

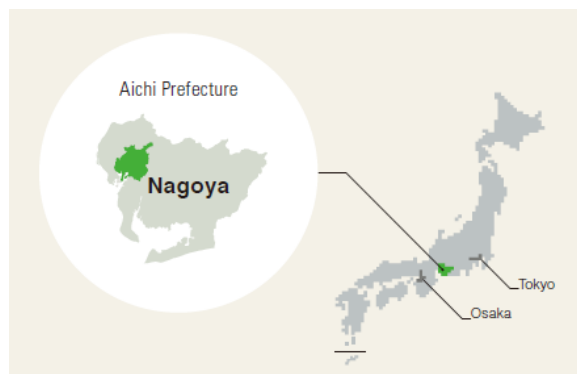


# 名古屋大学高等研究院 INSTITUTE FOR ADVANCED RESEARCH, NAGOYA UNIVERSITY

高等研究院

## The City of Nagoya

– Japan’s Heartland at the Crossroads of Technology, Culture, and History







**TOYOTA**



INSTITUTE FOR ADVANCED RESEARCH  
**NAGOYA UNIVERSITY**





	<p><b>Dr. Ryoji NOYORI</b></p> <p>1967 Ph.D., Kyoto University 1968 Associate Professor of Chemistry, Nagoya University 1997-1999 Dean, Graduate School of Science, Nagoya University 2003- University Professor, Nagoya University</p>		<p><b>Dr. Toshihide MASKAWA</b></p> <p>1962 Graduated from School of Science, Nagoya University 1967 Ph.D., Nagoya University Research Associate, School of Science, Nagoya University 2007- Distinguished Invited University Professor, Nagoya University 2009- University Professor, Nagoya University</p>
	<p><b>Dr. Osamu SHIMOMURA</b></p> <p>1960 Ph.D., Nagoya University 1963 Associate Professor, School of Science, Nagoya University 2008- Distinguished Invited University Professor, Nagoya University 2009- University Professor, Nagoya University</p>		<p><b>Dr. Makoto KOBAYASHI</b></p> <p>1967 Graduated from School of Science, Nagoya University 1972 Ph.D., Nagoya University 2008- Distinguished Invited University Professor, Nagoya University 2009- University Professor, Nagoya University</p>



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日本語

# The Noyori Laboratory

Department of Chemistry and Research Center for Materials Science, Nagoya University  
名古屋大学 大学院理学研究科 特別研究室 / 物質科学国際研究センター 分子触媒研究分野



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#### Academic Staff

- ▶ **R. Noyori** University Professor
- ▶ **S. Saito** Associate Professor
- ▶ **H. Naka** Assistant Professor
- ▶ **S. Tanaka** Assistant Professor

Our research group focuses on molecular catalysis and, consequently, contributes in diverse ways to the progress of modern chemistry.

▶ Admissions for PhD and MSc program from international students are welcome.

## News

[Ryoji Noyori Laboratory] Department of Chemistry and Research Center for Materials Science, Nagoya University

### Paper: Carbon Dioxide Fixation

2013年2月5日 火曜日



DMSC  
100 °C

Acetals of N,N-Dimethylformamides: Ambiphilic Behavior in Converting Carbon Dioxide to Dialkyl Carbonates

Yuki Takada, Aki Matsuoka, Ya Du, Hiroshi Naka, and Susumu Saito

PAST POSTS

RSS 登録



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Global COE Programs			
Year	Field	Program Title	Program Leader
2007	Life Sciences	Advanced Systems-Biology: Designing The Biological Function	Graduate School of Science Prof. KONDO Takao
	Chemistry, Material Sciences	Establishment of COE for Elucidation and Design of Materials and Molecular Functions	Research Center for Materials Science Prof. WATANABE Yoshihito
	Humanities	Hermeneutic Study and Education of Textual Configuration	Graduate School of Letters Prof. SATO Shoichi
2008	Medical Sciences	Integrated Functional Molecular Medicine for Neuronal and Neoplastic Disorders	Graduate School of Medicine Prof. SOBUE Gen
	Mathematics, Physics, Earth Sciences	Quest for Fundamental Principles in the Universe: from Particles to the Solar System and the Cosmos	Graduate School of Science Prof. SUGIYAMA Naoshi
	Mechanical, Civil Engineering, Architectural & Other Fields of Engineering	COE for Education and Research of Micro-Nano Mechatronics	Graduate School of Engineering Prof. FUKUDA Toshio
2009	Interdisciplinary, Combined Fields, New Disciplines	From Earth System Science to Basic and Clinical Environmental Studies	Hydrospheric Atmospheric Research Center Prof. YASUNARI Tetsuzo

	Undergraduate	Graduate	Total
Total	9,946	6,449	16,395



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A "Premier Intellectual Community" within Nagoya University

