CURRICUCUM VITAE

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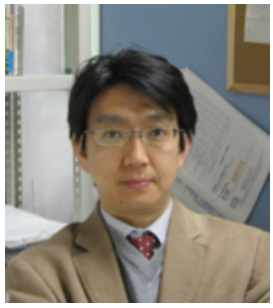

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Date of Birth 16 January 1970

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Summary of Career

2008-present Associate Professor (P.I.) of Kyoto Prefectural University

2007-2008 Associate Professor of Ritsumeikan University
at the group of Prof. Hitoshi Tamiaki
Topic: Supramolecular chemistry based on chlorophylls

2002-2007 Researcher and Project Assistant Professor at JST SORST Project
Project leader: Prof. Seiji Shinkai
Topic: Supramolecular chemistry based on helix-forming polysaccharide

2000-2002 Postdoctoral Research Fellow at AIST, Tsukuba, Japan.
Advisor: Prof. Kazuhisa Hiratani
Topic: Syntheses of macrocycles and rotaxanes

Summary of Education

1997-2000 PhD, Kyushu University
Advisor: Prof. Seiji Shinkai
Title: Supramolecular chemistry based on dendrimer hosts
and sugar-appended dendrons.

1995-1997 MS, Kyoto Institute of Technology
Advisor: Prof. Akira Oku
Title: Ring-enlargement reaction utilizing oxonium ylides as key intermediate

Awards

Young Scholar Lecture Series, CSJ (2008)
HGCS Japan Award of Excellence, CSJ (2009)

Research Interests Self-assemble system in combination with designed microspace,
its scientific principle and practical application toward functional materials.

Original Papers

1. Energy-dissipative Self-assembly Driven in Microflow: A Time-programed Self-organization and Decomposition of Metastable Nanofibers, **M. Numata**, A. Sato, R. Nogami, *Chem. Lett*. **44**, 995-997 (2015).
2. Creation of Kinetically Stabilized Porphyrin Microfilms Through Synchronized Hydrogen-Bonding Interactions in Microflow, **M. Numata**, Y. Nishino, Y. Sanada, K. Sakurai, *Chem. Lett*., **44**, 861-863 (2015).
3. Synchronized Self-assembly of a Fullerene Derivative Passing through a Programmable Microflow Field, **M. Numata**, T. Kozawa, T. Nakadozono, Y. Sanada, K. Sakurai*, Chem. Lett*. **44**, 577-579 (2015) (Editor's Choice).
4. Synchronized Activation of π-Conjugated Molecules toward Self-Assembly: Precisely Controlling the Hysteresis of the Metastable State along Microflow, **M. Numata**, T. Kozawa, R. Nogami, K. Tanaka, Y. Sanada, K. Sakurai, *Bull. Chem. Soc. Jpn.* **88**, 471-479 (2015).
5. Spatially Controlled Initiation/Termination of Supramolecular Polymerization: Creation of End-capped Nanofiber with Discrete Length in Microflow, **M. Numata,** R. Sakai, *Chem.Lett., 43*, 577-579 (2014).
6. Kinetically Controllable Supramolecular Polymerization through Synchronized Activation of Monomers, **M. Numata**, R. Sakai, Bull.*Chem.Soc.Jpn*.,87, 858-862 (2014) (BCSJ Award Article)
7. Two-Dimentional Assembly Based on Flow Supramolecular Chemistry: Kinetic Control of Molecular Interaction Under Solvent Diffusion, **M. Numata**, T. Kozawa, *Chem. Eur. J*., **20**, 6234-6240 (2014)
8. Two-dimensional self-assembly of amphiphilic porphyrins on a dynamically shrinking droplet surface, **M. Numata**, Y. Takigami, N. Hirose, R. Sakai, *Org. Biomol. Chem*., **12,**1627-1632 (2014).
9. Supramolecular polymerization in microfluidic channels: Spatial control over multiple intermolecular interactions, **M. Numata**, T. Kozawa, *Chem. Eur. J*., **19**, 12629-12634 (2013).
10. Orthogonal polymer recognition based on semiartificial helical polysaccharide, **M. Numata**, D. Kinoshita, N. Hirose, T. Kozawa, H. Tamiaki, *Chem. Lett*., **42**, 266-268 (2013).
11. Controlled stacking and unstacking of peripheral chlorophyll units drives the spring-like contraction and expansion of a semi-artificial helical polymer, **M. Numata**, D. Kinoshita, N. Hirose, T. Kozawa, H. Tamiaki, Y. Kikkawa, M. Kanesato, *Chem. Eur. J*., **19**, 1592-1598 (2013).
12. Microflow-driven Temporal Self-assembly of Amphiphilic Molecules, **M. Numata**, M. Takayama, S. Shoji, H. Tamiaki, *Chem. Lett*., **41**, 1689-1691 (2012).
13. Hierarchical supramolecular spinning of nanofibers in a microfluidic channel: Tuning nanostructures at dynamic interface, **M. Numata**, Y. Takigami, M. Takayama, T. Kozawa, N. Hirose, *Chem. Eur. J*., **18**,13008-13017 (2012).

