

研究業績リスト

(2010年8月19日現在)

氏名：宮藤 久士

＜原著論文＞

1. H. Miyafuji and S. Saka (1996) Wood-inorganic composites prepared by sol-gel process V. Fire-resisting properties of the $\text{SiO}_2\text{-P}_2\text{O}_5\text{-B}_2\text{O}_3$ wood-inorganic composites., *Mokuzai Gakkaishi* **42**(1), 74-80.
2. H. Miyafuji and S. Saka (1997) Fire-resisting properties in several TiO_2 wood-inorganic composites and their topochemistry., *Wood Science & Technology* **31**(6), 449-455.
3. H. Miyafuji, S. Saka and A. Yamamoto (1998) $\text{SiO}_2\text{-P}_2\text{O}_5\text{-B}_2\text{O}_3$ wood-inorganic composites prepared by metal alkoxide oligomers and their fire-resisting properties., *Holzforschung* **52**(4), 410-416.
4. H. Miyafuji and S. Saka (1999) Topochemistry of SiO_2 wood-inorganic composites for enhancing water-repellency, *Materials Science Research International* **5**(4), 270-275.
5. M. Doi, S. Saka, H. Miyafuji and D.A.I. Goring (2000) Development of carbonized TiO_2 -woody composites for environmental cleaning., *Materials Science Research International* **6**(1), 15-21.
6. H. Miyafuji and S. Saka (2001) $\text{Na}_2\text{O}\text{-SiO}_2$ wood-inorganic composites prepared by the sol-gel process and their fire-resistant properties., *Journal of Wood Science* **47**(6), 483-489.
7. H. Miyafuji, H. Danner, M. Neureiter, C. Thomasser and R. Braun (2003) Effect of wood ash treatment on improving the fermentability of wood hydrolysate., *Biotechnology and Bioengineering* **84**(3), 390-393.
8. H. Miyafuji, H. Danner, M. Neureiter, C. Thomasser, J. Bvochora, O. Szolar and R. Braun (2003) Detoxification of wood hydrolysates with wood charcoal for increasing the fermentability of hydrolysates., *Enzyme and Microbial Technology* **32**(3-4), 396-400.
9. 藤田 聰, 宮藤久士, 坂 志朗 (2003) ゾルーゲル法による水系での防菌性無機質複合化木材の創製, *木材学会誌* **49**(5), 365-370.
10. H. Miyafuji, H. Kokaji and S. Saka (2004) Photostable wood-inorganic composites prepared by the sol-gel process with UV absorbent., *Journal of Wood Science* **50**(2), 130-135.
11. M. Neureiter, H. Danner, L. Madzingaidzo, H. Miyafuji, C. Thomasser, J. Bvochora, S. Bamusi and R. Braun (2004) Lignocellulose feedstocks for the production of lactic acid., *Chemical and Biochemical Engineering Quarterly* **18**(1), 55-63.
12. 新谷祐加, 宮藤久士, 坂 志朗 (2004) ゾルーゲル法によるTMSAC, TMSAH添加系

