

# 2008 年度業績 一田中 敏宏

## 学術論文・解説記事

1. T. Yoshikawa, S. Sato and T. Tanaka, Fabrication of low temperature foaming glass materials using hydrothermal treatment, *ISIJ International*, 48(2), 130-133, 2008
2. S. Sato, T. Yoshikawa, M. Nakamoto, T. Tanaka and J. Ikeda, Application of hydrothermal treatment on BF slag and waste glass for preparing lubricant materials in high strain rolling for ultrafine-grained steel production, *ISIJ International*, 48(2), 245-250, 2008
3. 高平信幸、吉川健、田中敏宏, 鉄スケール層中 wustite の分解およびその還元による表面ポーラス層の生成, *日本金属学会誌*, 72(3), 254-260, 2008
4. M. Suzuki and T. Tanaka, Composition dependence of microstructures formed by phase separation in multi-component silicate glass, *ISIJ International*, 48(4), 405-411, 2008
5. T. Yoshikawa, M. Hosokawa and T. Tanaka, MgO Effect on the Hydrothermal Solidification of Blast Furnace Slag, *ISIJ International*, 48(5), 564-569, 2008
6. S. Shimada, Y. Takada, J. Lee and T. Tanaka, Trial to Evaluate Wettability of Liquid Zn with Steel Sheets Containing Si and Mn, *ISIJ International*, 48(9), 1246-1250, 2008
7. T. Yoshikawa, S. Hirano, N. Hirai and T. Tanaka, Preparation of Porous Ceramics by the Hydrothermal Reaction of Blast Furnace Slag for Use in a Water-retentive Materials, *ISIJ International*, 48(9), 1322-1324, 2008
8. M. Suzuki and T. Tanaka, Materials design for the fabrication of porous glass using phase separation in multi-component borosilicate glass, *ISIJ International*, 48(9), 1524-1532, 2008
9. S. Katsuyama, Y. Takiguchi and M. Ito, Synthesis of Ca<sub>3</sub>Co<sub>4</sub>O<sub>9</sub> Ceramics by Polymerized Complex and Hydrothermal Hot-Pressing Processes and Investigation of its Thermoelectric Properties, *J. Mat. Sci.*, 43(10), 3553-3559, 2008
10. S. Katsuyama, H. Okada and K. Miyajima, Thermoelectric Properties of CeFe<sub>3</sub>CoSb<sub>12</sub>-MoO<sub>2</sub> Composite, *Materials Transactions*, 49(8), 1731-1736, 2008
11. K. Sawai, Y. Tsuboi, M. Shiota, N. Hirai and S. Osumi, Corrosion of Pb-Ca-Sn alloy during potential step cycles, *J. Power Sources*, 175(1), 604-612, 2008
12. 田中敏宏, 高温界面物性とその応用に関する研究, 溶融塩および高温化学, 51(1), 1 - 5, 2008
13. 吉川健、田中敏宏, 水熱反応を利用した高炉スラグならびにガラス材からの多孔質材料の作製, *高温学会誌*, 34(3), 117-122, 2008
14. 勝山茂, 希土類元素を含む熱電変換材料, *金属*, 78(8), 772-778, 2008
15. 田中敏宏, 合金の平衡状態図, *溶接学会誌*, 77(6), 576-581, 2008
16. 平井信充、前田壮一郎、勝山茂、田中敏宏, 水熱ホットプレス法による高炉スラグを原

- 料とした微細孔を有する固化体の作製および熱伝導率測定, 鉄と鋼, 95(1), 1 - 6, 2009
- 17. Y. Takada, S. Shimada, J. Lee, M. Kurosaki and T. Tanaka, "The effect of Si and Mn content on dynamic wetting of steel with liquid Zn", ISIJ International, 49(1), 100-104, 2009
  - 18. Y. Miyabayashi, M Nakamoto, T. Tanaka and T. Yamamoto, "A Model for Estimating Viscosity of Molten Aluminosilicate Containing Calcium fluoride", ISIJ International, 49(3), 343-348, 2009
  - 19. 田中敏宏、小木曾由美、上田満、李俊昊, 固体 CaO の毛細管現象を利用した溶鉄の脱硫反応の試み, 鉄と鋼, 95(3), 99-105, 2009

