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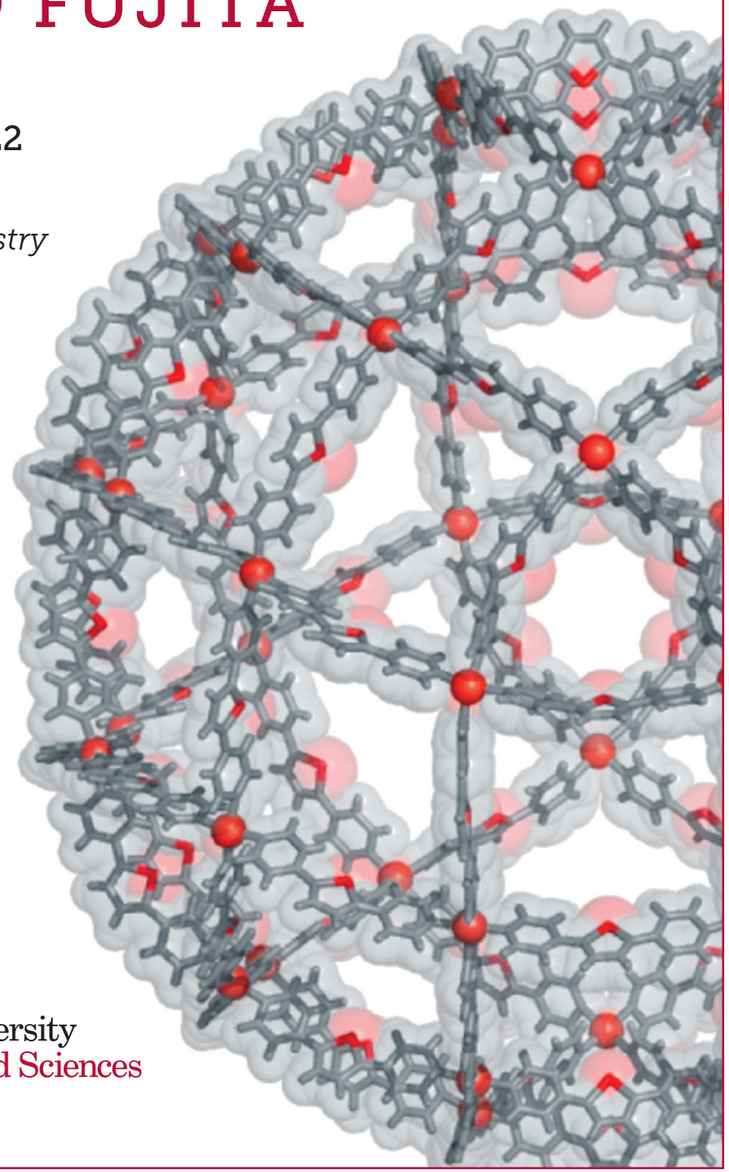
Inaugural Ojima Distinguished Lectureship Award in Chemistry

HONORING

MAKOTO FUJITA

Friday, April 29, 2022

Presented by the Department of Chemistry and ICB&DD



Stony Brook University
College *of* Arts and Sciences

The Ojima Distinguished Lectureship Award in Chemistry

As a longstanding and exemplary faculty member dedicated to excellence in research, Distinguished Professor Iwao Ojima wanted to complement his own work with philanthropy and create the Ojima Distinguished Lectureship Award in Chemistry. Established in 2020 to commemorate Ojima's 75th birthday, the award is based on an endowment from the Ojima family to help ensure that eminent scholars can continue to enrich the Department of Chemistry and Stony Brook University. The Ojima family is grateful for the opportunity to strengthen and extend their Stony Brook legacy through this gift.

Iwao Ojima
Distinguished Professor
Director, Institute of Chemical Biology and Drug Discovery

Iwao Ojima's research interests focus on synthetic organic and medicinal chemistry and chemical biology, including the discovery and development of anticancer agents, antimicrobials and targeted drug delivery systems. He is recognized world-wide for his pioneering and innovative works on organometallic chemistry, homogeneous catalysis and catalytic asymmetric synthesis, and new and efficient synthetic methods and methodologies. He holds more than 100 patents, including 40 U.S. patents.