- 無機質複合化木材の耐蟻性, 木材保存 **30**(5), 204–211.
13. J.M. Bvochora, H. Danner, H. Miyafuji, R. Braun and R. Zvauya (2005) Variation of sorghum phenolic compounds during the preparation of opaque beer., Process Biochemistry **40**(2-3), 1207-1213.
 14. H. Miyafuji, T. Nakata, K. Ehara and S. Saka (2005) Fermentability of water-soluble portion to ethanol obtained by supercritical water treatment of lignocellulosics., Applied Biochemistry and Biotechnology **124**(1-3), 963-971.
 15. H. Tsue, T. Takimoto, C. Kikuchi, H. Yanase, K. Ishibashi, K. Amezawa, H. Miyashita, H. Miyafuji, S. Tanaka and R. Tamura (2006) Adsorptive Removal of endocrine disrupting chemicals by calix[4]crown oligomer: Significant improvement of removal efficiency by oligomerization., Chemistry Letters **35**(3), 254-255.
 16. H. Hou, H. Miyafuji and S. Saka (2006) Photocatalytic activities and mechanism of the supercritically treated TiO₂-activated carbon composites on decomposition of acetaldehyde., Journal of Materials Science **41**, 8295-8300.
 17. T. Nakata, H. Miyafuji and S. Saka (2006) Bioethanol from cellulose with supercritical water treatment followed by enzymatic hydrolysis., Applied Biochemistry and Biotechnology **130**(1-3), 476-485.
 18. H. Hou, H. Miyafuji, H. Kawamoto and S. Saka (2006) Supercritically-treated TiO₂-activated carbon composites for cleaning ammonia., Journal of Wood Science **52**(6), 533-538.
 19. H. Hou, H. Miyafuji, H. Kawamoto and S. Saka (2006) Photocatalytic activities of the supercritically treated TiO₂-activated carbon composites with selective conversion of gaseous ammonia to nitrogen., Wood Carbonization Research **3**(1), 29-36.
 20. 東野陽介, 宮藤久士, 芝田正志, 坂 志朗 (2007) SEM-EDXA 法によるアブラヤシの無機成分分析, 日本エネルギー学会誌 **86**, 973-977.
 21. 芝田正志, バーマン マヘンドラ、東野陽介, 宮藤久士, 坂 志朗 (2008) アブラヤシの化学成分組成分析, 日本エネルギー学会誌 **87**, 383-388.
 22. 宮藤久士, 坂 志朗 (2008) 加圧熱水処理技術を用いた木材からのバイオエタノール生産, 環境資源工学 **55**, 87-92.
 23. K. Yoshida, H. Miyafuji and S. Saka (2009) Effect of pressure on organic acid production from Japanese beech as treated in supercritical water., Journal of Wood Science **55**(3), 203-208.
 24. T. Nakata, H. Miyafuji and S. Saka (2009) Enzymatic saccharification of the water-soluble portion after hot-compressed water treatment of Japanese beech with xylanase and β-xylosidase., Journal of Wood Science **55**(3), 209-214.
 25. H. Miyafuji, K. Miyata, S. Saka, F. Ueda and M. Mori (2009) Reaction behavior of

- wood in an ionic liquid, 1-ethyl-3-methylimidazolium chloride., Journal of Wood Science **55**(3), 215-219.
26. T. Nakata, H. Miyafuji and S. Saka (2009) Ethanol production with β -xylosidase, xylose isomerase and *Saccharomyces cerevisiae* from the hydrolysate of Japanese beech after hot-compressed water treatment., Journal of Wood Science **55**(4), 289-294.
27. T. Nakata, H. Miyafuji and S. Saka (2009) Process integration of ethanol production from Japanese beech as treated with hot-compressed water treatment followed by enzymatic treatment., Journal of Wood Science **55**(4), 295-301.
28. A. Nakamura, H. Miyafuji, S. Saka, M. Mori and H. Takahashi (2010) Recovery of cellulose and xylan liquefied in ionic liquids by precipitation in anti-solvents., Holzforschung **64**, 77-79.
29. K. Yoshida, H. Miyafuji and S. Saka (2010) Methane production from organic acids obtained by supercritical water treatment of Japanese beech., Journal of Wood Science **56**(2), 160-165.
30. A. Nakamura, H. Miyafuji, and S. Saka (2010) Influence of reaction atmosphere on the liquefaction and depolymerization of wood in an ionic liquid, 1-ethyl-3-methylimidazolium chloride., Journal of Wood Science **56**(3), 256-261.
31. A. Nakamura, H. Miyafuji, and S. Saka (2010) Liquefaction behavior of Western red cedar and Japanese beech in the ionic liquid 1-ethyl-3-methylimidazolium chloride., Holzforschung **64**, 289-294.
32. M. Varman, H. Miyafuji, and S. Saka, Fractionation and characterization of oil palm (*Elaeis guineensis*) as treated by supercritical water, Journal of Wood Science. (accepted)
- <総説>
33. 宮藤久士, 坂 志朗 (2006) 古くて新しい木炭のゆくえ —エネルギー・環境浄化材料への応用—, 材料 **55**(4), 356-362.
34. 宮藤久士 (2007) バイオマス変換プロセスへのイオン液体の応用, 機能材料 **27**(10), 33-37.
- <著書>
35. 宮藤久士, 坂 志朗 (2001) 木炭, “バイオマス・エネルギー・環境”, (株) アイビーシー、330-340.
36. 宮藤久士 (2001) 薪・木炭自動車, “バイオマス・エネルギー・環境”, (株) アイビーシー、508.