#### 国際会議プロシーディングス

- 1. T. Tanaka and T. Yoshikawa, Application of Hydrothermal Reaction to Recycling of BF Slag and Waste Glass, Proc. of SCANMET III - 3rd International Conference on Process Development in Iron and Steelmaking, 8-11, 83-92, 2008
- 2. T. Yoshikawa, S. Sato and T. Tanaka, Preparation of Low-temperature Foaming Glass by the hydrothermal Treatment of SiO<sub>2</sub>-Na<sub>2</sub>O-B<sub>2</sub>O<sub>3</sub> glass, Proc. of the 47th conference of metallurgists; WALSIM. Water, Air and Land: Sustainability Issues in Mineral and Metal Extraction, Winnipeg, Manitoba, Canada, Published by Canadian Institute of Mining, Metallurgy and Petroleum, 57-66, 2008
- 3. T. Tanaka, T. Yoshikawa and N. Hirai, Hydrothermal Slag/Glass Chemistry, Proc. of the 47th conference of metallurgists; WALSIM. Water, Air and Land: Sustainability Issues in Mineral and Metal Extraction, Winnipeg, Manitoba, Canada, Published by Canadian Institute of Mining, Metallurgy and Petroleum, 67-76, 2008
- 4. M. Suzuki and T. Tanaka, Prediction of Phase separation in Multi-Component Oxide Glass to Fabricate Functional Porous Glass Materials from Waste Slag, Proc. of the 47th conference of metallurgists; WALSIM. Water, Air and Land: Sustainability Issues in Mineral and Metal Extraction, Winnipeg, Manitoba, Canada, Published by Canadian Institute of Mining, Metallurgy and Petroleum, 77-86, 2008
- 5. T. Tanaka, Capillary Refining in Steelmaking Process, Proc. of SANO Symposium Proceedings, 78-83, 2008
- 6. T. Tanaka, Application of Capillary Refining to De-P and De-S of Liquid Iron Alloy, Proc. of 13th VDEh-ISIJ joint meeting of New Scope of Iron and Steelmaking Consistent with Environment], 176-182, 2008
- 7. M. Suzuki and T. Tanaka, Prediction of Phase Separation in Multi-component Silicate Glass for Creating Porous Glass Materials from Waste Slag, Proc. of the 4th Intern. Congress on the Science and Technology of Steelmaking, 575-578, 2008

8. K. Morita and T. Yoshikawa, Low Temperature Solidification Refining of Solar Grade Silicon using Si-Al Solvent, Proc. for the Silicon for the Chemical and Solar Industry XI, 51-59, 2008
9. N. Hirai, Y. Kimura, H. Vermesan, S. Kubo and K. Magara, Behavior of Lignosulfonate on Electrochemical Reaction on Lead Electrode in Sulfuric Acid Solution, Proc. of 7th Inter. Conf. on Lead Acid Batteries, 175-178, 2008
10. N. Hirai, T. Yokogawa, T. Tanaka, In-situ EC-AFM Observation upon Decay of Nano-Islands on Au(100) Electrode in 1-Butyl-3-Methyl-Imidazolium Room Temperature Molten Salt, Proc. of 2008 Joint Symposium on Molten Salts, 976-981, 2008
11. 高平信幸、吉川健、田中敏宏, 固体銅に対する液体 Bi の特異拡張濡れ現象とその接合への応用, Proc. 14th Symposium on "Microjoining and Assembly Technology in Electronics, 37-40, 2008
12. T. Tanaka, T. Yoshikawa and M. Suzuki, Design of Porous Glass & Slag Materials and its Application to Refining, Proc. of the VIII International Conf. On Molten Slag, Fluxes and Salts, 555-564, 2009

### 著書

1. 田中敏宏 (共著), 熱物性ハンドブック, 日本熱物性学会編, 養賢堂, 2008, 総ページ数 776
2. 勝山茂 (分担執筆), 熱電変換技術ハンドブック, 日本熱電学会編, エヌ・ティー・エス, 2008, 総ページ数 675
3. 吉川健(分担執筆), 太陽エネルギー有効利用最前線, NTS, 2008, 総ページ数 627

### 受賞

1. 鈴木賢紀、田中敏宏, Student Poster Award in the 6th International Conference on Borate Glasses, Crystals and Melts, 2008 年 8 月 19 日
2. 吉川健, 第 18 回日本金属学会奨励賞 (材料プロセシング部門), 2008 年 9 月 23 日
3. 近藤義正、山崎仲道、田中敏宏, 日本鉄鋼協会第 156 回秋季講演大会学生ポスターセッション 優秀賞, 2008 年 9 月 24 日
4. 大塚俊一、吉川健、田中敏宏, 日本鉄鋼協会第 156 回秋季講演大会学生ポスターセッション 努力賞, 2008 年 9 月 24 日
5. 塙優、吉川健、田中敏宏, 平成 20 年度第 3 回材料化学研究会・第 2 回鉄鋼プロセス研究会 合同研究会「優秀発表賞」, 2008 年 12 月 19 日

### **特許権などの知的財産権**

1. 塑性加工用潤滑方法および塑性加工方法ならびに加工材、発明者：宇都宮裕、高平信幸、田中敏宏、左海哲夫、宮本丈二、権利者：大阪大学、特開2008-155224、出願年月日：2006.12.21
2. 鉛蓄電池用電解液、鉛蓄電池用負極、該電解液及び／又は該負極を備えた鉛蓄電池、並びに鉛蓄電池用添加剤、発明者：平井信充、眞柄謙吾、池田努、久保智史、権利者：大阪大学および森林総合研究所、特開2008-152973、出願年月日：2006.12.14