THE 12TH CSJ-RSC JOINT SYMPOSIUM
AQUATIC CHEMICAL SCIENCE AND MATERIALS

BOOK OF ABSTRACT

24 October – 2025 | Tower Hall Funabori, Yokyo, Japan

Oral presentation

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   Shinshu University / Okayama University / University. of Tokyo
2. **Characterizing the Electrolyte/Graphene Interface: An Integrated Approach with Modelling and Experiments**
   Paola Carbone
   University of Manchester
3. **Understanding Water-Mediated Interactions at Soft Material Interfaces for Biomedical Applications**
   Masaru Tanaka
   Kyushu University

Session 2

4. **Advanced Infrared Spectroscopic Techniques for Investigating Water-Polymer Interactions**
   Yuka Ikemoto
   Japan Synchrotron Radiation Res. Inst.
5. **Water-Mediated Crosslinking for Designing Tough and Adaptive Polymer Networks**
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   Osaka University
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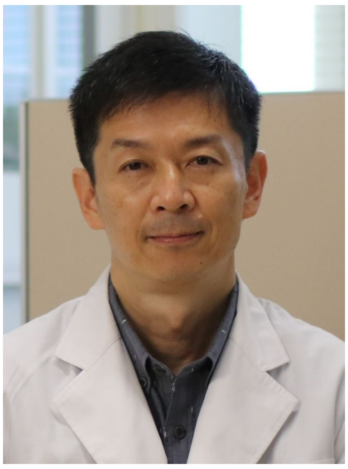
   University of Tokyo
7. **Chemistry's Role in Building a Fairer, Safer, and More Sustainable World**
   Andrew Shore
   Royal Society of Chemistry

THE CHEMICAL SOCIETY OF JAPAN   ROYAL SOCIETY OF CHEMISTRY

The 12th CSJ-RSC Joint Symposium
Aquatic Chemical Science and Materials

Prof. Takashi Kato

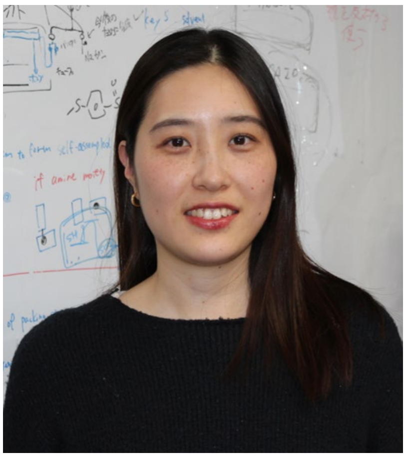
Prof. Paola Carbone



Prof. Masaru Tanaka

Prof. Yuka Ikemoto

Prof. Yoshinori Takashima



Prof. Yui Sasaki

Dr. Andrew Shore

Prof. Mitsuo Sawamoto

CSJ Chemistry Festa, Tower Hall Funabori, Tokyo, Japan

The 12th CSJ-RSC Joint Symposium

Aquatic Chemical Science and Materials

In conjunction with the 15th CSJ Chemistry Festa, Tower Hall Funabori, Tokyo, Japan

Friday, 24 October 2025

PROGRAMME

13:30 **Opening Remarks by Guest Organizer**
Takashi Kato (Specially Appointed Professor, Shinshu Univ. / Specially Appointed Professor, Okayama Univ. /Professor Emeritus, Univ. of Tokyo)

Session 1. Yoshinori Takashima (Professor, Osaka Univ.), *Presiding*

13:40 **Aquatic Functional Materials: Harmonizing with Water for Sustainable Applications**
Takashi Kato (Specially Appointed Professor, Shinshu Univ. Specially Appointed Professor, Okayama Univ. /Professor Emeritus, Univ. of Tokyo)

14:05 **Characterizing the Electrolyte/Graphene Interface: An Integrated Approach with Modelling and Experiments**
Paola Carbone（Professor, Univ. of Manchester）

14:30 **Understanding Water-Mediated Interactions at Soft Material Interfaces for Biomedical Applications**
Masaru Tanaka (Professor, Kyushu Univ.)