37. 宮藤久士 (2001) 薪, “バイオマス・エネルギー・環境”, (株) アイピーシー、324-329.
38. 宮藤久士 (2001) ペレット化燃料, “バイオマス・エネルギー・環境”, (株) アイピーシー、341-346.
39. S. Saka and H. Miyafuji (2005) Application of Sol-Gel Processing to Wood-Inorganic Composites. In: Handbook of Sol-Gel Science and Technology Vol.3, Chapter 27, Kluwer Academic Publishers, 577-595.
40. 坂 志朗, 宮藤久士 (2007) 環境浄化型無機質複合炭素材料, “森林・木材を活かす大辞典”, 産調出版株式会社、430-431.
41. S. Saka and H. Miyafuji (2007) Bioethanol Production from Lignocellulosics Using Supercritical Water. In: Materials, Chemicals, and Energy from Forest Biomass, ACS Symposium Series 954, Edited by Dimitris S. Argyropoulos, 422-433.

<解説>

42. S. Saka, H. Miyafuji and F. Tanno (2001) Wood-inorganic composites prepared by the sol-gel process., Journal of Sol-Gel Science and Technology **20**, 213-215.
43. 宮藤久士 (2009) イオン液体のリグノセルロース利用への応用 (Application of ionic liquid to lignocellulosics), Cellulose Communications, **16**(1), 2-5.

<その他>

(講演)

44. 宮藤久士, 坂 志朗 (2001) ゾルーゲル法による無機質複合化木材の難燃性, 第 8 回難燃材料研究会. (1月 18 日)
45. 宮藤久士, 尾ヶ口和典, 坂 志朗 (2004) 各種木炭の特性, 日本木材学会第 8 期研究分科会第四分科会／第五分科会合同シンポジウム「木質系材料の炭素化・エネルギー化による新展開」. (12月 9 日)
46. 宮藤久士, 尾ヶ口和典, 坂 志朗 (2004) 各種木炭の特性と利用, 第 255 回日本材料学会木質部門委員会定例研究会. (7月 21 日)
47. 宮藤久士, 坂 志朗 (2005) 超臨界水処理技術を用いたリグノセルロースからのバイオエタノール生産, 日本材料学会関西支部材料シンポジウム「材料が創造する持続的発展」～ナノスケールから地球スケールへ～. (12月 2 日)
48. 宮藤久士 (2006) どこまでできるかバイオマスの利用, 日本材料学会エネルギー・環境材料部門企画シンポジウム「エネルギー・環境材料の新しい潮流」. (1月 19 日)
49. 宮藤久士 (2006) エネルギー・環境材料としての木質炭化物の特性と利用, 第 31 回炭化物利用研究会. (1月 26 日)

50. 宮藤久士, 坂 志朗 (2006) 超臨界水法によるリグノセルロースからのバイオエタノール, 第 36 回木材の化学加工研究会シンポジウム. (6 月 22 日)
51. 宮藤久士, 坂 志朗 (2008) 加圧熱水処理技術による木材からのバイオエタノール生産, 環境資源工学会第 120 回例会. (6 月 12 日)
52. 宮藤久士 (2009) これからのバイオ燃料技術動向 非酵母発酵系によるバイオエタノール生産技術, BioFuels World 2009 Conference & Expo 第 3 回バイオ燃料製造装置& 材料展 (7 月 22 日) .
53. 宮藤久士 (2009) イオン液体による木材の液化, 第 39 回木材の化学加工研究会シンポジウム. (10 月 2 日)

(国際学会発表要旨集)

