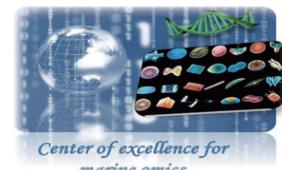
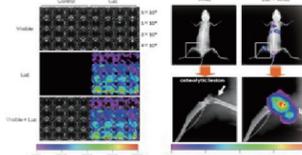
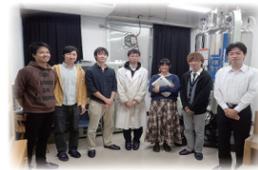


Photograph of a deep-UV LED (central luminescent part) with a wavelength of 265 nm

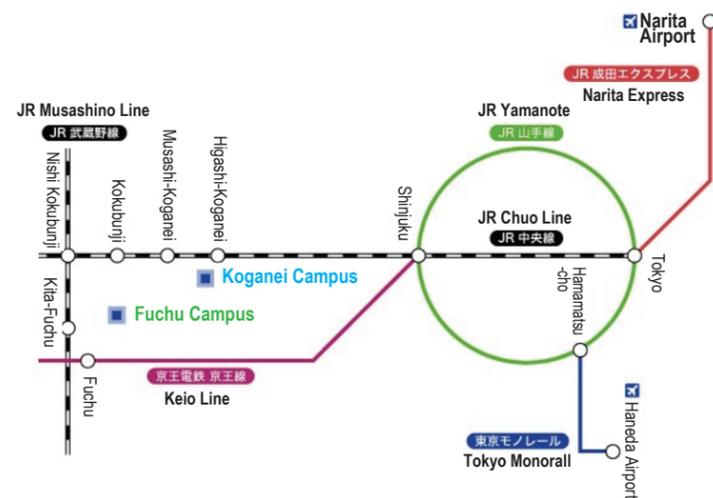


Growth reactors for group-III nitrides in our laboratory



# Challenge to the global problems of "food" and "energy"

## The Global Innovation Research Organization



### -Fuchu Campus

- 3-5-8 Saiwai-cho, Fuchu-shi, Tokyo 183-8509
- By JR Chuo line, Kokubunji Station  
Take the Keio bus (Fuchu Station via Meisei Gakuen, Tera No91) from bus terminal no. 2 boarding area of Kokubunji Station south exit and get off Harumicho bus stop. About 10 minutes bus ride.
- By Keio line, Fuchu Station  
Take the Keio bus (Kokubunji Station south exit via Meisei Gakuen, Tera No91) from bus terminal no. 2 of boarding area of Fuchu Station north exit and get off Harumicho bus stop. About 7 minutes bus ride.
- By JR Musashino line, Kita-Fuchu Station  
Walk about 12 minutes to campus.

### -Koganei Campus

- 2-24-16 Naka-cho, Koganei-shi, Tokyo 184-8588
- Take the JR Chuo Line from Tokyo Station (rapid train) to Higashi-Koganei Station: 40 minutes. Walk about 10 minutes to campus.
- Take the JR Chuo line to Musashi-Koganei Station.  
Walk about 20 minutes to campus.

### <Contact>

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-The Global Innovation Research Organization Support Office

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URL: <https://www.tuat-global.jp/>



# The Global Innovation Research Organization

## Message



President  
Prof. Tadashi  
Matsunaga

Tokyo University of Agriculture and Technology (TUAT) distinctively focuses on education and research in the fields of agriculture and engineering that constitute the core of industry today. Currently, serious problems such as environmental degradation, energy issues, and food supply dilemmas caused by rapid population growth are among the challenges that threaten the very survival of humanity. Resolving these issues and constructing a sustainable society requires efforts from a broad range of perspectives extending beyond the pivotal agriculture and engineering framework.

TUAT newly established the Global Innovation Research (GIR) Organization with the purpose of promoting cooperation between TUAT researchers and international professors to tackle global challenges. We are confident that the initiative will further enhance collaboration between international partners and TUAT.



Head of the GIR  
Prof. Chisato Miyaura

TUAT was selected as one of the twelve national universities rapidly promoting global research in 2014. At the GIR Organization, twelve strategic research teams are formed around the world's leading researchers as core professors for the key areas for advanced collaborative research investigations.

With such professors, the team members consist of TUAT researchers and graduate students in each priority area who are working on their collaborative research projects. By enhancing the further globalization of younger researchers, including graduate students, the research teams will provide these researchers with various opportunities to interact with internationally recognized professors to increase their competitiveness and gain global-innovative human resources.

These approaches will enable us to establish a greater international presence and lead to collaborations with potentially more co-authored papers.