14:55 *Break*

Session 2. Masaru Tanaka (Professor, Kyushu Univ.), *Presiding*

15:15 **Advanced Infrared Spectroscopic Techniques for Investigating Water-Polymer Interactions**
Yuka Ikemoto (Senior Chief Scientist, Japan Synchrotron Radiation Res. Inst.)

15:40 **Water-Mediated Crosslinking for Designing Tough and Adaptive Polymer Networks**
Yoshinori Takashima (Professor, Osaka Univ.)

16:05 **Chemosensor Arrays for Aqueous Environments: A Supramolecular Approach**
Yui Sasaki (Professor, Univ. of Tokyo)

16:30 **Chemistry's Role in Building a Fairer, Safer, and More Sustainable World**
Andrew Shore (International Engagement Manager, RSC)

16:55 **Closing Remarks**
Andrew Shore (International Engagement Manager, RSC)
Mitsuo Sawamoto (International Exchange Committee Chair, CSJ)

Aquatic Functional Materials Harmonizing with Water for Sustainable Applications

Takashi Kato（Shinshu Univ.; Okayama Univ.; The Univ. of Tokyo）

Water is essential in life and societies. Aquatic functional materials show functions in environment where water molecules exist. These materials are critical for healthcare, environment, and sustainable societies. To develop highly functional materials, it is important to understand the interactions between water molecules and materials. We have promoted the project entitled Aquatic Functional Materials supported by MEXT and JSPS from 2019-2024. In the project, we developed new functional materials such as water treatment membranes, biomedical materials, sensing materials as well as hybrid materials obtained in aquatic environment. Here I describe nanoporous self-organized water treatment membranes. We prepared nanostructured polymer membranes by in situ polymerization of columnar, smectic, and bicontinuous cubic LC ionic monomers [1-5]. These membranes have well-ordered nanopores and show unique selectivity of inorganic ions [3-5]. To understand the mechanisms of the ion recognition and selectivity, we examined hydrogen-bonded structures of water molecules in the nanospace using synchrotron-based high-resolution soft X-ray emission spectroscopy [6]. MD simulation also exhibited the structures and stability of confined water molecules inside the ionic nanopores (Fig.1) [7]. Moreover, the membranes showed high removal performance for viruses [8] In addition, selective separation properties for the mixture of CO_2/N_2 under humidified conditions were observed for these membranes [9]. Self-organized nanoporous membranes in aquatic environment have great potentials as functional materials for sustainability.

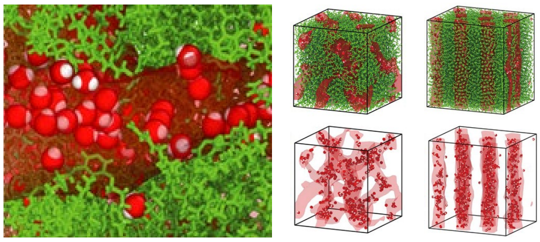


Fig. 1. Snapshots of bicontinuous cubic and columnar liquid crystals containing water molecules confined in the ionic nanopores.

1) J. Uchida, B. Soberats, M. Gupta, T. Kato, *Adv. Mater.* **2022**, *34*, 2109063.
2) T. Kato, J. Uchida, T. Ichikawa, T. Sakamoto., *Angew. Chem. Int. Ed.,* **2018**, *57*, 4355.
3) M. Henmi, K. Nakatsuji, T. Ichikawa, T. Sakamoto, M. Yoshio, T. Kato, *Adv. Mater.* **2012**, *24*, 2238,
4) S. Mehlhose, T. Sakamoto, M. Eickhoff, T. Kato, M. Tanaka, *J. Phys. Chem. B*, **2024***, 128*, 4537
5) T. Kato, J. Uchida, Y. Ishii, G. Watanabe, *Adv. Sci.*, **2024**, *11*, 2306529. .
6) R. Watanabe Y. Harada, T. Kato, *Angew. Chem. Int. Ed.,* **2020**, *59*, 23461.
7) Y. Ishii, N. Matubayasi, G. Watanabe, T. Kato, H. Washizu, *Sci. Adv.* **2021**, *7*, eabf0669.
8) T. Sakamoto, K. Asakura, M. Liu, T. Hayashi, H. Katayama, T. Kato *J. Mater. Chem. A*., **2023**, *11*, 22178.
9) T. Kato, K. Imamura, T. Sakamoto, Y. Hoshino, *Chem. Commun.*, **2025**, *61*, 3998.