14. Self-assembly of amphiphilic molecules in droplet compartments:an approach toward discrete submicrometer-sized one-dimensional structures, **M. Numata**, D. Kinoshita, N. Taniguchi, H. Tamiaki, A. Ohta, *Angew. Chem. Int. Ed.*, **51**, 1844-1848 (2012).
15. pH and sugar responsive host polymer hydrogels designed based on sugar and boronic acid interaction, S. Tamesue, **M. Numata**, S. Shinkai, *Chem. Lett.*, **40**, 1303-1305 (2011).
16. Creation of Hierarchical Polysaccharide Strand: Supramolecular Spinning of Nanofibers by Microfluidic Device, **M. Numata**, Y. Takigami, M. Takayama, *Chem. Lett.*, **40**, 102-103 (2011).
17. 'Supramolecular wrapping chemistry' by helix-forming polysaccharides: a powerful strategy for generating diverse polymeric nano-architectures, **M. Numata** and S. Shinkai, *Chem. Commun.* (Feature Article), **47**, 1961-1975 (2011).
18. Hierarchical polymer assemblies constructed by the mutual template effect of cationic polymer complex and anionic supramolecular nanofiber, K. Sugikawa, **M. Numata**, D. Kinoshita, K. Kaneko, K. Sada, A. Asano, S. Seki, and S. Shinkai, *Org. Biomol Chem.,* **9**, 146-153 (2011).
19. Creation of supramolecular assemblies from a dipolar dye molecule by the template effect of 1,3-glucan polysaccharide, S. Malik, N. Fujita, **M. Numata**, K. Ogura and S. Shinkai, *J. Mater. Chem.*, **20**, 9022-9024 (2010).
20. Semi-artificial polysaccharide can provide a unique nano-space for the construction of supramolecular dye-assembly, K. Sugikawa, **M. Numata**, K. Sada, and S. Shinkai, *Chem. Lett.*, **39**, 710-711 (2010).
21. Creation of unique supramolecular nanoarchitectures utilizing natural polysaccharide as a one-dimensional host, **M. Numata**, *J. Incl. Phenom. Macrocycl Chem.*, **68**, 25-47 (2010).
22. "Supramolecular" amphiphilies created by wrapping poly(styrene) with the helix-forming β-1,3-glucan polysaccharide, **M. Numata**, K. Kaneko, H. Tamiaki, and S. Shinkai, *Chem. Eur. J.*, **15**, 12338-12345 (2009).
23. Circularly polarized luminescence from supramolecular chiral complexes of achiral conjugated polymers and a neutral polysaccharide, S. Haraguchi, **M. Numata**, C. Li, Y. Nakano, M. Fujiki, and S. Shinkai, *Chem. Lett.*, **38**, 254-255 (2009).
24. Alternate layer-by-layer adsorption of single- and double-walled carbon nanotubes wrapped by functionalized β-1,3-glucan polysaccharides, K. Sugikawa, **M. Numata**, K. Kaneko, K. Sada, and S. Shinkai, *Langmuir*, **24**, 13270 (2008).
25. Hierarchical carbon nanotube assemblies created by sugar-boric or boronic acid interactions, S. Tamesue, **M. Numata**, K. Kaneko,T. D. James, and S. Shinkai, *Chem. Commun.*, 4478-4480 (2008).
26. Immobilization of polythiophene chirality induced by a helix-forming β-1,3-glucan polysaccharide (schizophyllan) through Sol-Gel reaction, S. Haraguchi, **M. Numata**, K. Kaneko, and S. Shinkai, *Bull. Chem. Soc. Jpn.*, **8**, 1002 (2008).
27. Creation of hierarchical carbon nanotube assemblies through alternative packing of complementary

