduction of YOSHIDA lab. Kagami Memorial Res. Inst. For Mater. Sci.&Technol., Dept. of Modern Mechanical Engineering, Waseda University

Makoto YOSHIDA (141)

Materials Engineering Laboratory, Tokyo Metropolitan University

Koichi KITAZONO (142)

Utsunomiya University, Yamamoto Lab.

Tokujiro YAMAMOTO (143)

Editorial Committee

(Chairperson) Shoichi HIROSAWA (Vice-chairperson) Yasumasa CHINO Yoshihiro NAKAYAMA

(Director in charge) Ryoichi ICHINO

(Key editors)

Hidetoshi UMEDA

Naoki TAKATA

Tsutomu MORI

(Editors)

Ichiro AOI

Ken-ichi IKEDA

Tokuteru UESUGI

Naoki OMURA

Yuji KUME

Yoshiki KOMIYA

Yorinobu TAKIGAWA

Yoshihiro TERADA

Noritaka HORIKAWA

Hiroyuki YAMADA

Masaya ENDO

Yosuke TAMURA

Hidetaka ASOH

Takaomi ITOI

Hiroshi OKUDA

Keizo KASHIHARA

Equo KOBAYASHI

Masahiro SAKAI

Hideo TAKIZAWA

Masafumi NODA

Yoshihiko HANGAI

Takuya YAMAMOTO

Kohei KUBO

Daisuke NAGASAWA

Hiroki ADACHI

Tsutomu ITO

Tomo OGURA

Tatsuya KIKUCHI

Sengo KOBAYASHI

Kazunori SHIMIZU

Eiji TADA

Naoyuki NOMURA

Hiroaki MATSUMOTO

Tokujiro YAMAMOTO

Takashi KUBO

Keitaro HORIKAWA

Shinji ANDO

Kentaro IHARA

Tomomichi OZAKI

Takashi KUBOKI

Masakazu KOBAYASHI

Ai SERIZAWA

Daisuke TERADA

Tomohiko HOJO

Yukio MIYASHITA

Hiroyuki WATANABE



速報論文

MM-SPS プロセスにより生成した MgH_2 によるポーラス純マグネシウムの創製

伊野宮 匠・久保田 正広 (59)

解 説

高圧電解コンデンサ用高純度アルミニウム箔の直流エッチング挙動に及ぼす材料特性の影響

大澤 伸夫 (62)

共同刊行誌 “Materials Transactions Vol. 64, No. 2” 掲載論文要旨 ICAA18 特集

Role and Potential of Aluminium and Its Alloys for a Zero-Carbon Society

Shinji Kumai (69)

Design and Applications of Additively Manufactured Porous Aluminum Alloys

Koichi Kitazono, Ryoga Akimoto and Masaya Iguchi (69)

History of the Development of Extra Super Duralumin and Future Research Issues of Al-Zn-Mg Alloys

Hideo Yoshida (70)

Intermetallic Phase Layers in Cold Metal Transfer Aluminium-Steel Welds with an Al-Si-Mn Filler Alloy

Tina Bergh, Håkon Wiik Ånes, Ragnhild Aune, Sigurd Wenner, Randi Holmestad, Xiaobo Ren and Per Erik Vullum (70)

The Integration of Neural Network and High Throughput Multi-Scale Simulation for Establishing a Digital Twin for Aluminium Billet DC-Casting

Qiang Du, Kjerstin Ellingsen, Mohammed M' Hamdi, Astrid Marthinsen and Knut O. Tveito (71)

Effect of Casting Conditions on Surface Defect and Segregation of Strips Cast by a High-Speed Twin-Roll Caster

Kazuki Yamazaki and Toshio Haga (71)

Effect of Nozzle Shape on Periodic Surface Patterns of Al-3 mass% Si Alloy Strips Fabricated by Vertical-Type High-Speed Twin-Roll Casting

Shingo Kajimura, Seina Kurotatsu, Thai Ha Nguyen, Yohei Harada, Shinji Muraishi and Shinji Kumai (72)

