Curriculum Vitae

Personal Data:

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Education:

1998-2002	B.S., (Chemistry), Osaka University, Japan
2002-2004	M.S., (Chemistry), Osaka University, Japan
2004-2007	Ph.D., (Chemistry), Osaka University, Japan

Research Experience:

04/2001-03/2002	Bachelor thesis in organic chemistry supervised by Prof. Yoshiteru Sakata and Associate Prof. Takahiro Kaneda, the Institute of Scientific and Industrial Research, Osaka University, Japan. Title: "*Synthesis and Self-Assembly of Bis- and Tris-Azo Dye-modified Permethylated α-Cyclodextrins*"
04/2002-03/2004	Master thesis in organic chemistry supervised by Prof. Yoshio Aso and Associate Prof. Takahiro Kaneda, the Institute of Scientific and Industrial Research, Osaka University, Japan. Title: "*Supramolecular Self-Assemblies of Novel Azo Dye-modified Permethylated Cyclodextrins*"
04/2004-03/2007	PhD thesis in organic photochemistry supervised by Prof. Yoshihisa Inoue, Department of Applied Chemistry, Osaka University, Japan. Title: "*Studies on Entropy-Controlled Supramolecular Photochirogenesis with Synthetic and Modified Chiral Hosts* "

04/2007-03/2008	Post-doc fellow supervised by Timothy M. Swager, Department of Chemistry and Institute for Soldier Nanotechnologies, Massachusetts Institute of Technology (MIT), USA. Title: "*Chemical Sensors Based on Single-Walled Carbon Nanotube Coated with Polythiophenes*"
04/2008-03/2017	Assistant Professor, Researcher and Research Supervisor. Title: "*Supramolecular Sensing and Photochemistry with Functional Chiral Polymers*"
04/2017-present	Associate Professor, Researcher and Research Supervisor. Title: "*Supramolecular Allosteric Amplification-Sensing*"
10/2017-3/2021	JST-PRESTO Researcher. Title: "*Allosteric Signal-Amplification Sensing*"

Membership in Academic Societies:

The Chemical Society of Japan
The Japan Society for Analytical Chemistry
Japanese Cancer Association
The Japanese Photochemistry Association
The Society of Polymer Science, Japan
The Society of Synthetic Organic Chemistry, Japan

Principal Research Interests:

Analytical Chemistry, Supramolecular Chemistry, Molecular and Chiral Recognition, Polymer Chemistry, Polysaccharide Chemistry, Sensor Technology

Publications:

1) **Fukuhara, G.*** *et al*. submitted.
2) **Fukuhara, G.*** *et al*. submitted.
3) **Fukuhara, G.*** *et al*. submitted.