## IAR ACADEMY



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## IAR RESEARCH PROJECTS



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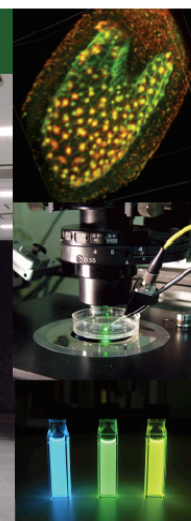
## Institute of Transformative Bio-Molecules (ITbM), Nagoya University



plant/animal biology



synthetic chemistry



imaging



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## A "Premier Intellectual Community" within Nagoya University

### Ambitious, Full-Scale Collaboration

#### Synthetic Chemists - Plant/Animal Biologists - Theoreticians

Additional animal biologists and pharmaceutical scientists will be hired in future

All PIs are world-leading young scientists in each area.

3 very strong overseas PIs (Bode, Crudden, Torii)

253 papers published in top journals (IF >9)  
>500 plenary/invited lectures during the last 4 years

Changing the world with molecules

**Director**  
NEXT  
Kenichiro Itami (41)  
(catalysis, bioactive molecules, materials)

**Vice Director**  
ERATO  
Tetsuya Higashiyama (41)  
(plants, cell biology, live-imaging)

**President of Canadian Society for Chemistry**  
Cathleen Crudden (46)  
Queen's Univ, Canada (materials, organometallics)

**CREST**  
Takashi Yoshimura (42)  
(animal physiology, reproduction)

**CREST**  
Jeffrey Bode (38)  
ETH, Switzerland (synthesis, peptides)

**CREST**  
Shigehiro Yamaguchi (43)  
(electronic materials, molecular design)

**HHMI-GBMF**  
Keiko Torii (46)  
Univ of Washington (plant development)

**ALCA**  
Toshinori Kinoshita (44)  
(plant physiology, signal transduction)

**CREST**  
Stephan Irlé (45)  
(quantum chemistry, molecular simulation)

**CREST**  
Takashi Ooi (47)  
(organocatalysis, molecular recognition)

All PIs (av. age 43) can take full responsibilities for the next decade and more.

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## A "Premier Intellectual Community" within Nagoya University

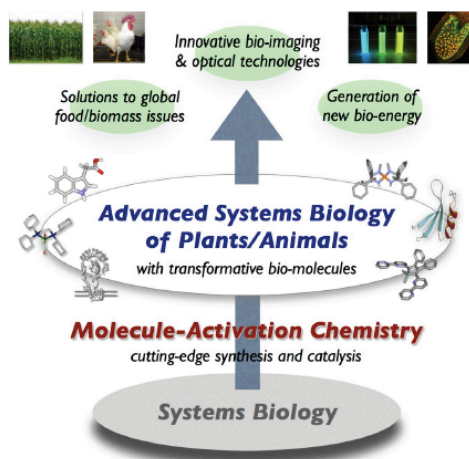
### Changing the World with Synthetic Bio-Molecules

**OUR GOAL** is to develop "**transformative bio-molecules**", innovative functional molecules that make a marked change in the form and nature of biological science and technology.

**OUR UNIQUE APPROACH** is to apply our **cutting-edge synthesis** (molecule-activation chemistry), with the support of computational chemistry, to synthesize key molecules to explore **advanced systems biology in plants and animals**.

**THE IDENTITY** of ITbM is its capability to **synthesize** completely new bio-functional molecules with carefully **designed** functions.

**EXPECTED OUTCOME**  
Our ten-year campaign will culminate in a wealth of **synthetic bio-molecules** that will be key to solving urgent problems at the interface of chemistry and biology. The innovation in food/biomass production, optical technologies, and generation of new bio-energy can be imagined as our dream.



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## Mission

To promote the academic development of Nagoya University, the Institute for Advanced Research has three principal functions:

- 1 | As an academy within the University, the Institute communicates excellence in research to members of the University.
- 2 | By providing substantial support to research of international excellence, the Institute contributes to the improvement of quality of research across the University.
- 3 | By actively supporting the independence of outstanding young researchers, the Institute nurtures leaders of the next generation for the University.



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## Academic Activities

### Lectures and Seminars

- Nagoya University Lecture
- IAR Lectures
- IAR Seminars
- Freshmen Lecture Series: Appreciating the Fun of Research

### Research Advancement Activities

- Academy Office
- IAR Research Projects
- IAR Tenure-track Project
- YLC Project



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## Creating a Productive Research Environment

### Encourage Informal Interdisciplinary Interactions

- Organizing academic lectures and seminars which are accessible to researchers from other fields
- Organizing informal gatherings in which the attendants can freely talk issues they are interested in

### Provide Incentives and Cross-disciplinary Measurement

- The best way to benefit the university is to get the best science done.
- The accumulation of knowledge of best research undertaken in the university should also make funding decisions and other financing choices better informed.



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Thank you for your kind  
attention.



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