Effect of Homogenization Heat Treatment on Elongation Anisotropy in Cold-Rolled and Annealed Al-Si Alloy Sheets Fabricated from Vertical-Type High-Speed Twin-Roll Cast Strips

Yuji Takehara, Yuki Ito, Thai Ha Nguyen, Yohei Harada, Shinji Muraishi and Shinji Kumai (72)

Thermodynamics of Formation of Al_3Fe Inter-Metallic Compound for Fe Removal from Molten Al-Mg Alloy

Yusei Shinomiya, Jimpei Yamamoto, Kengo Kato, Hideki Ono, Katsuhiro Yamaguchi and Kohei Komori (73)

Thermodynamics of Formation of Al_6Mn Inter-Metallic Compound for Mn Removal from Molten Al-Mg Alloy

Kengo Kato, Yusuke Hanai, Hideki Ono, Katsuhiro Yamaguchi and Kohei Komori (74)

Phase Composition and Microstructure of High Strength AA6xxx Aluminium Alloys with Nickel Additions

Pavel Shurkin, Geoff Scamans, Nilam Barekar, Longgang Hou, Tungky Subroto and Carla Barbatti (75)

Evolution of Microstructure and Elevated-Temperature Properties during Thermal Exposure with Transition Elements (V, Zr and Mo) in Al-Si 356 Type Cast Alloys

Dong Li, Kun Liu and X-Grant Chen (75)

Punchless Piecing Process of Aluminum Tube Wall by Impulsive Water Pressure

Minoru Yamashita, Katsuya Sugiura and Makoto Nikawa (76)

Influence of Initial Extruded Microstructures of Al-4.4Zn-1.4Mg Alloy Flat Bar on VDA Bendability

Amalina Aina Kaharudin, Ran Saeki, Mai Takaya, Tadashi Minoda and Tomoyuki Homma (76)

Effect of Short-Time Heating after ECAP Processing on Mechanical Properties of 6061 Aluminum Alloy

Naohiro Saruwatari, Hayate Kagami and Yoshihiro Nakayama (77)

Production of Ultrafine-Grained Aluminum Alloys in Upsized Sheets Using Process of Incremental Feeding High-Pressure Sliding (IF-HPS)

Takuya Komatsu, Takahiro Masuda, Yongpeng Tang, Intan Fadhlina Mohamed, Manabu Yumoto,

Yoichi Takizawa and Zenji Horita (77)

Effects of Sc and Zr Addition on the Mechanical Properties of 7000 Series Aluminum Alloys

Mai Takaya, Koji Ichitani and Tadashi Minoda (78)

Mechanical Properties and Microstructures of Highly Fe-Containing Al-Mg-Si Alloys Processed by Severe Plastic Deformation under High Pressure

Yongpeng Tang, Yuto Tomita and Zenji Horita (78)

Soft X-ray XAFS Analysis of Cluster Formation Process during 353K Aging in Al-Mg-Si Alloys

Serina Tanaka and Hiroki Adachi (79)

Modelling Age Hardening of Aluminium Alloys with Consideration of GP Zones or Clusters

Zhanli Guo, Nigel Saunders and Jianan Hu (79)

Self-Healing Coatings with Double-Layered Structure for Corrosion Protection of Aluminum Alloys

Saki Furukawa, Kota Hirasawa, Yuki Tsuji, Koshiro Suzuki and Makoto Chiba (80)

Interfacial Microstructure and Strength of Magnetic Pulse Welded A5052 Aluminum Alloy/SPCC Steel Lap Joint

Mitsuhiro Watanabe, Yusuke Sano and Shinji Kumai (80)

Appraising Tool Wear during Secondary Heating Assisted Dissimilar Friction Stir Welding between 6061 and 7075 Aluminium Alloys

Madhav Raturi and Anirban Bhattacharya (81)

Effects of Mn and Cu Additions on Solidification Microstructure and High-Temperature Strength of Cast Al-Fe Binary Alloy

