



Curriculum Vitae



Basic Information

Name: Itaru Hamachi	Sex: Male
Nationality: Japanese	Birthday: 1960, June 14
Position: Professor of Kyoto University	Birthplace: Fukuoka, JAPAN
Institution: Department of Synthetic Chemistry and Biological Chemistry, Faculty of Engineering, Kyoto University	
Research interest: Chemistry in Multi-molecular Crowding Biosystems, Chemical Biology, Supramolecular Chemistry,	

Educational background

He received his B. S. of Chemistry in 1983 from Kyoto University,
M. S. of Chemistry in 1985 from Kyoto University,
Ph. D. of Chemistry in 1988 from Kyoto University (supervised by Prof Iwao Tabushi)

Professional backgrounds

He joined the faculty of Kyushu University as an Assistant Professor (Prof. Toyoki Kunitake's group) in 1988, and was promoted to be an Associate Professor of Kyushu University (Prof. Seiji Shinkai's group) in 1992. In 2001, he became a full Professor of Kyushu University and then moved to Kyoto University in 2005. In 2026, he became a Professor Emeritus of the Graduate School of Engineering and a Program-Specific Professor of the Institute of Advanced Energy at Kyoto University.

He was selected as a PRESTO investigator in two research topics for 7 years (from 2000 to 2006), and then selected as a leader of two CREST projects (from 2008 to 2013 and then from 2013 to 2018) and more recently was selected as an ERATO research director (focused on innovative neuro-chemical biology from 2018 to 2025). All of them are financially supported by Japan Science and Technology (JST) Agency. He also served one PRESTO project (on single cell analysis) as a director/supervisor that scientifically encouraged and financially supported young generation in the research field of single cell analysis from 2014-2020.

Publication

365 papers including 26 in *Nature journals* and 67 in *JACS*

Citation:22973 h-index: 85

Representative papers:

1. In-brain synthesis of receptor-based protease sensors by coupling ligand-directed chemistry and click chemistry, S. Sakamoto, K. Shiraiwa, M. Wang, M. Ishikawa, H. Nonaka,* I. Hamachi*, *Nat. Synth.*, 4, 1128-1140 (2025) doi: 10.1038/s44160-025-00815-6
2. Photoproximity labeling of endogenous receptors in the live mouse brain in minutes, M. Takato,

- S. Sakamoto, H. Nonaka, F. Y. Tanimura Valor, T. Tamura*, I. Hamachi*, *Nat. Chem. Biol.*, 21, 109-119 (2025) doi: 10.1038/s41589-024-01692-4
3. Bioorthogonal chemical labeling of endogenous neurotransmitter receptors in living mouse brains, H. Nonaka, S. Sakamoto, K. Shiraiwa, M. Ishikawa, T. Tamura, K. Okuno, T. Kondo, S. Kiyonaka, E. A. Susaki, C. Shimizu, H. R. Ueda, W. Kakegawa, I. Arai, M. Yuzaki, I. Hamachi*, *Proc. Natl. Acad. Sci. U. S. A.*, 121, 6: 2313887121 (2024) doi: 10.1073/pnas.2313887121
4. Organelle membrane-specific chemical labeling and dynamic imaging in living cells, T. Tamura, A. Fujisawa, M. Tsuchiya, Y. Shen, K. Nagao, S. Kawano, Y. Tamura, T. Endo, M. Umeda, I. Hamachi*, *Nat. Chem. Biol.*, 16, 12, 1361-1367(2020) doi:10.1038/s41589-020-00651-z
5. Discovery of allosteric modulators for GABAA receptors by ligand-directed chemistry, K. Yamaura, S. Kiyonaka*, T. Numata, R. Inoue, I. Hamachi*, *Nat. Chem. Biol.*, 12, 822-830 (2016)
6. In situ real-time imaging of self-sorted supramolecular nanofibers, S. Onogi, H. Shigemitsu, T. Yoshii, T. Tanida, M. Ikeda, R. Kubota, I. Hamachi*, *Nat. Chem.*, 8, 743-752 (2016)
7. Installing Logic-gate Responses to a Variety of Biological Substances in Supramolecular Hydrogel-enzyme Hybrids, M. Ikeda, T. Tanida, T. Yoshii, K. Kurotani, S. Onogi, K. Urayama, I. Hamachi*, *Nat. Chem.*, 6, 511-518 (2014)
8. Self-assembling Nano-probes Displaying Off/On ¹⁹F NMR Signals for Protein Detection and Imaging, Y. Takaoka, T. Sakamoto, S. Tsukiji, M. Narazaki, T. Matsuda, H. Tochio, M. Shirakawa, I. Hamachi*, *Nat. Chem.*, 1, 557-561 (2009)
9. Ligand-directed Tosyl Chemistry for Protein Labeling in Vivo, S. Tsukiji, M. Miyagawa, Y. Takaoka, T. Tamura, I. Hamachi*, *Nat. Chem. Biol.*, 5, 341-343 (2009)
10. Semi-wet Peptide/Protein Array Using Supramolecular Hydrogel, S. Kiyonaka, K. Sada, I. Yoshimura, S. Shinkai, N. Kato, I. Hamachi*, *Nat. Mater.*, 3, 57-64 (2004)

International Journal Editorial Advisory Board

<i>ACS Central Science</i> (2015-)	<i>Bioconjugate Chemistry</i> (2019-)
<i>Cell Chemical Biology</i> (2002)	<i>Chem</i> (2016-)
<i>Chem Commun</i> (Associate Editor, 2016-)	<i>Current Opinion in Chemical Biology</i> (2012-)
<i>Chemical Science</i> (2023-)	<i>ChemBioChem</i> (2012-2020)
<i>Chem. Asian J</i> (2014-2021)	<i>Adv Science</i> (2015-)
Scientific advisory committee board member: Max Planck Institute (Medicine: Heidelberg) (2017-)	

Awards

The Chemical Society of Japan Award for Creative Work (2005)
 Fellow of Royal Society of Chemistry (2011 in UK)
 Nagoya Silver Medal of Organic Chemistry (2014)
 Peking University Eli-Lily Lectureship award (2014 in China)
 UC Berkeley BASF Lectureship award (2017 in USA)
 The Chemical Society of Japan Award (2018)
 Peking University Xingda lectureship award (2020 in China)