



## Yoshinari TAGUCHI, Ph.D.

Associate Professor

Program: Advanced Materials Science and Technology

Area: Applied Chemistry and Chemical Engineering

Undergraduate: Dept. of Engineering

<http://capsule.eng.niigata-u.ac.jp/>

### Professional Expertise

My professional expertise is to prepare functional microspheres and microcapsules. These microspheres can express functions of great variety by controlling the morphological properties and the components. They are expected as novel materials to solve a lot of problems in such various fields as medicine, cosmetics, agrichemicals, recording materials, food, and so on.

### Research Fields of Interest

#### Development of microcapsule.

- Microcapsule for self-healing
- Microcapsule for food
- Microcapsule for DDS
- Microcapsule for recording

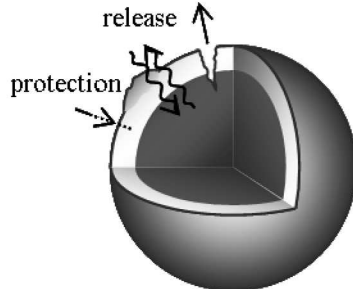


Diagram of microcapsule.

#### Controlling morphology and inner structure of microsphere.

- Diameter of microsphere
- Shell thickness
- Hollow structure
- Core-shell structure
- Multi-core structure
- Shell of gradient layers

### Education

2003: Ph.D. (Engineering), Niigata University, Japan

1996: Master Eng., Graduate School of Engineering, Course of Chemical Engineering, Niigata University, Japan

1994: Bachelor Eng., Department of Chemistry and Chemical Engineering, Niigata University, Japan

## Professional Societies and Activities

1. Member of the Society of Chemical Engineers, Japan
2. Member of the Japanese Society for Food Science and Technology.
3. Member of the Society of Powder Technology, Japan
4. Member of the Japan Society of Colour Material

## Major Publications

### Papers

- [1] M. Takahashi, Y. Taguchi, M. Tanaka, "Microencapsulation of hydrophilic solid powder as a flame retardant with epoxy resin by using interfacial reaction method", *Polym. Adv. Technol.*, Vol.20, 2009
- [2] M. Takahashi, Y. Taguchi, M. Tanaka, "Microencapsulation of hydrophilic solid powder as a fire retardant by the method of in situ gelation in droplets using a non-aqueous solvent as the continuous phase", *Polym. Polym. Compos.*, Vol.17, 2009
- [3] K. Fuchigami, Y. Taguchi, M. Tanaka, "Synthesis of calcium carbonate vaterite crystals and effect of them on stabilization of suspension polymerization of MMA", *Adv. Powder. Technol.*, Vol.20, pp.74-79, 2009
- [4] K. Fuchigami, Y. Taguchi, M. Tanaka, "Preparation of microcapsules containing TMBA (1, 3, 5-trimethylbarbituric acid) by the drying-in-liquid method and Its Application", *J. Appl. Polym. Sci.*, Vol.110, pp.2145-2152, 2008
- [5] K. Fuchigami, Y. Taguchi, M. Tanaka, "Synthesis of Spherical Silica Particles by Sol-Gel Method and Application", *Polym. Adv. Technol.*, Vol.19, pp.977-983, 2008
- [6] M. Takahashi, Y. Taguchi, M. Tanaka, "Microencapsulation of hydrophilic solid powder as fire retardant agent with epoxy resin by droplet coalescence method", *J. Appl. Polym. Sci.*, 110(3), pp.1671-1676, 2008
- [7] T. Takahashi, Y. Taguchi, M. Tanaka, "Preparation of polyurea microcapsules containing pyrethroid insecticide with HMDI isocyanurate", *J. Appl. Polym. Sci.*, Vol.107, pp.2000-2006, 2008
- [8] H. Yokoyama, L. Mo, Y. Taguchi, M. Tanaka, "Effect of viscosity of shell solution on the content of solid powder as core material in microencapsulation by the drying-in-liquid method", *J. Appl. Polym. Sci.*, Vol.109, pp.1585-1593, 2008
- [9] K. Fuchigami, Y. Taguchi, M. Tanaka, "Preparation of hemispherical hollow silica microcapsules with different affinity surface by using spherical vaterite calcium carbonate as template", *Polym. Adv. Technol.*, Vol.18, pp.946-952, 2007
- [10] Y. Taguchi, H. Yokoyama, M. Hara, M. Tanaka, "Preparation of porous biodegradable microspheres with direct melting dispersion method", *Polym. Adv. Technol.*, Vol.18, pp.275-280, 2007
- [11] Y. Taguchi, H. Yokoyama, H. Kado, M. Tanaka, "Preparation of PCM microcapsules by using oil absorbable polymer particles", *Colloids Surf., A.*, Vol.301, pp.41-47, 2007
- [12] T. Takahashi, Y. Taguchi, M. Tanaka, "Shell thickness and chemical structure of polyurea microcapsules prepared with hexamethylene diisocyanate uretidione and isocyanate", *J. Appl. Polym. Sci.*, Vol.106, pp.3786-3791, 2007
- [13] K. Fuchigami, Y. Taguchi, M. Tanaka, "Preparation of microcapsules containing reactive compound by the drying-in-liquid method using calcium carbonate as stabilizer", *J. Chem. Eng. Jpn.*, Vol.39, pp.994-999, 2006
- [14] M. Tanaka, Y. Taguchi, N. Sawatari, N. Saito, "Preparation of composite particles coated with two kinds of solid powders by semi-chemical recycle method", *J. Mat. Sci.*, Vol.41, pp.4215-4220, 2006
- [15] T. Takahashi, Y. Taguchi, M. Tanaka, "Preparation of polyurea microcapsules containing pyrethroid insecticide with hexamethylene diisocyanate uretidione and isocyanurate", *J. Chem. Eng. Jpn.*, Vol.38, pp.929-936, 2005
- [16] N. Sawatari, M. Fukuda, Y. Taguchi, M. Tanaka, "Composite polymer particles with a gradated resin composition by suspension polymerization", *J. Appl. Polym. Sci.*, Vol.97, pp.682-690, 2005
- [17] K. Mizuno, Y. Taguchi, M. Tanaka, "The effect of the surfactant adsorption layer on the growth rate of the polyurethane capsule shell", *J. Chem. Eng. Jpn.*, Vol.38, pp.45-48, 2005