semi-artificial β-1,3-glucan/carbon nanotube composites, **M. Numata**, K. Sugikawa, K. Kaneko, and S. Shinkai, *Chem. Eur. J.*, **14**, 2398-2404 (2008).

28. Creation of polynucleotide-assisted molecular assemblies in organic solvents:general strategy toward the creation of artificial DNA-like nanoarchitectures , **M. Numata**, K. Sugiyasu, T. Kishida, S. Haraguchi, N. Fujita, S.-M. Park, Y.-J. Yun, B.-H. Kim, and S. Shinkai, *Org. Biomol. Chem.*, **6**, 712-718 (2008).
29. Carbohydrate-appended curdlans as a new family of glycoclusters with binding properties both for a polynucleotide and lectins, T. Hasegawa, **M. Numata**, S. Okumura, T. Kimura, K. Sakurai, and S. Shinkai, *Org. Biomol. Chem.*, **5**, 2404 (2007).
30. β-1,3-Glucan schizophyllan can act as a one-dimensional host to arrange icosahedral carboranes, **M. Numata**, S. Tamesue, T. Nagasaki, K. Sakurai, and S. Shinkai, *Chem. Lett.*, **36**, 668 (2007).
31. Controlled stability of the triple-stranded helical structure of a β-1,3-glucan with a chromophoric aromatic moiety at a peripheral position, M. Ikeda, S. Haraguchi, **M. Numata**, and S. Shinkai, *Chem. Asian J.*, **2**, 1290 (2007).
32. Instantaneous inclusion of a polynucleotide and hydrophobic guest molecules into a helical core of cationic β-1,3-glucan polysaccharide, M. Ikeda, T. Hasegawa, **M. Numata**, K. Sugikawa, K. Sakurai, M. Fujiki, and S. Shinkai, *J. Am. Chem. Soc.*, **129**, 3979-3988 (2007).
33. New approach to preparing one-dimensional Au nanowires utilizing ahelical structure constructed by schizophyllan, A.-H. Bae, **M. Numata**, S. Yamada, and S. Shinkai, *New. J. Chem.*, **31**, 618 (2007).
34. Complex formation between cationic β-1,3-glucan and hetero-sequenceoligodeoxynucleotide and its delivery into macrophage-like cells to inducecytokine secretion, M. Ikeda, J. Minari, N. Shimada, **M. Numata**, K. Sakurai, and S. Shinkai, *Org. Biomol. Chem.,* **5**, 2219 (2007).
35. Molecular assemblies as templates toward the creation of functional superstructures, M. Takeuchi, **M. Numata**, N. Fujita, K. Sada, and S. Shinkai, *Chem. Soc. Rev.*, **36**, 415-435 (2007).
36. β-1,3-Glucan (schizophyllan) can act as a one-dimensional host for creating chirally twisted poly(*p*-phenylene ethynylene), **M. Numata**, T. Fujisawa, C. Li, S. Haraguchi, M. Ikeda, K. Sakurai, and S. Shinkai, *Supramol. Chem.*, **19**, 107 (2007).
37. β-1,3-Glucan polysaccharide (schizophyllan) acts as a one-dimensional host for creating supramolecular dye assemblies, **M Numata**, S. Tamesue, T. Fujisawa, S. Haraguchi, T. Hasegawa, A.-H. Bae, C. Li, K. Sakurai, and S. Shinkai, *Org. Lett.*, **8**, 5533 (2006).
38. Unexpected chiroptical inversion observed for supramolecular complexes formed between an achiral polythiophene and ATP, C. Li, **M. Numata**, M. Takeuchi, and S. Shinkai. *Chem. Asian, J.*, **1**, 95 (2006).
39. Galactose-PEG dual conjugation of β-1,3-D-glucan schizophyllan for antisense oligonucleotides delivery to enhance the cellular uptake, R. Karinaga, T. Anada, J. Minari, M. Mizu, K. Koumoto, J. Jukuda, K. Nakazawa, T. Hasegawa, **M. Numata**, S. Shinkai, and K. Sakurai, *Biomaterials*, **27**,