54. S. Saka, H. Miyafuji and F. Tanno (1995) Composites from wood with inorganic materials., Proceedings of Pacificchem. '95, ACS Symposium #538, Chemical Modification of Lignocellulosic Materials, Dec. 20-22, Hawaii, USA.
55. H. Miyafuji and S. Saka (1998) Fire-resisting wood-inorganic composites as prepared by the sol-gel process., Proceedings of The Fourth Pacific Rim Bio-Based Composites Symposium, Nov. 2-5, 1998, Bogor, Indonesia, 405-421.
56. H. Miyafuji and S. Saka (1998) Wood-inorganic composites as prepared by the sol-gel process., Proceedings of The Second International Wood Science Seminar, Nov. 6-7, 1998, Serpong, Indonesia, B34.
57. S. Saka and H. Miyafuji (1998) Chemical conversion of biomass resources to useful chemicals., Proceedings of The Second International Wood Science Seminar, Nov. 6-7, 1998, Serpong, Indonesia, D27-D28.
58. M. Doi, S. Saka and H. Miyafuji (1999) Photo-catalytic inorganic-organic hybrid composites with environmental cleanability from wood by sol-gel process., Proceedings of the 4th International Conference on Ecomaterials, Nov. 9-12, 1999, Gifu, Japan, 289-292.
59. H. Miyafuji and S. Saka (1999) Topochemistry of SiO₂ wood-inorganic composites for property enhancement of wood., Proceedings of 10th International Symposium on Wood and Pulping Chemistry, volume III, June 7-10, 1999, Yokohama, Japan, 282-287.
60. H. Miyafuji and S. Saka (2000) A recent progress in fire-resisting wood-inorganic composites prepared by the sol-gel process., Proceedings of The Fifth Pacific Rim Bio-Based Composites Symposium, Dec. 10-13, 2000, Canberra, Australia, 707-716.
61. H. Miyafuji, H. Danner, M. Neureiter, C. Thomasser, J. Bvochora, O. Szolar and R. Braun (2002) Detoxification of wood hydrolysates obtained by dilute sulfuric acid hydrolysis with wood charcoal or wood ash for improving their fermentability., Proceedings of the Kyoto University International Symposium on Post-Petrofuels in the 21st century, Sep. 3-4, Montreal, Canada, 237-240.

62. M. Doi, H. Tokoro, K. Goto, H. Miyafuji and S. Saka (2002) Carbonized TiO₂-woody composites for environmental cleaning., Proceedings of the Kyoto University International Symposium on Post-Petrofuels in the 21st century, Sep. 3-4, Montreal, Canada, 215-218.
63. K. Ehara, E. Minami, H. Miyafuji, S. Saka and H. Kawamoto (2002) Production of ethanol from biomass resources in Kyoto city., Proceedings of the Kyoto University International Symposium on Post-Petrofuels in the 21st century, Sep. 3-4, Montreal, Canada, 231-234.
64. H. Miyafuji, H. Danner, M. Neureiter, C. Thomasser, J. Bvochora, O. Szolar and R. Braun (2002) Effects of wood charcoal or wood ash treatment on improving the fermentability of wood hydrolysates., Proceedings of the 1st International Cellulose Conference, Nov. 6-8, Kyoto, Japan, 157.
65. H. Miyafuji, H. Danner, M. Neureiter, C. Thomasser, J. Bvochora, O. Szolar and R. Braun (2003) Detoxification of wood hydrolysates obtained by dilute sulfuric acid hydrolysis with wood charcoal or wood ash for improving their fermentability., Proceedings of the 1st International Symposium on Sustainable Energy System (Kyoto University, 21COE), March 13-14, Kyoto, Japan, 75.
66. T. Nakata, H. Miyafuji, K. Ehara and S. Saka (2003) Bio-ethanol from cellulose with supercritical water treatment followed by sulfuric acid hydrolysis., Proceedings of the 1st International Symposium on Sustainable Energy System (Kyoto University, 21COE), March 13-14, Kyoto, Japan, 174.
67. H. Hou, H. Miyafuji and S. Saka (2003) Supercritically Treated TiO₂-activated carbon composites for cleaning acetaldehyde., Proceedings of the 1st International Symposium on Sustainable Energy System (Kyoto University, 21COE), March 13-14, Kyoto, Japan, 187.
68. H. Miyafuji, T. Nakata, K. Ehara and S. Saka (2003) Bioethanol production from supercritically-treated cellulose., Proceedings of the 2nd Symposium on Bioenergy (Kyoto University, 21COE), Oct. 22, Kyoto, Japan, 69-77.
69. H. Miyafuji, T. Nakata, K. Ehara and S. Saka (2004) Ethanol fermentability of the hydrolysate obtained by supercritical water treatment of lignocellulosics., Abstracts of the 26th Symposium on Biotechnology for Fuels and Chemicals, May 9-12, Chattanooga, USA, 273.
70. H. Miyafuji, S. Saka and T. Nakata (2004) Bioethanol from lignocellulosics by supercritical water technology. – Inhibitors for ethanol fermentation in the lignocellulosics hydrolysate. –, Proceedings of the 2nd International Symposium on Sustainable Energy System (Kyoto University, 21COE), Dec. 17-18, Kyoto, Japan, 59.
71. H. Miyafuji, T. Nakata and S. Saka (2004) Fermentability of water-soluble portion to ethanol obtained by supercritical water treatment of lignocellulosics., Proceedings of the 2nd International Symposium on Sustainable Energy System (Kyoto University, 21COE), Dec. 17-18, Kyoto, Japan, 209.
72. T. Nakata, H. Miyafuji and S. Saka (2004) Bioethanol from cellulose with