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Takashi Kato（Shinshu University, Specially Appointed Professor / Okayama University, Professor (Specially Appointed) / The University of Tokyo, Professor Emeritus）

[1] Takashi Kato received his Ph.D. from The University of Tokyo in 1988. After his postdoctoral research at Cornell University with Professor Jean M. J. Frechet, he joined the Univ. of Tokyo in 1989. In 2025, he retired The Univ. of Tokyo, and then he joined Shinshu Univ. and Okayama Univ. [2] Design, synthesis and functionalization of self-assembled functional materials including supramolecules, polymers, liquid crystals, and hybrids. [3] 2021 the Medal with Purple Ribbon (Cabinet Office, The Government of Japan), The Chemical Society of Japan Award (2016), SPSJ Award for Outstanding Achievement in Polymer Science and Technology (2021). He is a fellow of Royal Society of Chemistry (2014-). He is a honorary member of The Society of Polymer Science, Japan (2025). [4] Handbook of Liquid Crystals, 2nd Ed. Wiley-VCH, Ed. By J. W. Goodby and T. Kato et al. (2014). [5], E-mail address: t-tkato@g.ecc.u-tokyo.ac.jp.

Characterizing the electrolyte/graphene interface: an integrated approach with modelling and experiments

Paola Carbone（University of Manchester）

The physical-chemistry of the graphene/aqueous–electrolyte interface underpins the operational conditions of a wide range of devices. Despite its importance, this interface is poorly understood due to the challenges faced in its experimental characterization and the difficulty of developing models that encompass its full physics. [1]
In this talk I'll show how combining molecular simulations with experiments, it is possible to investigate the relationship between wetting, double layer structure, friction coefficient and interfacial dynamics and understand how these properties are related to the capacitive properties of the interface. I'll initially introduce the new multiscale modelling techniques we developed to capture the ions-induced polarization of graphite modelling simultaneously the coupled motion of the surface electrons and ions in the solution.[2, 3] Then I'll show some application of the methods to electrified bulk interfaces and under confinement and show how the simulation results can be an invaluable tool to understand experimental data.[4, 5]

1）J. D. Elliott, A. A. Papaderakis, R. A. W. Dryfe, P. Carbone, *J. Mater. Chem. C*, **2022**, *10*, 15225.
2) J. D. Elliott, A. Troisi, P. Carbone, *J. Chem. Theory Sim*., **2020**, *16*, 5253.
3) N. DiPasquale, J. D. Elliott, P. Hadjidoukas, P. Carbone, *J. Chem. Theory Sim*., **2021**, *17*, 4477.
4) J. D. Elliott, M. Chiricotto, A. Troisi, P. Carbone, *Carbon*, **2023**, 292.
5) Z. Wei, J. D. Elliott, A. A. Papaderakis, R. A. Dryfe, P. Carbone, *J. Am. Chem. Soc*., **2023**, *146*, 760.

PROFILE

Paola Carbone（University of Manchester, Professor of Theoretical and Computational Chemistry）

Paola Carbone is Professor of Computational and Theoretical Chemistry in the Department of Chemistry of the University of Manchester and currently chair of the CCP5. She obtained her PhD in Material Science from "Universita' Bicocca" in Milan (Italy) in 2004. After a 2-years postdoc at the University of Bologna, in 2006 she was awarded a fellowship from the Humboldt Foundation and joined the group of Prof. Mueller-Plathe in Darmstadt (Germany). In 2008 she moved to the University of Manchester with a RCUK fellowship where she is now Professor in Computational and Theoretical Chemistry. Her area of expertise is simulations of soft matter and her group specializes in developing new multiscale coupling procedures to link different modelling techniques from quantum mechanics to dissipative particle dynamics. Currently active research areas are: electrolyte/graphene interfaces, polymer composites for industrial applications and surfactant solutions.