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40. Click chemistry on curdlan: A regioselective and quantitative approach to develop artificial β-1,3-glucans with various functional appendages. T. Hasegawa, M. Umeda, **M. Numata**, T. Fujisawa, S. Haraguchi, K. Sakurai, and S. Shinkai, *Chem. Lett.*, **35**, 82 (2006).
41. Poly(diacetylene) nanofibers can be fabricated through photo-irradiation using natural polysaccharide schizophyllan as a one-dimensional mold. T. Hasegawa, S. Haraguchi, **M. Numata**, C. Li, A.-H. Bae, T. Fujisawa, K. Kaneko, K. Sakurai, and S. Shinkai, *Org. Bioorg. Chem.,* **3**, 4321 (2005).
42. Click chemistry' on polysaccharides: a convenient, general, and monitor approach to develop β-1,3-D-glucan with various functional appendages. T. Hasegawa, M. Umeda, **M. Numata**, C. Li, A.-H. Bae, T. Fujisawa, S. Haraguchi, K. Sakurai, and S. Shinkai, *Carbohydrate Res.,* **34**, 35 (2006).
43. Oligosilane-nanofibers can be prepared through fabrication of permethyldecasilane within a helical superstructure of schizophyllan. S. Haraguchi, T. Hasegawa, **M. Numata**, M. Fujiki, K. Uezu, K. Sakurai, and S. Shinkai, *Org. Lett.*, **7**, 5605 (2005).
44. Water-soluble poly(3,4-ethylenedioxythiophene) nanoparticles created by a templating effect of β-1.3-glucan schizophyllan, C. Li**, M. Numata**, T. Hasegawa, T. Fujisawa, S. Haraguchi, K. Sakurai, and S. Shinkai, *Chem. Lett.,* **34**, 1354 (2005).
45. A sensitive colorimetric and fluorescent probe based on a polythiophene derivative for the detection of ATP, C. Li, **M. Numata**, M. Takeuchi, and S. Shinkai, *Angew, Chem. Int. Ed.*, **44**, 6371-6374 (2005).
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47. β-1,3-Glucans polysaccharides as novel one-dimensional hosts for DNA/RNA, conjugated polymers and nanoparticles. K. Sakurai, K. Uezu, **M. Numata**, T. Hasegawa, C. Li, K. Kaneko, and S. Shinkai, *Chem. Commun.* (Feature Article), 4383-4398 (2005).
48. β-1.3-Glucan polysaccharide can act as a one-dimensional host to create novel silica nanofiber structures, **M. Numata**, C. Li, A.-H. Bae, K. Kaneko, K. Sakurai, and S. Shinkai, *Chem. Commun.,* 4655 (2005).
49. Schizophyllan acts as a one-dimensional host to accommodate 5, 10, 15, 20-tetrakis (4-carboxyphenyl)porphyrinatozinc acetate to produce its fibrous superstructure, T. Hasegawa, T. Fujisawa, **M. Numata**, C. Li, A.-H. Bae, S. Haraguchi, K. Sakurai, and S. Shinkai, *Chem. Lett.*, **34**, 1118 (2005).
50. Transferrin-appended β-1,3-D-glucan schizophyllan for antisense oligonucleotides delivery to enhance the cellular uptake, T. Anada, R. Karinaga, M. Mizu, K. Koumoto, T. Matsumoto, **M. Numata**, S. Shinkai, and K. Sakurai, *e-J. of Surface Science and Nanotechnology*, **3**, 195 (2005).

