

REFERENCE

- Antonelli, D. and Ying, J. (1995) Synthesis of Hexagonally Packed Mesoporous TiO₂ by a modified Sol-gel Method. Angew. Chem. Int. Ed. Engl., 34, 2014
- Baerlocher, Ch., Meier, W. M. and Olson, D. H. (Eds.) (2001) Atlas of Zeolite Framework Types 5th Revised Edition. Elsevier. Amsterdam
- Barrer, R. M. (Ed.) (1983) The hydrothermal Synthesis of Zeolites. Academic Press: London
- Barrer, R. M. (1958) Proc. Chem. Soc. 99
- Barrer, R. M. (1979), Chemical Nomenclature and Formulation of Compositions of Synthetic and Natural Zeolite. Pure Appl. Chem. 51, 1091
- Barrer, R. M. (Ed.) (1978) Zeolites and Clay Minerals as Sorbents and Molecular Sieves. Academic Press. New York.
- Barrer, R. M. and Hinds, L. (1953) J. Chem. Soc. 1879
- Barsoum, M. W. (Ed.) (1997) Structure of Ceramics: Fundamentals of Ceramics. The McGraw-Hill Companies:
- Baur, W. H. and Fischer, R. X. (Eds.) (2000) Zeolite Structure Codes ABW to CZP. Subvolume B in Landolt-Bornstein, Numerical Data and Functional Relationships in Science and Technology. New Series. Group IV: Physical Chemical, Volume 14, Microporous and other Framework Materials with Zeolite-Type Structure. Springer. Berlin.
- Bell, A. T. (1999) NMR applied to zeolite synthesis. Coll. and Surf. A: Physicochem. Eng. Asp., 158, 221
- Breck, D. W. (1974) Zeolite Molecular Sieves, Structure, Chemistry and Use. John Wiley & Son Inc. New York.
- Brinker, C. and Scherer, G. (Eds.) (1990) The Physics and Chemistry of Sol-Gel Processing: Sol-Gel Science. Academic: New York
- Cabrera, S., Haskouri, J. E., Guillem, C., Latorre, J., Beltran-Porter, A., Beltran-Porter, D., Marcos, M. D. and Amoros, P. (2000) Generalised Synthesis of Ordered Mesoporous Oxides, the Altrane route. Solid State Sci., 2, 405

- Caputo, D., De Gennaro, B., Liguori, B., Testa, F., Carotenuto, L. and Piccolo, C. (2000) A preliminary investigation on kinetics of zeolite. A crystallization using optical diagnostics. Mat. Chem. and Phys., 66, 120
- Chatelain, J., Patarin, J., Fousson, E., Soulard, M., Cuth, J. L. and Schulz, P. (1995) Synthesis and characterization of high-silica-zeolite RHO prepared in the presence of 18-crown-6 ether as organic template. Micropor. Mat., 4, 231
- Chatelain, T., Patarin, J., Farre, R., Petigny, O. and Schulz, P. (1996) Synthesis and characterization of 18-crown-6 ether-containing KFI-type zeolite. Zeolites, 17, 328
- Corma, A. (1997) From Microporous to Mesoporous Molecular sieves Materials and their Use in Catalyst. Chem. Rev., 97, 2373
- Corma, A., Martinez, A. and Martinez, C. (1994) Isobutane/2-butene Alkylation on Ultrastable Y Zeolites. Influence of Zeolite Unit Cell Size. J. Catal. 146, 185
- Cundy, C. S. (1998) Microwave techniques in the synthesis and modification of zeolite catalyst: A. Review. Collect. Czech. Chem. Commun., 63, 1699
- Davis, M. E. (1991) Zeolites and molecular sieves: Not just ordinary catalysts. Ind. Eng. Chem. Res. 30, 1675
- Davis, M. E. (1993) New vistas in zeolite and molecular sieve catalysis. Acc. Chem. Res. 26, 111
- De Moor, P. E. A., Beelen, T. P. M., VanSanten, R. A., Beck, L. W. and Davis, M. E., (2000) Si-MFI crystallization using a "dimer" and "trimer" of TPA studied with small-angle X-ray scattering. J. Phys. Chem. B, 104, 7600
- DeLuca, P., Crea, F., Fonseca, A. and Nagy, J. B. (2001) Direct formation of self-bon pellets during the synthesis of mordenite and ZSM-11 zeolites from low water content systems. Micropor. Mesopor. Mat., 42, 37
- Dougnier, F. and Guth, J. L. (1996) Possible recovery of crown ethers occluded in FAU- and EMT-type zeolites. Micropor. Mat., 6, 79
- Dyer, A. (Ed.). (1988) The Structure of Zeolites: An Introduction to Zeolite Molecular Sieves. John Wiley and Sons: New York

