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Research Interests

Supramolecular Chemistry, Molecular Recognition, Assembly, Organic Chemistry, Polymer Chemistry

Education

2000	B.S. Faculty of Engineering, Kyoto University
2002	M.S. Graduate School of Engineering, Kyoto University
2005	Ph.D. Graduate School of Engineering, Kyoto University (Supervisor: Prof. Yoshiki Chujo)

Professional Career

2005 - 2006	JSPS Research Fellow (PD): Osaka University (Supervisor: Prof. Akira Harada)
2006 - 2010	Assistant Professor at Kanazawa University
2010 - 2015	Associate Professor at Kanazawa University
2015 - 2019	Professor at Kanazawa University
2019 - present	Professor at Kyoto University
2019 - present	Specially Appointed Professor at Kanazawa University

Scientific Activities

2013 - 2017	JST-PRESTO Researcher : JST PRESTO program
2018 - present	JST-CREST Research Investigator

Honors

2019	Kao Academic Award
2016	Merck Banyu Lectureship Award / Banyu Chemist Award (MSD Life Science Foundation)
2016	Nozoe Memorial Award for Young Organic Chemists (JPOC)
2014	The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (MEXT)
2013	Cram Lehn Pedersen Prize in Supramolecular Chemistry (RSC)
2012	The Chemical Society of Japan Award for Young Chemists (CSJ)

Publications

- Ogoshi, T.; Kanai, S.; Fujinami, S.; Yamagishi, T.; Nakamoto, Y. *J. Am. Chem. Soc.* 2008, 130, 5022-5023.
- Ogoshi, T.; Yamagishi, T.; Nakamoto, Y. *Chem. Rev.* 2016, 116, 7937-8002.
- Ogoshi, T.; Sueto, R.; Yagyu, M.; Kojima, R.; Kakuta, T.; Yamagishi, T.; Doitomi, K.; Tummanapelli, A. K.; Hirao, H.; Sakata, Y.; Akine, S.; Mizuno, M. *Nat. Commun.* 2019, 10, 479.
- Ogoshi, T.; Maruyama, K.; Sakatsume, Y.; Kakuta, T.; Yamagishi, T.; Ichikawa, T.; Mizuno, M. *J. Am. Chem. Soc.* 2019, 141, 785-789.
- Fa, S.; Egami, K.; Adachi, K.; Kato, K.; Ogoshi, T. *Angew. Chem. Int. Ed.* 2020, 59, 20353-20356.
- Fa, S.; Sakata, Y.; Akine, S.; Ogoshi, T. *Angew. Chem. Int. Ed.* 2020, 59, 9309-9313.
- Strilets, D.; Fa, S.; Hardiagon, A.; Baaden, M.; Ogoshi, T.; Barboiu, M. *Angew. Chem. Int. Ed.* 2020, in press, DOI: 10.1002/anie.202009219.

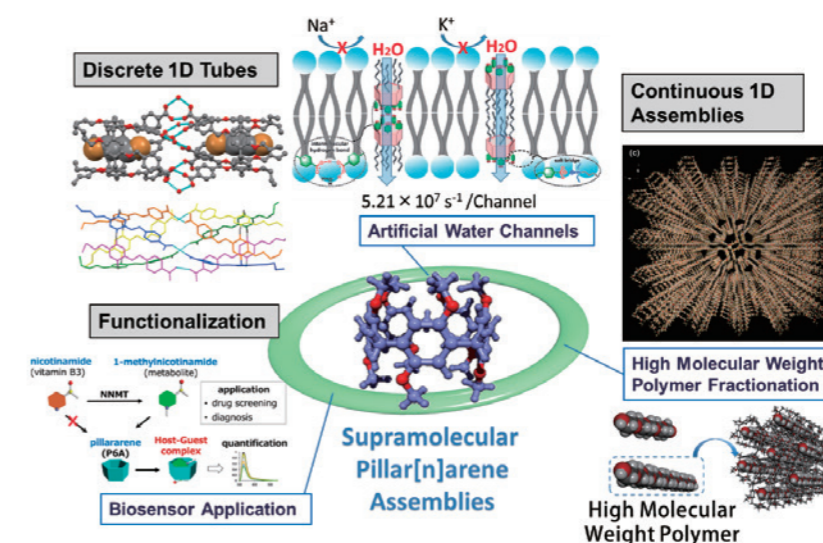
Supramolecular Assemblies of Pillar[n]arenes for Molecular Separation, Artificial Water Channels and Biosensor Applications

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Macrocyclic compounds play a major role in supramolecular chemistry because of their beautiful shape, nano-scale size and molecular recognition ability. Numerous supramolecular architectures have been constructed and studied as new components of materials as well as entities related to biological structural formation and functions using various macrocyclic hosts.

In 2008, we reported a new class of macrocyclic hosts named "pillar[n]arenes".[1,2] They have unique symmetrical pillar structures due to their para-bridge linkage. Based on the pillar-shaped structure, we have produced molecular scale porous materials by assembly of pillar[n]arenes. Due to the pillar-shaped structure, pillar[n]arenes mainly form one-dimensional (1D) channel structures in crystal state. We discovered that these 1D channel assemblies formed complexes selectively with high mass fraction of polymers when immersed in polymers with high polydispersity.[3] We have also contacted discrete 1D tubular assemblies using pillar[5]arenes with different rims and applied these discrete tubes for highly selective artificial water channels.[4] Biosensor applications of functionalized pillar[6]arenes for quantitative detection of a vitamin metabolite in crude biological samples are also reported.[5]



References

- T. Ogoshi, S. Kanai, S. Fujinami, T. Yamagishi, Y. Nakamoto, Y. *J. Am. Chem. Soc.* **2008**, 130, 5022-5023.
- T. Ogoshi, T. Yamagishi, Y. Nakamoto, Y. *Chem. Rev.* **2016**, 116, 7937-8002.
- Ogoshi, T.; Sueto, R.; Yagyu, M.; Kojima, R.; Kakuta, T.; Yamagishi, T.; Doitomi, K.; Tummanapelli, A.K.; Hirao, H.; Sakata, Y.; Akine, S.; Mizuno, M. *Nat. Commun.* **2019**, 10, 479.
- Fa, S.; Sakata, Y.; Akine, S.; Ogoshi, T. *Angew. Chem. Int. Ed.* **2020**, 59, 9309-9313; Strilets, D.; Fa, S.; Hardiagon, A.; Baaden, M.; Ogoshi, T.; Barboiu, M. *Angew. Chem. Int. Ed.* **2020**, in press.
- Ueno et al. Revised to *Commun. Chem.*