51. Pallalel vs. anti-parallel orientation in a curdlan/oligo(dA) complex as estimated by a FRET technique, **M. Numata,** K. Koumoto, M. Mizu, K. Sakurai, and S. Shinkai, *Organic. Bioorganic. Chem.,* **3**, 2255 (2005).
52. Inclusion of cut and as-grown single-walled carbon nanotubes in the helical superstructure of schizophyllan and curdlan (β-1,3-glucans), **M. Numata**, M. Asai, K. Kaneko, T. Hasegawa, K. Sakurai, and S. Shinkai, *J. Am. Chem. Soc.,* **127**, 5875-5884 (2005).
53. Poly(N-substituted-acrylamide)-branched schizophyllans are useful for selective recovery of homopolynucleotides through convenient and quick precipitation procedures, T. Matsumoto, M. Umeda, T. Hasegawa, **M. Numata**, K. Sakurai, K. Koumoto, and S. Shinkai, *Polymer J.*, **37**, 177 (2005).
54. Self-assembly of supramolecular chiral insulated molecular wire, C. Li, **M. Numata**, A.-H. Bae, K. Sakurai, and S. Shinkai, *J. Am. Chem. Soc.*, **127**, 4548 (2005).
55. 1D arrangement of Au nanoparticles by the helical structure of schizophyllan: a unique encounter of a natural product with inorganic compounds, A.-H. Bae, **M. Numata**, T. Hasegawa, C. Li, K. Kaneko, K. Sakurai, and S. Shinkai, *Angew. Chem. Int. Ed.,* **44**, 2030 (2005).
56. Schizophyllan-folate conjugate as a new non-cytotoxic and cancer-targeted antisense carrier, T. Hasegawa, T. Fujisawa, S. Haraguchi, **M. Numata**, R. Karinaga, T. Kimura, S. Okumura, K. Sakurai, and S. Shinkai, *Bioorg. Med. Chem. Lett.*, **15**, 327 (2005).
57. Schizophyllan can act as a one-dimensional host to construct poly(diacetylene) nanofibers, T. Hasegawa, S. Haraguchi, **M. Numata**, T. Fujisawa, C. Li, K. Kaneko, K. Sakurai, and S. Shinkai, *Chem. Lett.*, **34**, 40 (2005).
58. Superstructural poly(pyrrole) assemblies created by a DNA templating method, A.-H. Bae, T. Hatano, **M. Numata**, M. Takeuchi, and S. Shinkai, *Macromolecules*, **38**, 1609 (2005).
59. Sol-gel reaction using DNA as a template: an attempt toward transcription of DNA into inorganic materials, **M. Numata**, K. Sugiyasu, T. Hasegawa, and S. Shinkai, *Angew. Chem. Int. Ed.,* **43**, 3279 (2004).
60. β-1,3-Glucan (schizophyllan) can act as a one-dimensional host for creation of novel poly(aniline) nanofiber structures, **M. Numata**, T. Hasegawa, T. Fujisawa, K. Sakurai, and S. Shinkai, *Org. Lett.*, **6**, 4447 (2004).
61. Complementary hydrogen-bonding between tymidine-based low molecular-weight gelator and polynucleotide in organic media, K. Sugiyasu, **M. Numata**, N. Fujita, S.-M. Park, Y.-J. Yun, B.-H. Kim, and S. Shinkai, *Chem. Commun.*, 1996 (2004).
62. Higher-order conformations of DNA are useful as templates to create various superstructural poly(pyrrole) morphologies, A.-H. Bae, T. Hatano, **M. Numata**, M. Takeuchi, and S. Shinkai, *Chem. Lett.*, **33**, 436 (2004).
63. Schizophyllans carrying oligosaccharide appendages as potential candidates for cell-targeted

antisense carrier, T. Hasegawa, T. Fujisawa, **M. Numata**, T. Matsumoto, M. Umeda, R. Karinaga , M. Mizu, K. Koumoto, T. Kimura, S. Okumura, K. Sakurai, and S. Shinkai, *Org. Biomol. Chem.*, **2**, 3091 (2004).