- Eitel, W. (Ed.) (1996) Silicate Science Vol. IV Hydrothermal Systems. Academic Press. New York.
- Ertl, G., Knozinger, H. and Weitkamp, J. (Eds.) (1997) Sol-gel Process, Handbook of Heterogeneous Catalyst Vol.1. Wiley-VCH:
- Fan, L., Nakamura, I., Ishida, S. and Fjimoto, K. (1997) Supercritical-phase alkylation reaction on solid acid catalysts: Mechanistic study and catalyst development. Ind. Eng. Chem. Res. 36, 1458
- Ghobarkar, H., Schaf, O. and Guth, U. (1999) Zeolites from kitchen to space. Prog. Sol. St. Chem., 27, 29
- Gittleman, C. S., Bell, A. T. and Radke, C. J. (1996) The role of alkali cations in zeolite synthesis from silicate solutions containing N,N,N,-trimethyl-1-adamantammonium cations, Cat. Lett., 38, 1
- Gottardi, G. and Gall, E. (1985) Natural Zeolites. Springer Verlag. Berlin.
- Ikeda, T., Kodaira, T. Izumi, F. Kamiyama, T. and Ohshima, K. (2000) Neutron powder diffraction study of potassium clusters in zeolite K-LTA. Chem. Phys. Lett. 318, 93
- Jansen, J. C., Arafat, A., Barakat, A. K. and VanBekum, H. (Eds.) (1992) Microwave technique in Zeolite Synthesis: Synthesis of Microporous Material Vol. 1, Van Nostrand Reinhold: New York
- Koegler, J. H., Ban Bekum, H. and Jansen, J. C. (1997) Growth model of oriented crystals of zeolite Si-ZSM-5. Zeolite, 19, 262
- Kooli, F., Kiyazumi, Y. and Mizukami, F. (2002) Effect of alkali cations on the conversion of H-magadilte in tetramethylammonium hydroxide-water-1,4 dioxane system. Mat. Chem. Phys., 77, 134
- Kresge, C., Leonowicz, M., Roth, M., Vartuli, J. and Beck, J. (1992) Ordered Mesoporous Molecular Sieves Synthesized by a Liquid-Crystal Template Mechanism. Nature, 359, 710
- Lee, G. S., Nakagawa, Y., Hwang, S. J., Davis, M. E., Wagner, P., Beck, L. and Zones, S. I. (2002) Organocations in zeolite synthesis: Fused bicyclo [I.m.0] cations and the discovery of zeolite SSZ-48. J. Am. Chem. Soc. 124, 7024

- Machado, F. J., Lopez, C. M., Centeno, M. A. and Urbina, C. (1999) Template-free synthesis and catalytic behavior of aluminar-rich MFI -type zeolites. App. Cat. A: General, 181, 29
- Meier, W. M., Olson, D. H. and Baerlocher, Ch. (Eds.) (1996) Atlas of Zeolites Structure Type, 4th Revised Edition. Elsevier. London.
- Moini, A., Schruitt, K. D. and Polomski, R. F. (1997) Pentamethyl diethylene triamine and its quaternary cations as direct agents in zeolite synthesis: monitoring the stability of direct agents under hydrothermal conditions. Zeolite, 18, 2
- Monnier, A., Schuth, F., Huo, Q., Kumar, D., Margolese, D., Maxwell, R., Stucky, G., Krishnamurty, M., Petroff, P., Firouzi, A., Janiche, J. and Chmelka, B. (1993) Cooperative Formation of Inorganic-organic Interfaces in the Synthesis of Silicate Mesostructure. Science, 261, 1290
- Murayama, N., Yamamoto, H. and Shibata, J. (2002) Mechanism of zeolite synthesis from coal fly ash by alkali hydrothermal reaction. Int. J. Miner. Process., 64, 1
- Naccache, C. and Ben Taarit, Y. (1984) Zeolite: Science and Technology. Ramoa Ribeiro F., Rodrigues A.E., Rollmann L.D., Naccache C. (Eds.) NATO ASI Series. The Hague. Boston.
- Opornsawad, Y., Ksapabutr, B., Wongkasemjit, S. and Laine, R. (2001) Formation and Structure of Tris(alumatranxyloxy-*I*-propyl)amine Directly from Alumina and Triisopropanolamine. Eur. Polym. J., 37(9),1877.
- Piboonchaisit, P., Wongkasemjit, S. and Laine, R. (1999) A Novel Route to Tris (silatranxyloxy-*I*-propyl)amine Directly from Silica and Triisopropanolamine, Part I. Science-Asia, J. Sci. Soc. Thailand, 25, 113
- Rabinovich, E. M. (Ed.) (1988) Particulate silica gels and glasses from the sol-gel process: Sol-Gel Technology For Thin Films, Fibers, Performs, Electronics and Specially Shapes. Noyes Publication: New Jersey,
- Rao, K. J., Vaidhyanathan, B., Ganguli, M. and Ramakrishnan, P. A. (1999) Synthesis of inorganic solids using microwave. Chem. Mater., 11, 182