Ojima received his BS, MS and PhD degrees from The University of Tokyo, Japan. He was a senior research fellow at the Sagami Institute of Chemical Research until 1983, at which time he joined Stony Brook University's Department of Chemistry as an associate professor. In 1984 he was appointed professor, then leading professor in 1991 and distinguished professor in 1995. Ojima was the department chair from 1997 to 2003, and has been serving as the founding director for the Institute of Chemical Biology and Drug Discovery since 2003, and as president of the Stony Brook University chapter of the National Academy of Inventors since 2016.

In recognition of his seminal contributions to the chemical sciences, Ojima has received many prestigious honors, including awards in four subdisciplines from the American Chemical Society: Arthur C. Cope Scholar Award, E.B. Hershberg Award for Important Discoveries of Medicinally Active Substances, ACS Award for Creative Work in Fluorine Chemistry and E. Guenther Award in the Chemistry of Natural Products. He was inducted into the Medicinal Chemistry Hall of Fame and American Chemical Society, and received the Chemical Society of Japan Award and Outstanding Inventor Award from the Research Foundation of the State University of New York. Ojima is an elected fellow of the J.S. Guggenheim Memorial Foundation, American Association for the Advancement of Science, New York Academy of Sciences, American Chemical Society, National Academy of Inventors and European Academy of Sciences.

INAUGURAL AWARD RECIPIENT

Makoto Fujita
University Distinguished Professor
The University of Tokyo

HONORS AND AWARDS

2020
Clarivate Citation Laureate

2019
Japan Academy Prize
Imperial Prize of the Japan Academy
Paul Karrer Medal

2018
Wolf Prize in Chemistry
for conceiving metal-directed assembly principles leading to large highly porous complexes

2014
Fred Basolo Medal
Medal of Honor With Purple Ribbon
ISNSCE Nanoscience Prize

2013
Arthur C. Cope Scholar Award
The Chemical Society of Japan Award

Although much of chemistry is devoted to creating molecules by forming strong covalent bonds between atoms, supramolecular chemistry in contrast examines the interactions between molecules to create novel molecules. Makoto Fujita introduced the concept of metal-guided synthesis or metal-directed self-assembly to supramolecular chemistry, creating building blocks from transition metal groups and organic molecules that self-assemble into large, stable, cyclic and 3D structures. The 3D structures created by this method form a regular "cage" that can be used as "containers" for other molecules. One revolutionary application of these structures is to capture other molecules within those spaces aligned in the same orientation, allowing the use of standard x-ray crystallography to determine structures without the need to obtain a crystallized sample.

Fujita has been recognized with numerous awards for his research, notably the prestigious Wolf Prize in Chemistry in 2018. The award was shared with Omar Yaghi, University of California, Berkeley, for conceiving metal-directed assembly principles leading to large highly porous complexes. Fujita and Yaghi pioneered reticular chemistry via metal-organic frameworks and covalent organic framework.

Fujita received his PhD in engineering from the Tokyo Institute of Technology in 1987. After serving as assistant professor and then associate professor at Chiba University (1988 to 1997), as well as associate professor at the Institute of Molecular Science (1997 to 1999), he was appointed professor at the Graduate School of Engineering, Nagoya University, in 1999. He joined the School of Engineering at The University of Tokyo in 2002 as professor, and was appointed to university distinguished professor in 2019. Since 2018, Fujita holds a distinguished professorship in the Institute of Molecular Science.

INAUGURAL OJIMA DISTINGUISHED LECTURESHIP AWARD IN CHEMISTRY

LECTURE

Coordination Self-Assembly: From Origins to the Latest Advances

FRIDAY, APRIL 29, 2022

4 pm • Charles B. Wang Center Theatre

Presented by the Department of Chemistry and ICB&DD

Makoto Fujita

University Distinguished Professor
Department of Applied Chemistry
The University of Tokyo

In this lecture, Makoto Fujita will speak about the rapid growth of molecular self-assembly based on coordination chemistry. For more than 30 years it has been shown that the simple combination of transition-metal's square planer geometry with pyridine-based bridging ligands gives rise to the quantitative self-assembly of nano-sized, discrete organic frameworks. Examples include square molecules, linked-ring molecules, cages, capsules and tubes that are self-assembled from simple and small components. The lecture will explore this compelling field and highlight Fujita's current research, which focuses on molecular confinement effects in coordination cages, solution chemistry in crystalline porous complexes and giant self-assemblies.

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