- supercritical water treatment followed by enzymatic hydrolysis., Proceedings of the 2nd International Symposium on Sustainable Energy System (Kyoto University, 21COE), Dec. 17-18, Kyoto, Japan, 210.
73. H. Hou, H. Miyafuji, H. Kawamoto and S. Saka (2004) Supercritically-Treated TiO₂-Activated Carbon Composites for Cleaning Ammonia., Abstracts of the 2nd International Symposium on Sustainable Energy System (Kyoto University, 21COE), December 17-18, Kyoto, Japan, 221.
74. T. Nakata, H. Miyafuji and S. Saka (2005) Bioethanol from cellulose with supercritical water treatment followed by enzymatic hydrolysis., Abstracts of the 27th Symposium on Biotechnology for Fuels and Chemicals, May 1-4, Denver, USA, 101.
75. H. Miyafuji, T. Nakata and S. Saka (2005) Utilization of wood charcoal for the bioethanol production from woody biomass., Abstract of IAWPS 2005 International Symposium on Wood Science and Technology Volume I , November 27-30, Yokohama, Japan, 217-218.
76. T. Nakata, H. Miyafuji and S. Saka (2005) Inhibitory effect by the contaminants on the bioethanol production., Abstract of IAWPS 2005 International Symposium on Wood Science and Technology Volume II , November 27-30, Yokohama, Japan, 281-282.
77. H. Hou, H. Miyafuji and S. Saka (2005) Supercritically-treated TiO₂ activated carbon composites for cleaning ammonia., Abstract of IAWPS 2005 International Symposium on Wood Science and Technology Volume II , November 27-30, Yokohama, Japan, 285-286.
78. H. Miyafuji, T. Nakata and S. Saka (2005) Enzyme activity on the hydrolysates by hot-compressed water treatment of Japanese ceder., International Chemical Congress of Pacific Basin Societies, December 15-20, Hawaii, USA.
79. T. Nakata, H. Miyafuji, K. Ehara and S. Saka (2005) Bioethanol production from Japanese beech with supercritical water treatment followed by the simultaneous saccharification and fermentation., International Chemical Congress of Pacific Basin Societies, December 15-20, Hawaii, USA.
80. S. Saka and H. Miyafuji (2006) Sugars for Bioethanol Production from Lignocellulosics by Supercritical Water Technology, Abstracts of the 3rd International Symposium on Sustainable Energy System, Kyoto, Japan, August 30-September 1, 164.
81. H. Miyafuji, T. Nakata and S. Saka (2006) Bioethanol from Lignocellulosics by Supercritical Water Technology – Inhibitors for Ethanol Fermentation in the Lignocellulosics Hydrolysate –, Abstracts of the 3rd International Symposium on Sustainable Energy System, Kyoto, Japan, August 30-September 1, 165.
82. H. Azuma, H. Miyafuji and S. Saka (2006) Saccharification by Hot-Compressed Water Treatment of Amorphous Cellulose Prepared from DMAc/LiCl Solvent System, Abstracts of the 3rd International Symposium on Sustainable Energy

System, Kyoto, Japan, August 30-September 1, 258.