64. Single-walled carbon nanotubes acquire a specific lectin-affinity through supramolecular wrapping with lactose-appended schizophyllan, T. Hasegawa, T. Fujisawa, **M. Numata**, M. Umeda, T. Matsumoto, T. Kimura, S. Okumura, K. Sakurai, and S. Shinkai, *Chem. Commun.*, 2150 (2004).
65. A polysaccharide carrier for immunostimulatory CpG DNAs to enhance cytokine secretion, M. Mizu, K. Koumoto, T. Anada, T. Matsumoto, **M. Numata**, S. Shinkai, T. Nagasaki, and K. Sakurai, *J. Am. Chem. Soc.,* **126**, 8372 (2004).
66. Curdlan and schizophyllan (β-1,3-glucans) can entrap single-wall carbon nanotubes in their helical superstructure, **M. Numata**, M. Asai, K. Kaneko, T. Hasegawa, N. Fujita, Y. Kitada, K. Sakurai, and S. Shinkai, *Chem. Lett.*, **33**, 232 (2004).
67. Lactose-appended schizophyllan is a potential candidate as a hepatocyte-targeted antisense carrier, T. Hasegawa, M. Umeda, T. Matsumoto, **M. Numata**, M. Mizu, K. Koumoto, K. Sakurai, and S. Shinkai, *Chem. Commun.,* 382 (2004).
68. Chemically modified polysaccharide schizophyllan for antisense oligonucleotides delivery to enhance the cellular uptake efficiency, T. Matsumoto, **M. Numata**, M. Mizu, K. Koumoto, T. Anada, K. Sakurai, T. Nagasaki, and S. Shinkai, *Biochimica et Biophysica Acta-General Subjects,* **1670**, 91 (2004).
69. Low M_w sulfated curdlan with improved water solubility forms macromolecular complexes with polycytidylic acid, K. Koumoto, M. Umeda, **M. Numata**, T. Matsumoto, K. Sakurai, T. Kunitake, and S. Shinkai, *Carbohydr. Res.,* **339**, 161 (2004).
70. Polysaccharide-polynucleotide complexes (15): thermal stability of schizophyllan (SPG)/Poly(C) triple strands is controllable by α-amino acid modification, **M. Numata**, T. Matsumoto, M. Umeda, K. Koumoto, K. Sakurai, T. Kunitake, and S. Shinkai, *Bioorg. Chem.,* **31**, 163 (2003).
71. Polynucleotide can stabilize nucleobase-appended cholesterol gels, **M. Numata** and S. Shinkai, *Chem. Lett.*, **32**, 308 (2003).
72. A new synthetic method for rotaxanes via tandem Claisen rearrangement, diesterification, and aminolysis, K. Hiratani, J. Suga, Y. Nagawa, H. Houjou, H. Tokuhisa, **M. Numata**, and K. Watanabe, *Tetrahedron Lett.*, **43**, 5747 (2002).
73. Efficient synthesis of novel macrocyclic tetraamide compounds: a unique reaction process involving both self-assembling and folding of intermediates, **M. Numata**, K. Hiratani, Y. Nagawa, H. Houjou, S. Masubuchi, and S. Akabori, *New, J. Chem.*, **26**, 503 (2002)
74. Thermodynamic insight into the origin of a calyx[n]arene-[60]fullerene interaction and its application to a porphyrin-[60]fullerene energy transfer system, A. Ikeda, M. Kawaguchi, Y. Suzuki, T. Hatano, **M. Numata**, S. Shinkai, A. Ohta, and M. Aratono, *J. Inclusion Phenomena and*

Macrocyclic Chemistry, **38**, 163 (2000).