Naoki Okano, Naoki Takata, Asuka Suzuki and Makoto Kobashi (81)

In-Line Hot Rolling of Al-Mg Strip Casts Using Unequal-Diameter Twin-Roll Caster

Toshio Haga and Masataka Furukawa (82)

Effects of Strain Rate on Stress-Strain Curves in 2024 Aluminum Alloy After Solution Heat Treatment

Masahiro Nishida, Satoshi Taniguchi, Ziyi Su, Masaki Sunda and Masanobu Murata (82)

Development of High-Strength Al-Cu-Mg Alloy by Combined Application of High-Pressure Torsion and Aging Treatment

Pengcheng Ma, Takahiro Masuda, Shoichi Hirose and Zenji Horita (83)

共同刊行誌 “Materials Transactions Vol. 64, No. 2” 掲載論文要旨

In Situ Quantitative Measurement of Stress Distribution in Tensile Specimen Using a Detachable Mechanoluminescence Film

Kuniaki Kanamaru, Kota Nagasao and Hiroshi Utsunomiya (83)

連載講座 最新の分析機器・加工装置の特徴と可能性6

超高分解能のFE-SEMを用いた軽金属試料の観察と分析例

金澤 俊之・高橋 秀之 (84)

LMコラム

学生生活を通して

栗原 健輔 (89)

はぐくむ

大同大学オープンキャンパスでのアルミニウム製品の紹介

高田 健 (90)

維持会員紹介

徳田工業株式会社

徳田 賢太郎 (91)

学会便り

第125回シンポジウム

「カーボンニュートラルに向けたアルミニウム溶解工程の効率化」

鈴木 雄詞 (93)

支部便り

第13回東海支部女性の会「女性が活躍する軽金属業界のお仕事紹介～私のキャリアプラン～」開催報告

伊藤 麻美 (94)

第14回東海支部女性の会「工場見学会」開催報告

富野 麻衣 (95)

中国四国支部 中堅企業支援セミナー開催報告

日野 実 (96)

会告..... (i)

学会日誌..... (xv)

協賛行事..... (xvi)

行事カレンダー..... (xvi)

編集後記..... (xvii)

JOURNAL OF THE JAPAN INSTITUTE OF LIGHT METALS

Vol. 73, No. 2 February, 2023

LETTER

Fabrication of porous pure magnesium by MgH_2 produced by mechanical milling and spark plasma sintering (MM-SPS) process

Takumi INOMIYA and Masahiro KUBOTA (59)

REVIEW

Effect of High Purity Aluminum Foil Stocks for Electrolytic Capacitor on DC Etching Behavior

Nobuo OSAWA (62)

Published papers in Materials Transactions via JILM—Special Issue on ICAA 18

Role and Potential of Aluminium and Its Alloys for a Zero-Carbon Society

Shinji Kumai (69)

Design and Applications of Additively Manufactured Porous Aluminum Alloys

Koichi Kitazono, Ryoga Akimoto and Masaya Iguchi (69)

History of the Development of Extra Super Duralumin and Future Research Issues of Al-Zn-Mg Alloys

Hideo Yoshida (70)

Intermetallic Phase Layers in Cold Metal Transfer Aluminium-Steel Welds with an Al-Si-Mn Filler Alloy

Tina Bergh, Håkon Wiik Ånes, Ragnhild Aune, Sigurd Wenner, Randi Holmestad, Xiaobo Ren and Per Erik Vullum (70)

The Integration of Neural Network and High Throughput Multi-Scale Simulation for Establishing a Digital Twin for Aluminium Billet DC-Casting

Qiang Du, Kjerstin Ellingsen, Mohammed M' Hamdi, Astrid Marthinsen and Knut O. Tveito (71)

Effect of Casting Conditions on Surface Defect and Segregation of Strips Cast by a High-Speed Twin-Roll Caster

Kazuki Yamazaki and Toshio Haga (71)

Effect of Nozzle Shape on Periodic Surface Patterns of Al-3 mass% Si Alloy Strips Fabricated by Vertical-Type High-Speed Twin-Roll Casting