83. T. Nakata, H. Miyafuji and Shiro Saka (2006) Bioethanol from Supercritical Water Treated Cellulose Followed by Enzymatic Hydrolysis and Fermentation, Abstracts of the 3rd International Symposium on Sustainable Energy System, Kyoto, Japan, August 30-September 1, 264.
84. T. Nakata, H. Miyafuji and S. Saka (2006) Bioethanol from Japanese Beech with Supercritical Water Treatment Followed by Simultaneous Saccharification and Fermentation, Abstracts of the 3rd International Symposium on Sustainable Energy System, Kyoto, Japan, August 30-September 1, 265.
85. H. Miyafuji, T. Nakata and S. Saka (2006) Fermentability of the Water-Soluble Portion Obtained by Hot-Compressed Water Treatment of Lignocellulosics, Abstracts of the 3rd International Symposium on Sustainable Energy System, Kyoto, Japan, August 30-September 1, 266.
86. H. Miyafuji, T. Nakata and S. Saka (2006) Supercritical water technology for producing bioethanol from lignocellulosics., Proceedings of the Renewable Energy 2006, Oct. 9-13, Chiba, Japan, 1042-1045.
87. H. Miyafuji, T. Nakata and S. Saka (2006) Fermentability of the water-soluble portion obtained by hot-compressed water treatment of lignocellulosics., Proceedings of the 2nd Joint International Conference on "Sustainable Energy and Environment (SEE2006)" vol.1, Nov. 21-23, Bangkok, Thailand, 490-495.
88. H. Miyafuji, T. Nakata and S. Saka (2006) Fermentability of the water-soluble portion obtained by hot-compressed water treatment of lignocellulosics., Proceedings of the 8th Kyoto University International Symposium. Towards harmonious coexistence within human and ecological community on this planet, Nov. 23-25, Bangkok, Thailand, 83.
89. P. Tamunaidu, H. Miyafuji, N. Matsui, Y. Ideta and S. Saka (2008) Potential of Nipah as New Energy Crop, Abstracts of 50 Golden Year of Friendship 2008, Indonesia-Japan Symposium, Jakarta, Indonesia, November 1-2, 48.
90. P. Natthanon, Y. Nakamura, S. Masuda, L. Xin, K. Yamauchi, H. Miyafuji, H. Kawamoto and S. Saka (2008) Eco-Ethanol Production from Lignocellulose with Hot-Compressed Water Treatment Followed by Acetic Acid Fermentation and Hydrogenolysis, Abstracts of 50 Golden Year of Friendship 2008, Indonesia-Japan Symposium, Jakarta, Indonesia, November 1-2, 53.
91. S. Saka , M. V. Munusamy, M. Shibata, Y. Tono and H. Miyafuji (2008) (Technical Session I) Chemical Constituents of the Different Anatomical Parts of the Oil Palm (*Elaeis Guineensis*) for Their Sustainable Utilization, Natural Resources & Energy Environment JSPS-VCC Program on Environmental Science, Engineering and Ethics (Group IX) Kyoto, Japan, November 24-25, 2008, 19-34.
92. S. Saka, N. Phaiboonsilpa, Y. Nakamura, S. Masuda, X. Lu, K. Yamauchi, H. Miyafuji and H. Kawamoto (2009) Bioethanol Production from Lignocellulosics with

Hot-Compressed Water Treatment Followed by Acetic Acid Fermentation and Hydrogenolysis, IEA Bioenergy Conference Biofuels & Bioenergy: A Changing Climate, Vancouver, Canada, August 23-26, 2009, 78.

(講演予稿集など)

93. 宮藤久士, 坂 志朗 (2001) ゾルーゲル法による無機質複合化木材の難燃性, 第 8 回難燃材料研究会要旨集, 8-11.
94. 宮藤久士, 尾ヶ口和典, 坂 志朗 (2004) 各種木炭の特性, 日本木材学会第 8 期研究分科会報告書, V-82-V-90.
95. 宮藤久士, 尾ヶ口和典, 坂 志朗 (2004) 各種木炭の特性と利用, 第 255 回日本材料学会木質部門委員会定例研究会講演要旨, 5-14.
96. 宮藤久士, 坂 志朗 (2006) 超臨界水法によるリグノセルロースからのバイオエタノール, 第 36 回木材の化学加工研究会シンポジウム講演集, 7-10.
97. 宮藤久士 (2009) これからバイオ燃料技術動向 非酵母発酵系によるバイオエタノール生産技術, BioFuels World 2009 Conference & Expo 第3回バイオ燃料製造装置&材料展 バイオ燃料専門セミナーテキスト, 15-25.
98. 宮藤久士 (2009) イオン液体による木材の液化, 第 39 回木材の化学加工研究会シンポジウム講演集, 27-32.