Understanding Water-Mediated Interactions at Soft Material Interfaces for Biomedical Applications

Masaru Tanaka* ・Iksung Cho・Takahisa Anada・Shingo Kobayashi（Kyushu Univ.）

Soft materials and medical devices designed for blood-contacting applications have been practically implemented for many years. When the soft materials comprising these devices encounter blood, the body's innate defense mechanisms recognize them as foreign. The foreign body reactions via blood coagulation on soft material surfaces proceed through a sequence of events (**Fig.1**): 1) sorption of water molecules from blood, leading to material hydration; 2) nonspecific adsorption of plasma proteins; 3) conformational changes in adsorbed proteins, exposing cell adhesion sites; 4) platelet adhesion and activation; and 5) subsequent blood cell deposition and fibrin network formation. Water plays a crucial role in biointerfacial interactions, including protein adsorption and cell adhesion on biomaterials[1]. However, water is often the neglected medium at the interface between materials and biology[2]. To understand the role of water in the interaction of proteins and cells at biological interfaces, it is important to compare states of hydration water with various physicochemical properties of hydrated soft materials. Here, we discuss the fundamental concepts for determining the interactions of proteins and cells with hydrated soft materials along with selected examples corresponding to our recent studies[3], poly(2-methoxyethyl acrylate) (PMEA), PMEA derivatives, poly(ethylene glycol) (PEG), poly(*N*-vinyl-2-pyrroridone) (PVP), and poly(2-oxazoline)s, zwitterionic polymers, and other polymers including biopolymers.

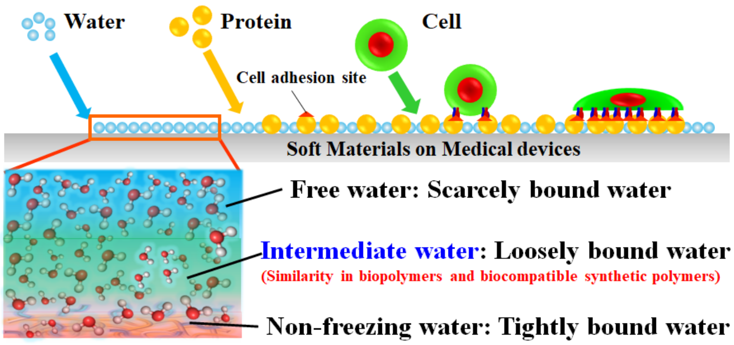

Fig. 1 Soft Material/Protein/Cell interactions at the Bio-Interface.

The states of hydration water were analyzed by differential scanning calorimetry, time-resolved *in situ* attenuated total reflection infrared spectroscopy, solid-states NMR, surface force measurements, and wide variety of analytical techniques. The hydration water can be classified into three types: free water (scarcely bound water), intermediate water (loosely bound water), and non-freezing water (tightly bound water). Among these, intermediate water (IW) was found in hydrated biopolymers and hydrated biocompatible synthetic polymers. We found that IW is a key indicator of the biocompatibility of material surfaces in physiological conditions. The amount of IW is influenced by the type of functional groups, local polymer configuration, and polymer chain mobility. The degree of denaturation of adsorbed proteins was influenced by IW contents. This concept of IW, which is common in hydrated biomolecules and synthetic biocompatible materials, offers a valuable framework for designing soft materials in aqueous environments.

1) T. Tsuruta, *J. Biomater. Sci., Polym. Ed.,* **2010**, *21*, 1827.
2) B.L. Dargaville, D. W. Hutmacher, *Nat. Commun*, **2022**, *13*, 4222.
3) I. S. Cho, S. Shiomoto, N. Yukawa, Y. Tanaka, K.M. Huh, M. Tanaka, *Langmuir*, **2025**, *41*, 8301.