Shingo Kajimura, Seina Kurotatsu, Thai Ha Nguyen, Yohei Harada, Shinji Muraishi and Shinji Kumai (72)

Effect of Homogenization Heat Treatment on Elongation Anisotropy in Cold-Rolled and Annealed Al-Si Alloy Sheets

Fabricated from Vertical-Type High-Speed Twin-Roll Cast Strips

Yuji Takehara, Yuki Ito, Thai Ha Nguyen, Yohei Harada, Shinji Muraishi and Shinji Kumai (72)

Thermodynamics of Formation of Al_3Fe Inter-Metallic Compound for Fe Removal from Molten Al-Mg Alloy

Yusei Shinomiya, Jimpei Yamamoto, Kengo Kato, Hideki Ono, Katsuhiro Yamaguchi and Kohei Komori (73)

Thermodynamics of Formation of Al_6Mn Inter-Metallic Compound for Mn Removal from Molten Al-Mg Alloy

Kengo Kato, Yusuke Hanai, Hideki Ono, Katsuhiro Yamaguchi and Kohei Komori (74)

Phase Composition and Microstructure of High Strength AA6xxx Aluminium Alloys with Nickel Additions

Pavel Shurkin, Geoff Scamans, Nilam Barekar, Longgang Hou, Tungky Subroto and Carla Barbatti (75)

Evolution of Microstructure and Elevated-Temperature Properties during Thermal Exposure with Transition Elements (V, Zr and Mo) in Al-Si 356 Type Cast Alloys

Dong Li, Kun Liu and X-Grant Chen (75)

Punchless Piecing Process of Aluminum Tube Wall by Impulsive Water Pressure

Minoru Yamashita, Katsuya Sugiura and Makoto Nikawa (76)

Influence of Initial Extruded Microstructures of Al-4.4Zn-1.4Mg Alloy Flat Bar on VDA Bendability

Amalina Aina Kaharudin, Ran Saeki, Mai Takaya, Tadashi Minoda and Tomoyuki Homma (76)

Effect of Short-Time Heating after ECAP Processing on Mechanical Properties of 6061 Aluminum Alloy

Naohiro Saruwatari, Hayate Kagami and Yoshihiro Nakayama (77)

Production of Ultrafine-Grained Aluminum Alloys in Upsized Sheets Using Process of Incremental Feeding High-Pressure Sliding (IF-HPS)

Takuya Komatsu, Takahiro Masuda, Yongpeng Tang, Intan Fadhlina Mohamed, Manabu Yumoto, Yoichi Takizawa and Zenji Horita (77)

Effects of Sc and Zr Addition on the Mechanical Properties of 7000 Series Aluminum Alloys

Mai Takaya, Koji Ichitani and Tadashi Minoda (78)

Mechanical Properties and Microstructures of Highly Fe-Containing Al-Mg-Si Alloys Processed by Severe Plastic Deformation under High Pressure

Yongpeng Tang, Yuto Tomita and Zenji Horita (78)

Soft X-ray XAFS Analysis of Cluster Formation Process during 353K Aging in Al-Mg-Si Alloys

Serina Tanaka and Hiroki Adachi (79)

Modelling Age Hardening of Aluminium Alloys with Consideration of GP Zones or Clusters

Zhanli Guo, Nigel Saunders and Jianan Hu (79)