75. Polybenzyl ether dendrimers for the complexation of [60]fullerenes, J.-F. Eckert, D. Byrne, J.-F. Nicoud, L. Oswald, J.-F. Nierengarten, **M. Numata**, A. Ikeda, S. Shinkai, and N. Armaroli, *New. J. Chem.*, **24**, 749 (2000).
76. Properly assembled dendrons can be immobilized into dendrimers by in situ crosslink, **M. Numata**, A. Ikeda, and S. Shinkai, *Chem. Lett.*, 370 (2000).
77. Three-to-sic-carbon ring-enlargement reaction of cyclic ortho esters bearing a diazocarbonyl side chain, Use of the intermolecular formation of tricyclooxonium ylides, A. Oku and **M. Numata**, *J. Org. Chem.*, **65**, 1899 (2000).
78. Pyridine-appended 5,6-open-aza[60]fulleroid can act as a unique host for alcohols, A. Ikeda, C. Fukuhara, M. Kawaguchi, **M. Numata**, S. Shinkai, S.-G. Liu, and L. Echegoyen, *J. Chem. Soc., Perkin 2*, 307 (2000).
79. A novel attempt to control the aggregation number of dendrons with a saccharide, A. Ikeda, **M. Numata**, and S. Shinkai, *Chem., Lett.*, 929 (1999).
80. Dendrimers can act as a host for [60]fullerene, **M. Numata**, A. Ikeda, C. Fukuhara, and S. Shinkai, *Tetrahedron Lett.*, **40**, 6945 (1999).

Reviews and Books Chapters

1. "β-1,3-Glucans polysaccharides as novel one-dimensional hosts for DNA/RNA, conjugated polymers and nanoparticles", K. Sakurai, K. Uezu, **M. Numata**, T. Hasegawa, C. Li, K. Kaneko, and S. Shinkai, *Chem. Commun.* (Feature Article), 4383-4398 (2005).
2. "Molecular assemblies as templates toward the creation of functional superstructures", M. Takeuchi, **M. Numata**, N. Fujita, K. Sada, and S. Shinkai, *Chem. Soc. Rev.*, **36**, 415-435 (2007).
3. "Self-assembled polysaccharide nanotubes generated from β-1,3-glucan polysaccharides", **M. Numata** and S. Shinkai, *Advances in Polymer Science*, ed. by T. Shimizu, Springer, Berlin, **220**, 65-121 (2008).
4. "Creation of unique supramolecular nanoarchitectures utilizing natural polysaccharide as a one-dimensional host", **M. Numata**, *J. Incl. Phenom. Macrocycl Chem.*, **68**, 25-47 (2010).
5. "Supramolecular wrapping chemistry' by helix-forming polysaccharides: a powerful strategy for generating diverse polymeric nano-architectures", **M. Numata** and S. Shinkai, *Chem. Commun.* (Feature Article), **47**, 1961-1975 (2011).
6. "Characterisation of supramolecules by TEM (Monographs in supramolecular chemistry)", K. Kaneko, **M. Numata**, M. Takeuchi, S. Shinkai, Royal Society of Chemistry, UK. (2012).

Latest Invited Lectures (International; 10, Domestic; 13)

1. Lecture at University of British Colombia, 'Supramolecular Chemistry in Microflow: A new strategy for regulating intermolecular interactions', **M. Numata**, July 28th, 2014, Vancouver, Canada
2. Ninth International Workshop on Suramolecular Nanoscience of Chemically Programmed Pigments, 'Supramolecular chemistry in a programed microspace', **M. Numata**, June 28th-30th, 2013, Ritsumeikan University, Shiga, Japan.
3. New Trends of Nano- or Bio-materials Design in Supramolecular Chemistry, September 20th-21st, 2013,'Supramolecular chemistry in a programed microspace', **M. Numata**, Kyushu University, Fukuoka, Japan.
4. China-Japan Joint Symposium on Functional Supramolecular Architectures, October 25th-28th, 2013, 'Supramolecular chemistry in designed microspaces', **M. Numata**, Suzhou, China.
5. The Eighth International Symposium on Integrated Synthesis, November 29th-December 1st , 2013, 'Supramolecular Chemistry in Microflow Space', **M. Numata**, Nara, Japan.
6. The 6th Japan-Taiwan Bilateral Symposium on Architecture of Functional Organic Molecules, 'Self-assembly of amphiphilic molecules in droplet compartment: A novel approach toward the creation of discrete sub-micrometer structures', **M. Numata**, August 17-20, 2011, Hiroshima, Japan.