PROFILE

Masaru Tanaka（Institute for Materials Chemistry and Engineering, Kyushu University, Professor）

[1] CV: 1996 TERUMO Co., 2000 Hokkaido Univ., 2007 Tohoku Unv., 2008 Max-Planck-Institute, 2009 Yamagata Univ., 2015 Kyushu Univ. [2] Specialized field: Biomaterials, Biointerfaces, Interfacial water [3] Prizes: SPSJ Asahi Kasei Award 2011, The Ichimura Prize in Science for Excellent Achievement 2019, The Award for the Japanese Society for Biomaterials 2021. [4] Focus papers: *Macromolecules*, 53, 8570 (2020). *ACS Biomater. Sci. Eng.,* 6, 2855 (2020). *Macromolecules*, 54, 2862 (2021). *Biomacromolecules*, 22, 2718 (2021). *Sci. Adv.*, 7, eabi6290 (2021). *Biomacromolecules*, 23, 1569 (2022). *ACS Biomater. Sci. Eng.*, 8, 4547 (2022). *Bull. Chem. Soc. Jpn.*, 96, 1052 (2023). *ACS Appl. Bio Mater.*, 7, 306 (2024). *J. Am. Chem. Soc.*, 147, 22161 (2025). *Nat. Biomed. Eng.* accepted. [5] He has designed biocompatible polymers and commercialized as medical devices such as catheters, stents, and artificial heart lungs: approved by FDA, global market share No.1. E-mail: masaru_tanaka@ms.ifoc.kyushu-u.ac.jp HP: http://www. soft-material.jp/

Advanced Infrared Spectroscopic Techniques for Investigating Water-Polymer Interactions

Yuka Ikemoto（Japan Synchrotron Radiation Research Institute）

Infrared spectroscopy is a technique to study the bonding state of various compounds through molecular vibrations and is widely used for materials analysis. Synchrotron radiation (SR) is an electro-magnetic wave emitted from an electron traveling at almost the speed of light. The SR is well known for its use of high-energy light, especially X-rays, but it also includes low-energy infrared light (IR). The IR-SR has a characteristic of high brilliance compared to a conventional IR thermal radiation source, and it covers over a wide bandwidth from near IR to far IR. The feature of IR-SR is useful for microspectroscopy and infrared spectroscopy in a variety of sample condition. In the present study, humidity-controlled infrared spectroscopy was applied to materials which exhibit functions in aqueous environments, and the state of water and the interaction between water and materials were analysed to elucidate the mechanism of the function. The IR experiments are carried out at IR beamline BL43IR in SPring-8.

Fig. 1 shows a schematic illustration of the humidity control cell used in this study, where the space inside the cell is filled with nitrogen gas mixed with water vapor and the humidity is monitored by a humidity sensor. The cell can be used in the wavenumber range of 8000 to 150 cm-1, which is a full wavenumber range covered by BL43IR. Detectors, window materials, and other optical components are changed as necessary depending on the wavenumber region.

I introduce several investigations in the presentation. One of them is the study about PMEA (poly(2-methoxyethyl acrylate)) (1), that has a blood compatible property and is used as a coating material to prevent blood adsorption. We measured absorption spectra by changing humidity. The OH stretching band are shown in upper left of Fig.2. Lower left panel in Fig.2 shows the results of the theoretical calculation which examine the correlation between the OH stretching frequency and the electric field sensed by the H atom. From these results, the configurations of water molecules are discussed. A model is illustrated in right panel in Fig. 2.

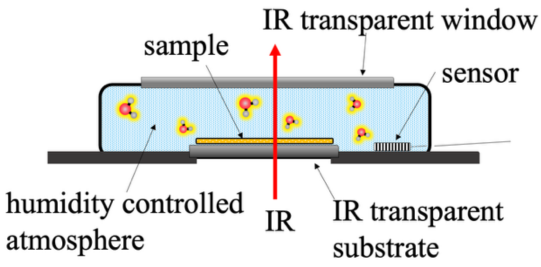

Fig.1 Schematic illustration of humidity control cell.

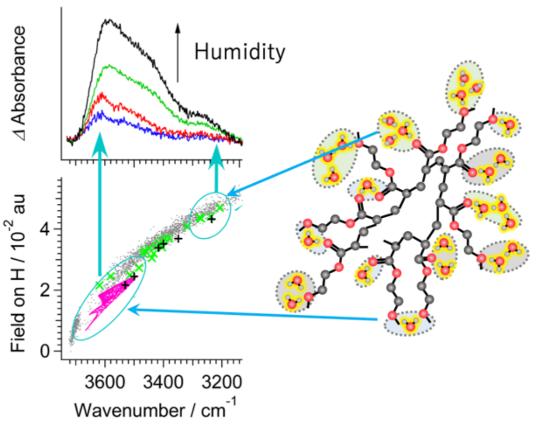

Fig.2 (upper left) OH stretching band in infrared spectra. (lower left) Electric field on H atom are plotted versus wavenumber of OH stretching mode. (right) Illustration of PMEA and water molecules.