Self-Healing Coatings with Double-Layered Structure for Corrosion Protection of Aluminum Alloys	Saki Furukawa, Kota Hirasawa, Yuki Tsuji, Koshiro Suzuki and Makoto Chiba (80)
Interfacial Microstructure and Strength of Magnetic Pulse Welded A5052 Aluminum Alloy/SPCC Steel Lap Joint	Mitsuhiro Watanabe, Yusuke Sano and Shinji Kumai (80)
Appraising Tool Wear during Secondary Heating Assisted Dissimilar Friction Stir Welding between 6061 and 7075 Aluminium Alloys	Madhav Raturi and Anirban Bhattacharya (81)
Effects of Mn and Cu Additions on Solidification Microstructure and High-Temperature Strength of Cast Al-Fe Binary Alloy	Naoki Okano, Naoki Takata, Asuka Suzuki and Makoto Kobashi (81)
In-Line Hot Rolling of Al-Mg Strip Casts Using Unequal-Diameter Twin-Roll Caster	Toshio Haga and Masataka Furukawa (82)
Effects of Strain Rate on Stress-Strain Curves in 2024 Aluminum Alloy After Solution Heat Treatment	Masahiro Nishida, Satoshi Taniguchi, Ziyi Su, Masaki Sunda and Masanobu Murata (82)
Development of High-Strength Al-Cu-Mg Alloy by Combined Application of High-Pressure Torsion and Aging Treatment	Pengcheng Ma, Takahiro Masuda, Shoichi Hirosawa and Zenji Horita (83)

Published papers in Materials Transactions via JILM

<i>In Situ</i> Quantitative Measurement of Stress Distribution in Tensile Specimen Using a Detachable Mechanoluminescence Film	Kuniaki Kanamaru, Kota Nagasao and Hiroshi Utsunomiya (83)
---	--

LECTURE

High-resolution imaging and analysis of light metal samples using ultrahigh resolution FE-SEM	Toshiyuki KANAZAWA and Hideyuki TAKAHASHI (84)
--	--

LM COLUMN

Through my student life	Kensuke KURIHARA (89)
--------------------------------	-----------------------

FOR OUR FUTURE BROTHERS & SISTERS

PR of Aluminum Alloy Products in DU Open Campus	Ken TAKATA (90)
--	-----------------

PROFILE of CORPORATE MEMBERS

Tokuda Industries Co., Ltd	Kentaro TOKUDA (91)
-----------------------------------	---------------------

JILM ACTIVITY

Optimization of aluminum melting procedures contributing to carbon neutral	Yuji SUZUKI (93)
---	------------------

FROM BRANCH ACTIVITY

Report on the 13th women’ s meeting “The introduction of jobs in the light metal industry where women play an active role” from Tokai branch	Asami ITO (94)
Report on the 14th women’ s meeting “Factory Tour” from Tokai branch	Mai TOMINO (95)
A report of seminar on supporting for small and medium enterprise by Chugoku Shikoku Branch of the Japan Institute of Light Metals	Makoto HINO (96)

Editorial Committee

(Chairperson) Shoichi HIROSAWA	(Vice-chairperson) Yasumasa CHINO	Yoshihiro NAKAYAMA	
(Director in charge) Ryoichi ICHINO			
(Key editors)			
Hidetoshi UMEDA	Masaya ENDO	Kohei KUBO	Takashi KUBO
Naoki TAKATA	Yosuke TAMURA	Daisuke NAGASAWA	Keitaro HORIKAWA
Tsutomu MORI			
(Editors)			
Ichiro AOI	Hidetaka ASOH	Hiroki ADACHI	Shinji ANDO
Ken-ichi IKEDA	Takaomi ITOI	Tsutomu ITO	Kentaro IHARA
Tokuteru UESUGI	Hiroshi OKUDA	Tomo OGURA	Tomomichi OZAKI
Naoki OMURA	Keizo KASHIHARA	Tatsuya KIKUCHI	Takashi KUBOKI
Yuji KUME	Equo KOBAYASHI	Sengo KOBAYASHI	Masakazu KOBAYASHI
Yoshiki KOMIYA	Masahiro SAKAI	Kazunori SHIMIZU	Ai SERIZAWA
Yorinobu TAKIGAWA	Hideo TAKIZAWA	Eiji TADA	Daisuke TERADA
Yoshihiro TERADA	Masafumi NODA	Naoyuki NOMURA	Tomohiko HOJO
Noritaka HORIKAWA	Yoshihiko HANGAI	Hiroaki MATSUMOTO	Yukio MIYASHITA
Hiroyuki YAMADA	Takuya YAMAMOTO	Tokujiro YAMAMOTO	Hiroyuki WATANABE