1) Norikuni, M.; Hori, Y.; Numata, M.; Matsusaki, M.; Kida, T.; **Fukuhara, G.***: Fluorophore-Probed Curdlan Polysaccharide Chemosensor: "Turn-On" Oligosaccharide Sensing in Aqueous Media, ***ACS Omega*** accepted.
2) Morita, F.; Kishida, Y.; Sato, Y.; Sugiyama, H.; Abekura, M.; Nogami, J.; Toriumi, N.; Nagashima, Y.; Kinoshita, T.; **Fukuhara, G.**; Uchiyama, M.; Uekusa, H.; Tanaka, K.*: Design and enantioselective synthesis of 3D π-extended carbohelicenes for circularly polarized luminescence, ***Nat. Synth***. accepted.
3) Kurohara, H.; Hori, Y.; Numata, M.; **Fukuhara, G.***: Fluorophore-glucan conjugate for oligosaccharide sensing in aqueous media, ***Polym. J.*** in press.
4) Wakako, S.; Hori, Y.; Kinoshita, T.; Saiki, T.; Qi, X.; Hasegawa, K.; Imai, Y.; Mori, T.; Nakagawa, K.; **Fukuhara, G.***: Pressure-Responsive Polymer Chemosensors for Hydrostatic-Pressure-Signal Detection: Poly-L-Lysine-Pyrene Conjugates, ***ACS Macro Lett***. **2023**, *12*, 1389-1395. [Supplementary Cover] (***ChemRxiv*** doi: 10.26434/chemrxiv-2023-ft59l)
5) Mizuno, H.; Nakazawa, H.; Harada, M.; Yakiyama, Y.; Sakurai, H.*; **Fukuhara, G.***: Sumanene-stacked supramolecular polymers. Dynamic, solvation-directed control, ***Chem. Commun.*** **2023**, *59*, 9595-9598. [Outside Back Cover] (***ChemRxiv*** doi: 10.26434/chemrxiv-2023-d97rm)
6) Nishi, R.; Ishida, Y.; Mizuno, H.; Kawauchi, S.; **Fukuhara, G.***: Allosteric Signal-Amplification Sensing of Peptides with Cyclodextrin-Polymer Conjugates in Aqueous Media, ***ACS Appl. Polym. Mater.*** **2023**, *5*, 3653-3660.
7) Kinoshita, T.; Nakamura, S.; Harada, M.; Hasobe, T.*; **Fukuhara, G.***: Control of intramolecular singlet fission in a pentacene dimer by hydrostatic pressure, ***Chem. Sci.*** **2023**, *14*, 3293-3301. [Press Release] [Highlighted in *Chem-Station*] [*Eurekalert*]
8) Kurohara, H.; Hori, Y.; Numata, M.; **Fukuhara, G.***: Oligosaccharide Sensing Using Fluorophore-Probed Curdlans in Aqueous Media, ***ACS Appl. Polym. Mater.*** **2023**, *5*, 2254-2263.
9) Suzuki, S.; Homma, A.; Nishi, R.; Mizuno, H.; Kawauchi, S.; **Fukuhara, G.***: A Dynamically Responsive Chemosensor That Can be Modulated by an Effector: Amplification Sensing by Positive Heterotropic Allosterism, ***Bull. Chem. Soc. Jpn.*** **2022**, *95*, 1183-1189. [Selected Paper]

10) Mizuno, H.; **Fukuhara, G.***: Solution-State Hydrostatic Pressure Chemistry: Application to Molecular, Supramolecular, Polymer, and Biological Systems, ***Acc. Chem. Res.*** **2022**, *55*, 1748-1762. [Review] [Supplementary Cover]
11) Kinoshita, T.; Fujise, K.; Tsurumaki, E.; Toyota, S.*; **Fukuhara, G.***: A pressure-induced ratiometric signalling chemosensor: a case of helical anthracenes, ***Chem. Commun.*** **2022**, *58*, 3290-3293. [2022 Pioneering Investigators]
12) Nakasha, K.; **Fukuhara, G.***: Dynamic hybridization of fluorescence polymers upon complexation of glucan, ***J. Photochem. Photobiol. A: Chem.*** **2022**, *426*, 113736.
13) Tsuchiya, T.; Mizuno, H.; **Fukuhara, G.***: The factors that govern the allosteric chemical sensing of polythiophene chemosensors: scope and limitation toward signal-amplification sensing, ***RSC Adv.*** **2021**, *11*, 30472-30478.
14) **Fukuhara, G.***: Smart polymer chemosensors: Signal-amplification systems with allosterism, ***Polym. J.*** **2021**, *53*, 1325-1334. [Review]
15) Matoba, S.; Kanzaki, C.; Yamashita, K.; Kusukawa, T.; **Fukuhara, G.**; Okada, T.; Narushima, T.; Okamoto, H.; Numata, M.*: Directional Supramolecular Polymerization in a Dynamic Microsolution: A Linearly Moving Polymer's End Striking Monomers, ***J. Am. Chem. Soc.*** **2021**, *143*, 8731-8746.
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51) Kawanami, Y.; Katsumata, S.; Nishijima, M.; **Fukuhara, G.**; Asano, K.; Suzuki, T.; Yang, C.; Nakamura, A.; Mori, T.; Inoue, Y.*: Supramolecular Photochirogenesis with Higher-Order Complex. Highly Accelerated Exclusively Head-to-Head Photocyclodimerization of 2-Anthracenecarboxylic Acid via 2:2 Complexation with Prolinol, ***J. Am. Chem. Soc.*** **2016**, *138*, 12187-12201. [Highlighted in *SYNFACTS* **2016**, *12*, 1248]

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