1) Y. Ikemoto, Y. Harada, M. Tanaka, S. Nishimura, D. Murakami, N. Kurahashi, T. Moriwaki, K. Yamazoe, H. Washizu, Y. Ishii, H. Torii, *J. Phys. Chem. B*, **2022**, *126*, 4143.

PROFILE

Yuka Ikemoto（Japan Synchrotron Radiation Research Institute (JASRI), Chief Scientist）

I obtained my PhD in Science from Department of Physics, Graduate School of Science, Tohoku University in 1998, spent 3 years as a postdoctoral fellow, and have been working at JASRI since 2001. I am a beamline scientist of the infrared beamline BL43IR at SPring-8, where I support various research projects utilizing infrared synchrotron radiation and develop equipment for advanced infrared spectroscoy.

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Water-Mediated Crosslinking for Designing Tough and Adaptive Polymer Networks

Yoshinori Takashima（Univ. Osaka）

Reversible polymer networks with dynamic cross-links have drawn increasing attention for their potential in creating tough, self-healing, and environmentally adaptive materials. I will present a series of studies demonstrating how host–guest interactions can be harnessed to design polymer networks with water-responsive mechanical properties. (**Figure 1**).

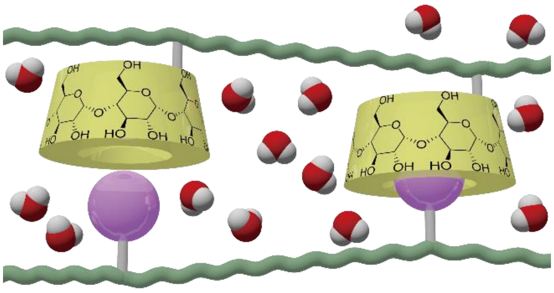

Figure 1. Schematics of a hydrogel cross-linked with host-guest interaction in the presence of waters.

The first study focuses on hydrogels formed via β-cyclodextrin (βCD) and adamantane (Ad) host–guest pairs. These reversible cross-links allowed the network to adapt to hydration changes. Mechanical toughness improved significantly with higher non-freezing water (NFW) and intermediated water (IMW) content, owing to enhanced mobility of the dynamic junctions and efficient stress relaxation. The results reveal how the presence and behavior of NFW and IMW modulate supramolecular dynamics under hydrated conditions.

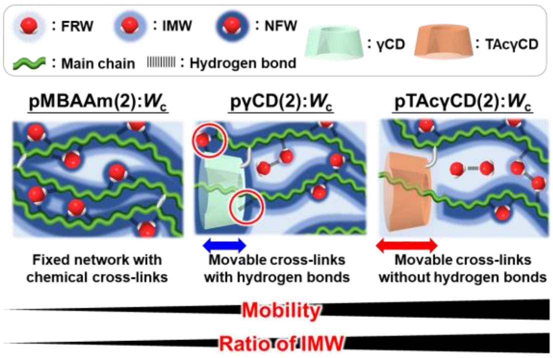

Figure 2. Proposed structures of the hydration in movable cross-linked polymers. Relationship between the mobility and ratio of IMW.

We developed movable cross-linked polymers where guest units were covalently tethered to the network. This design further enhanced cross-link mobility in hydrated conditions, improving mechanical flexibility and toughness. The networks showed hydration-dependent relaxation behaviors, suggesting that IMW facilitates not only plasticization but also dynamic rearrangement (**Figure 2**).

We also examined how the phase state of NFW, IMW vs. free water (FRW) affects biocompatibility. By tuning water distribution in the hydrogel matrix, we could control protein adsorption and promote cell adhesion, with reduced protein denaturation. This underscores the impact of water structuring in designing functional biointerfaces.