年頭の辞

新年のご挨拶

熊井 真次 (1)

座談会

三菱重工業株式会社・軽金属学会 トップ座談会「宇宙産業のものづくり技術と軽金属の可能性」

(2)

研究論文

断熱鋳型式連続鋳造法で作製した鍛造用Al-Si系合金の組織と高温強度に及ぼす銅濃度の影響

菅谷 直也・土肥 正芳・李 昇原・土屋 大樹・松田 健二 (9)

3104 アルミニウム合金板の絞り成形時の耳形成に及ぼすSi量の影響

井上 祐志・山口 正浩 (17)

MA-SPS プロセスで創製したMg-Al合金の硬さ

田中 拓海・久保田 正広 (24)

2つの発泡したポーラスアルミニウムの発泡直後のローラー成形による接合

鈴木 滉大・半谷 禎彦・天谷 賢児 (31)

共同刊行誌“Materials Transactions Vol. 64, No. 1”掲載論文要旨

Review—Importance of Atmospheric Gas Selection in Metal Additive Manufacturing: Effects on Spatter, Microstructure, and Mechanical Properties

Hiroki Amano, Takuya Ishimoto and Takayoshi Nakano (36)

Review—Microstructural Control and Functional Enhancement of Light Metal Materials via Metal Additive Manufacturing

Takuya Ishimoto and Takayoshi Nakano (36)

Residual Stress and Phase Stability of Titanium Alloys Fabricated by Laser and Electron Beam Powder Bed Fusion Techniques

Aya Takase (37)

Review—Metal Additive Manufacturing of Titanium Alloys for Control of Hard Tissue Compatibility

Aira Matsugaki, Tadaaki Matsuzaka and Takayoshi Nakano (37)

Review—Research and Development of Titanium-Containing Biomedical High Entropy Alloys (BioHEAs) Utilizing Rapid Solidification via Laser-Powder Bed Fusion

Ryosuke Ozasa, Aira Matsugaki, Takuya Ishimoto and Takayoshi Nakano (38)

Raking Process for Powder Bed Fusion of Ti-6Al-4V Alloy Powder Analyzed by Discrete Element Method

Masayuki Okugawa, Yusuke Isono, Yuichiro Koizumi and Takayoshi Nakano (38)

Influence of Input Energy Density on Morphology of Unique Layered Microstructure of γ -TiAl Alloys Fabricated by Electron Beam Powder Bed Fusion

Ken Cho, Naohide Morita, Hiromasa Matsuoka, Hiroyuki Y. Yasuda, Mitsuharu Todai, Minoru Ueda, Masao Takeyama and Takayoshi Nakano (39)

Evaluation of Liquid/Solid Interfacial Property for Ti-6 mass%Al-4 mass%V Alloy Using Electron-Beam Additive Manufacturing

Masashi Nakamoto and Toshihiro Tanaka (39)

Microstructures and Mechanical Properties of Carbon-Added Ti Composites Fabricated by Laser Powder Bed Fusion or Spark Plasma Sintering

Mingqi Dong, Weiwei Zhou, Zhenxing Zhou and Naoyuki Nomura (40)

Effect of Process Parameters on the Microstructure and High-Temperature Strengths of Titanium Aluminide Alloy Fabricated by Electron Beam Melting

Kazuhiro Gokan, Yudai Yamagishi, Kazuhiro Mizuta and Koji Kakehi (40)

連載講座 最新の分析機器・加工装置の特徴と可能性5

X線回折およびX線小角散乱を用いたアルミニウム合金の複合的評価

河野 研二・北原 周・三宅 綾・佐藤 和史・森 篤 (41)

随想

座右の銘—青春とは、心の若さである—

高橋 知司 (46)

チーズをついに見つけた!?～「チタンはどこへ消えた？」私の一枚(2017)その後～

渡辺 義見 (48)

ダイバーシティリレーエッセイ～様々なひとの多様な視点～

ダイバーシティについて考える

成田 麻未 (49)