- Rollmann, D. L., Schlenker, J. L., Kennedy, C. L., Kennedy, G. J. and Doren, D. J. (2000) On the role of small amines in zeolite synthesis. 2. J. Phys. Chem. B, 104, 721
- Rollmann, D. L., Schlenker, J. L., Lawton, S. L., Kennedy, C. L., Kennedy, G. J. and Doren, D. J. (1999) On the role of small amines in zeolite synthesis. J. Phys. Chem. B, 103, 7175
- Sanchez del Campo, A. E., Gayubo, A. G., Aguyo, A. T., Tarrío, A. and Bilbao, J. (1998) Acidity, surface species and mechanism of methanol transformation into olefins on a SAPO-34. Ind. Eng. Chem. Res. 37, 2336
- Satterfield, C.N. (Ed.) (1991) Heterogeneous Catalysis in Industrial Practice 2nd. McGraw-Hill Inc. New York.
- Schmacht, M., Kim, T. J., Grill, W., Herrmann, R., Scharf, O., Schwieger, W., Schertlen, R. and Stenzel, C. (2000) Ultrasonic monitoring of zeolite synthesis in real time. Ultrasonic, 38, 809
- Shantz, D. F. and Lobo, R. F. (1998) Solid-state deuterium NMR studies of organic molecules in the tectosilicate nonasile. J. Phys. Chem. B., 102, 2339
- Shen, V., Watanabe, K. and Bell, A. T. (1997) Theoretical analysis of the thermodynamics of ZSM-11 zeolites synthesis. J. Phys. Chem. B, 101, 2207
- Szostak, R. (Ed.) (1989) Fundamental of Synthesis: Molecular sieves-Principles of Synthesis and Identification. Van Nostrand Rheinhold: New York
- Triantafillidis, C. S., Evmiridis, N. P., Nalbandian, L. and Vasalos, I. A. (1999) Performance of ZSM-5 as a fluid catalytic cracking catalyst additive: Effect of the total number of acid sites and particle size. Ind. Eng. Chem. Res. 38, 916
- Van Bekkum, H., Flanigen, E. M. and Jensen, J. C. (Eds.). (1991) The Preparation of Molecular Sieves. A. Synthesis: Introduction to Zeolite Science and Particle. Elsevier: Amsterdam
- Van DerPuil, N., Dantzenberg, F. M., VanBekkum, H. and Jansen, J. C. (1999) Preparation and catalytic testing of zeolite coating s on preshaped alumina supports. Micropor. Mesopor. Mat., 27, 95

- Wagner, P., Nakagawa, Y., Lee, G. S., Davis, M. E., Elomari, S., Medrud, R. C. and Zones, S. I. (2000) Guest/host relationships in the synthesis of the novel cage-based zeolites SSZ-35, SSZ-36 and SSZ-39. J. Am. Chem. Soc. 122, 263
- Xu, X., Yang, W., Liu, J. and Lin, L. (2000) Synthesis of a high pressure NaA zeolite membrane by Microwave heating. Adv. Mater., 12(3), 1995
- Yang, R. T. (Ed.) (1997) Gas Separation by Adsorption Processes. Imperial college Press. Singapore
- Yang, S., Navrotsky, A. and Phillips, B. L. (2000) In Situ Calorimetric, Structural, and Composition Study of Zeolite Synthesis in the System $5.15\text{Na}_2\text{O}-1.00\text{Al}_2\text{O}_3-3.28\text{SiO}_2-165\text{H}_2\text{O}$. J. Phys. Chem. B., 140, 6071
- Ying, J., Mehnert, C. and Wong, M. (1999) Synthesis and applications of supra-molecular templated mesoporous materials. Angew. Chem. Int. Ed. Engl., 38, 56
- Zones, S. I., Nakagawa, Y., Yuen, L. T. and Harris, T. V. (1996) Guest/host interaction in high silica zeolite synthesis: $[\text{5.2.1.0}^{26}]$ tricyclodecanes as template molecule. J. Am. Chem. Soc., 118, 7558