These studies offer a coherent strategy for tuning hydrogel mechanics and biofunctionality through molecular mobility and hydration control, with applications in biomedicine, soft robotics, and sustainable materials.

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1) M. Osaki, M. Tanaka, Y. Takashima, et al *Macromolecules* **2021**, *54*, 8067-8076.

2) K. Nishida, R. Ikura, T. Inoue, G. Matsuba, M. Tanaka, Y. Takashima, *Macromolecules* **2024**, *57*, 7745-7754.

3) Y. Kawai, Y. Ikemoto, M. Tanaka, T. Kato, Y. Takashima, Y. *ACS Appl. Polym. Mater.* **2025**, *7*, 7767-7776.

PROFILE

Yoshinori Takashima（The University of Osaka, Professor）

[1] Ph.D., Graduate School of Science, Osaka Univ. (2003), Assis. Prof., Graduate School of Science, Osaka Univ (2004), Lecturer, Graduate School of Science, Osaka Univ. (2014), Prof., Inst. for Advanced Co-Creation Studies, Osaka Univ. (2016), Prof., Grad. Sch. Sci., Osaka Univ. (2023–present). Research interests: molecular adhesives, reversible/movable cross-linked materials, stimuli-responsive materials. [2] Specialized field: Polymer Chemistry, [3] Prizes: the Young Scientists' Prize by the Minister of MEXT (2014), [4] Your focus paper and books: *Nat. Chem.* **2016**, *8*, 625-632. *Adv. Mater*. **2020**, *32*, 2002008. *Chem* **2025**, *11*, 102327, [5] Others: Cleaning helps me relax and reset my mind., takasima@chem.sci.osaka-u.ac.jp）

Chemosensor Arrays for Aqueous Environments: A Supramolecular Approach

Yui Sasaki（The Univ. of Tokyo）

The cross-reactive receptors of the mammalian olfactory systems allow the detection of multiple odorant molecules simultaneously. The obtained recognition information is data-processed, resulting in the discrimination of odor based on pattern recognition. Such sophisticated recognition fashions in *Mother Nature* are promising designs for powerful pattern recognition-driven chemical sensing.[1] Real samples such as body fluids, foods and drinks, and environmental water contain various invisible analytes with different structural geometries, sizes, and charges. Therefore, efficient receptor designs are required, considering the above features of analytes in real-sample analysis. Biogenic receptors, including enzymes and antibodies, are the representative materials that allow selective recognition against specific analytes, based on the lock-and-key models. Meanwhile, synthetic receptors are designed by molecular recognition chemistry, which offers superior cross-reactivity to selective recognition.[2]

Chemosensors comprising synthetic receptors and indicators enable visualization of analyte recognition information through changes in colorimetric and/or fluorescent properties (Fig. 1(a)). Chemosensors on an array show various optical properties depending on the types of analytes and their concentrations, which are referred to as fingerprint-like responses. With pattern recognition techniques, optical chemical information can be visualized qualitatively and quantitatively. In this regard, molecular self-assemblies serve as driving forces for obtaining various optical patterns derived from assembly and disassembly in chemical sensing (Fig. 1(b)).[3), 4] To date, the author has developed self-assembled chemosensors for pattern recognition and revealed the applicability of this concept to various chemical sensing in water environments.[4] The strategies for chemosensor designs based on molecular self-assembly for multi-component analysis will be introduced in the presentation.

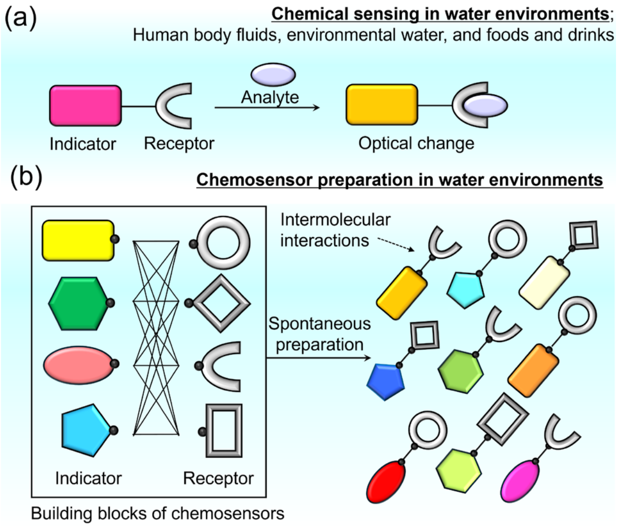

Fig. 1 Conceptual illustration of (a) a typical chemosensor for analyte capture in water environments and (b) the spontaneous preparation of self-assembled chemosensors in water.