まわるまわる、5回対称

田中 宏樹 (49)

学会便り

第143回秋期大会後記 ハイブリッド方式の導入について

小林 郁夫 (50)

第43回「若手の会」および「若手育成のための合同会合」

愛須 優輝 (53)

第33回「女性会員の会」報告

大島 智子 (54)

第7回男女共同参画セッション「キャリア形成～継続により開ける未来」

成田 麻未 (55)

国際連携を見据えたマグネシウム・チタン若手研究会

萩原 幸司・仲井 正昭・向井 敏司 (56)

支部便り

北陸支部 秋期講演会中堅企業支援セミナー開催報告

土屋 大樹 (57)

令和4年度軽金属学会東北支部講演会「最新の塑性加工における軽金属の技術動向」開催報告

山本 卓也 (58)

会告..... (i)

行事カレンダー..... (xiv)

協賛行事..... (xiv)

学会日誌..... (xv)

編集後記..... (xvi)

特別維持会員・維持会員名簿..... (巻末)

JOURNAL OF THE JAPAN INSTITUTE OF LIGHT METALS

Vol. 73, No. 1 January, 2023

OPENING ADDRESS

Shinji KUMAI (1)

JILM SUMMIT

Mitsubishi Heavy Industries / JILM Summit: Production Technologies and Potential of Light Metals in Space Industry (2)

RESEARCH ARTICLE

Effect of Cu concentration on high-temperature mechanical properties and microstructures of Al-Si alloy for forging fabricated by continuous casting process with the heat-insulating-mold

Naoya SUGATANI, Masayoshi DOHI, Seungwon LEE, Taiki TSUCHIYA and Kenji MATSUDA (9)

Effect of Si content on earing behavior in deep drawing of 3104 aluminum alloy sheets

Yuji INOUE and Masahiro YAMAGUCHI (17)

Hardness of Mg-Al alloy fabricated by MA-SPS process

Takumi TANAKA and Masahiro KUBOTA (24)

Joining of two foamed porous aluminum by roll forming immediately after foaming

Kodai SUZUKI, Yoshihiko HANGAI and Kenji AMAGAI (31)

Published papers in Materials Transactions via JILM

Review—Importance of Atmospheric Gas Selection in Metal Additive Manufacturing: Effects on Spatter, Microstructure, and Mechanical Properties

Hiroki Amano, Takuya Ishimoto and Takayoshi Nakano (36)

Review—Microstructural Control and Functional Enhancement of Light Metal Materials via Metal Additive Manufacturing

Takuya Ishimoto and Takayoshi Nakano (36)

Residual Stress and Phase Stability of Titanium Alloys Fabricated by Laser and Electron Beam Powder Bed Fusion Techniques

Aya Takase (37)

Review—Metal Additive Manufacturing of Titanium Alloys for Control of Hard Tissue Compatibility

Aira Matsugaki, Tadaaki Matsuzaka and Takayoshi Nakano (37)

Review—Research and Development of Titanium-Containing Biomedical High Entropy Alloys (BioHEAs) Utilizing Rapid Solidification via Laser-Powder Bed Fusion

Ryosuke Ozasa, Aira Matsugaki, Takuya Ishimoto and Takayoshi Nakano (38)

Raking Process for Powder Bed Fusion of Ti-6Al-4V Alloy Powder Analyzed by Discrete Element Method

Masayuki Okugawa, Yusuke Isono, Yuichiro Koizumi and Takayoshi Nakano (38)

Influence of Input Energy Density on Morphology of Unique Layered Microstructure of γ -TiAl Alloys Fabricated by Electron Beam Powder Bed Fusion

Ken Cho, Naohide Morita, Hiromasa Matsuoka, Hiroyuki Y. Yasuda, Mitsuharu Todai, Minoru Ueda, Masao Takeyama and Takayoshi Nakano (39)

Evaluation of Liquid/Solid Interfacial Property for Ti-6 mass%Al-4 mass%V Alloy Using Electron-Beam Additive Manufacturing