CURRICULM VITAE

Name: Ms. Mathavee (Suwankrughasn) Sathupunya

Date of Birth: January 12, 1971

Nationality: Thai

University Education:

1998-2002 Philosophy of Science (Polymer Science Program) The Petroleum and Petrochemical College, Chulalongkorn University, Bangkok, Thailand

1993-1994 Masters of Science (Polymer Science Program) The Petroleum and Petrochemical College, Chulalongkorn University, Bangkok, Thailand

1989-1992 Bachelor of Science (Industrial Chemistry) Chiang Mai University, Chiang Mai, Thailand

Working Experience:

1995 – 1998 Position : New Product Transfer Engineer

Company name: Seagate (Thailand) Co. Ltd

Publications:

1. Charoenpinijkarn W., Suwankrughasn (Sathupunya) M., Kesapabutr B., Wongkasemjit S., Jamieson A. M., "Sol-Gel Processing of Silatrane", *European Polymer Journal*, 37 (2001) 1441-1448
2. Sathupunya M., Gulari E., Wongkasemjit S., "ANA and GIS Zeolite Synthesis Directly from Alumatrane and Silatrane by Sol-Gel Process and Microwave Technique", *Journal of the European Ceramic Society*, 22 (2002) 2305-2314
3. Sathupunya M., Gulari E., Wongkasemjit S., "Na A (LTA) Zeolite Synthesis Directly from Alumatrane and Silatrane by Sol-Gel Process and Microwave Technique", *Journal of the European Ceramic Society*, In Press
4. Sathupunya M., Gulari E., Wongkasemjit S., "Prepolmer Synthesis of Polyester by Using Lipase as a Catalyst", *Journal of Metals, Materials and Minerals*, 11 (2002) 38-54
5. Sathupunya M., Gulari E., Wongkasemjit S., "Zeolite Synthesis Directly from Alumatrane and Silatrane by Sol-gel Process and Microwave Technique", Submitted to Sensors and Actuators B. Chemical

6. Sathupunya M., Gulari E., Wongkasemjit S., "Effect of Starting Material Ratio, Heating Temperature and Time on Morphology of Na A Zeolite", Submitted to Sensors and Actuators B. Chemical
7. Sathupunya M., Gulari E., Wongkasemjit S., "Microwave Preparation of Zeolite K-H directly from Alumatrane and Silatrane Precursors", Submitted to Chemistry of Materials
8. Sathupunya M., Gulari E., Wongkasemjit S., "Microwave Preparation of Li-Zeolite directly from Alumatrane and Silatrane", Submitted to Journal of European Ceramic Society

Presentations:

1. Suwankrughasn (Sathupunya) M., Dhumrongvaraporn S., Laine R. M., "Properties of silatrane glycolate polymer", *3rd International Conference on Frontiers of Polymers and Advance Materials*, Kuala Lumpur, Malaysia, January 16-18, 95
2. Suwankrughasn (Sathupunya) M., Wongkasemjit S., Gulari E., "Prepolymer Synthesis of Polyester by Using lipase as a Catalyst", *The Challenges of Polymer Science and Technololy in the 21st Century*, Bangkok Thailand, Oct. 18-20, 2000
3. Sathupunya M., Gulari E., Wongkasemjit S., "Zeolite Synthesis Directly from Alumatrane and Silatrane by Sol-gel Process and Microwave Technique", *9th International Meeting on Chemical Sensors*, Boston USA, July 7-10, 2002
4. Sathupunya M., Gulari E., Wongkasemjit S., "Effect of Starting Material Ratio, Heating Temperature and Time on Morphology of Na A Zeolite", *9th International Meeting on Chemical Sensors*, Boston USA, July 7-10, 2002