1）Y. Sasaki et al., *Coord. Chem. Rev*. **2021**, *429*, 213607.
2）Y. Sasaki et al., *ChemNanoMat* **2024**, *10*, e202300335 (**Cover**).
3）Y. Sasaki et al., *Chem. Sci*. **2020**, *11*, 3790 (**Cover, Hot Article**).
4）Y. Sasaki et al., *Chem. Commun*. **2025**, *61*, 476 (**Cover**).

PROFILE

Yui Sasaki（The University of Tokyo, Lecturer）

[1] Yui Sasaki received her Ph.D. from the University of Tokyo in 2020. From 2018 to 2021, she served as a JSPS Research Fellow for Young Scientists (DC1) and JSPS postdoctoral fellow (PD) at the University of Tokyo. She worked as a Project Researcher between 2021 and 2022 and was promoted to a Project Research Associate at the same university. Subsequently, she was appointed as a Lecturer in 2024. [2] Her interests include self-assembled functional materials. [3] 2023 PCCP Prize (The Chemical Society of Japan) and Young Researcher Support For Attending Lindau Nobel Laureate Meetings (JSPS) [4] Materials Nanoarchitectonics [5] Website: https://www.sayui.rcast.u-tokyo.ac.jp/en/

Chemistry's role in building a fairer, safer, and more sustainable world

Dr Andrew Shore (RSC)[1*]

Public trust in science, and in chemistry, has never mattered more. From the materials we use to the medicines we take, chemistry underpins many of the solutions the world needs. But how the public sees chemistry affects everything from education and careers to public policy.

This talk explores the role of chemistry in society today, and the responsibility of the chemical sciences to serve the public good. Ethical questions increasingly shape both research and regulation, especially in areas such as chemicals policy and sustainability. Chemistry cannot be separated from the values of the society it serves.

The Royal Society of Chemistry is working to ensure that the benefits of chemistry are widely felt, and that the chemical sciences contribute meaningfully to the UN Sustainable Development Goals. This includes our work on chemicals regulation, support for ethical practice, and a commitment to global equity in science.

We are supporting greater participation from the Global South through initiatives such as the Pan Africa Chemistry Network and our programmes for early career researchers. More broadly, we are working to make chemistry more inclusive across many dimensions – including gender, ethnicity, disability, and socioeconomic background – through research, partnerships, and direct action.

Chemistry can be a powerful force for positive change, if it is shaped with care, collaboration and conscience.

PROFILE

Dr Andrew Shore (Royal Society of Chemistry, Senior Programme Manager, International Engagement)

Andrew is an environmental scientist and geochemist. After completing his BSc in Environmental Sciences at University of East Anglia in 2005, Andrew moved to University of Leicester for a PhD in selenium isotope geochemistry. He spent time at University of Illinois Urbana-Champaign (UIUC) during his academic studies.

Andrew joined the Royal Society of Chemistry as a Publishing Editor in 2010 and primarily worked on the inorganic journal portfolio. In 2015, Andrew became Executive Editor of *Dalton Transactions*, *CrystEngComm*, *New Journal of Chemistry* and *RSC Advances*. As Executive Editor, he oversaw the conversion of *RSC Advances* to one of the largest open access chemistry journals in the world and increased publication frequencies for *CrystEngComm* and *New Journal of Chemistry*.

Andrew is currently the Senior Programme Manager, International Engagement. His responsibilities include managing the Pan Africa Chemistry Network, engaging with EuChemS and IUPAC, on behalf of the RSC, as the member society and UK national chemical organisation, and leading the RSC international engagement activities with our global network of partner chemical societies. Finally, he leads the work of the Commonwealth Chemistry Secretariat.

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