Masashi Nakamoto and Toshihiro Tanaka (39)

Microstructures and Mechanical Properties of Carbon-Added Ti Composites Fabricated by Laser Powder Bed Fusion or Spark Plasma Sintering

Mingqi Dong, Weiwei Zhou, Zhenxing Zhou and Naoyuki Nomura (40)

Effect of Process Parameters on the Microstructure and High-Temperature Strengths of Titanium Aluminide Alloy Fabricated by Electron Beam Melting

Kazuhiro Gokan, Yudai Yamagishi, Kazuhiro Mizuta and Koji Kakehi (40)

LECTURE

Combined evaluation of aluminum alloys using X-ray diffraction and small angle X-ray scattering

Kenji KONO, Amane KITAHARA, Aya MIYAKE, Kazufumi SATO, Atsushi MORI (41)

ESSAY AND LETTERS

Motto – Youth is not a time of life; it is a state of mind –

Tomoshi TAKAHASHI (46)

At Last, I Found My *Chitan* !?

Yoshimi WATANABE (48)

ESSAYS ON DIVERSITY

Think about “Diversity”

Mami MIHARA-NARITA (49)

Five-fold symmetry goes around and around

Hiroki TANAKA (49)

JILM ACTIVITY

- Report of the 143rd Conference of the Japan Institute of Light Metals Realization of hybrid sessions at JILM conference
Equo KOBAYASHI (50)
- Meeting report on “the 43rd Youth meeting” and “Associated meeting for youth development”
Yuki AISU (53)
- The 33rd women’s meeting of the Japan Institute of Light Metals
Tomoko OHSHIMA (54)
- The 7th Gender equality session “Career development～Open the way to the future by continuous effort”
Mami MIHARA-NARITA (55)
- Launch of Magnesium and Titanium Research Group for Young Researchers with an Eye on International Collaboration
Koji HAGIHARA, Masaaki NAKAI and Toshiiji MUKAI (56)

FROM BRANCH ACTIVITY

- A report of seminar on supporting for small and medium enterprise by Hokuriku branch, Japan Institute of Light Metals
(Autumn annual meeting of Hokuriku branch, 2022)
Taiki TSUCHIYA (57)
- Report on the 2022 lecture meeting held by Tohoku branch, The Japan Institute of Light Metals
Takuya YAMAMOTO (58)

Editorial Committee

(Chairperson) Shoichi HIROSAWA	(Vice-chairperson) Yasumasa CHINO	Yoshihiro NAKAYAMA	
(Director in change) Ryoichi ICHINO			
(Key editors)			
Kohei KUBO	Takashi KUBO	Takeo SAKURAI	Naoki TAKATA
Yosuke TAMURA	Daisuke NAGASAWA	Yasunori HYOGO	Keitaro HORIKAWA
Tsutomu MORI			
(Editors)			
Ichiro AOI	Hidetaka ASOH	Hiroki ADACHI	Shinji ANDO
Ken-ichi IKEDA	Takaomi ITOI	Tsutomu ITO	Kentaro IHARA
Tokuteru UESUGI	Hiroshi OKUDA	Tomo OGURA	Tomomichi OZAKI
Naoki OMURA	Keizo KASHIHARA	Tatsuya KIKUCHI	Takashi KUBOKI
Yuji KUME	Equo KOBAYASHI	Sengo KOBAYASHI	Masakazu KOBAYASHI
Yoshiki KOMIYA	Masahiro SAKAI	Kazunori SHIMIZU	Ai SERIZAWA
Yorinobu TAKIGAWA	Hideo TAKIZAWA	Eiji TADA	Daisuke TERADA
Yoshihiro TERADA	Masafumi NODA	Naoyuki NOMURA	Tomohiko HOJO
Noritaka HORIKAWA	Yoshihiko HANGAI	Hiroaki MATSUMOTO	Yukio MIYASHITA
Hiroyuki YAMADA	Takuya YAMAMOTO	Tokujiro YAMAMOTO	Hiroyuki WATANABE