Global Innovation Research Organization Website  
<https://www.tuat-global.jp/> (Japanese)  
<https://www.tuat-global.jp/english/> (English)

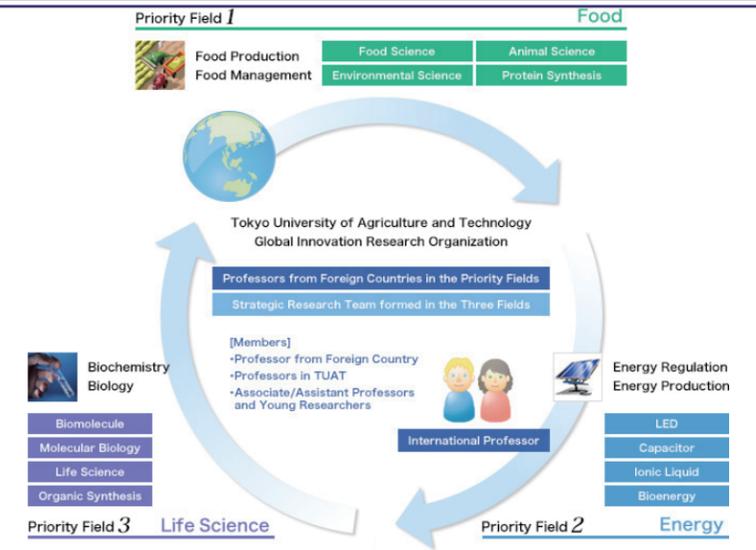
## Approaches

As part of the National Universities' Budget for the FY2014, Tokyo University of Agriculture and Technology received priority allocation for the rapid enhancement of educational and world-class research activities. In exploiting our advantages in the agriculture and engineering fields, and as an initiative to enhance our research capabilities, we established the Global Innovation Research Organization in June 2014 to further our goals as a research university.

We will prioritize research in three key areas: "food," "energy" and "life sciences," which constitute an interdisciplinary area between agriculture and engineering fields. With the aim of producing innovative results for themes with a high social demand inside the key research areas, professors will form a strategic research team and build a system which will allow them to conduct cutting-edge research as a research-only institute.

The world's leading researchers will be employed as core professors for each key area and the team structure will be modified upon performance review. This plan will be in place for the FY2014 to FY2016 period and researchers will be employed for a term of 1 to 3 months in a single-year period.

In addition, by strengthening the capabilities to support outstanding professors, especially among young researchers who actively engage in cutting-edge research, we aim to develop the Global Innovation Human Resources in Science who have a broad vision of both scientific techniques and management skills, among other skills, as well as a global perspective. These human resources will take a central role in bringing research results to practical use and lead a boost in the number of international joint research efforts and internationally co-authored papers.



## Food

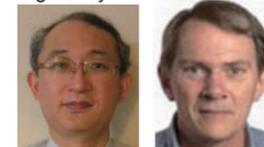
Food is one of the critical challenges that the international community is currently facing. Particularly, food shortages afflict many people living mainly in the Asia-Pacific region. Because these problems relate closely with global environmental concerns, "Food" as a priority theme encompasses both food production and environmental science to solve these issues.

**Tadashi Hirasawa Team**  
 — Strategic research for improving production potential of crop plants based on genome information



Prof. Hirasawa Dr. Rowan F. Sage Dr. Tammy L. Sage Dr. Gillian Turgeon

**Nobuhiro Takahashi Team**  
 — Elucidation of RNA function in animal/plant cells, and development of its regulatory method



Prof. Takahashi Dr. Richard J. Simpson

**Shiro Hatakeyama Team**  
 — Analysis of trans-boundary air pollution in East Asia by use of network observation on isolated islands and mountains



Prof. Hatakeyama Dr. Neng-Huei (George) Lin Dr. Chak K. Chan Dr. Yong Pyo Kim

**Ryo Funada Team**  
 — Analysis of molecular structure of cell wall for advanced utilization of plant biomass

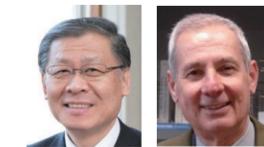


Prof. Funada Dr. Jonh Ralph Dr. Edouard Pesquet

## Energy

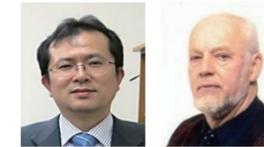
The rising energy consumption on a global scale in recent years is expected to continue, and energy issues should therefore be considered to be a great challenge facing humanity. "Energy" as a priority theme addresses energy problems according to the application of capacitors, LED, and ionic liquids, while adding a new dimension to these research areas.

**Hiroyuki Ohno Team**  
 — Development of novel energy conversion technology with ionic liquids



Prof. Ohno Dr. Bruno Scrosati

**Yoshinao Kumagai Team**  
 — Development of AlGaN-based deep-UV light emitting diodes



Prof. Kumagai Dr. Bo Monemar

**Katsuhiko Naoi Team**  
 — Platform for leading world capacitor science



Prof. Naoi Dr. Patrice Simon Dr. Patrick Rozier Dr. John R. Miller

**Toshihiko Kuwabara Team**  
 — Development of novel and fundamental technology to promote smart green mobility



Prof. Kuwabara Dr. Frédéric Barlat Dr. Roman Henze Dr. Tamim Asfour

## Life science

Life science has a significant impact on our health and well-being and is an important science area that directs us to find a solution for food and energy issues as a fundamental technology. "Life Science" as a priority theme pushes and precedes the edge of technical possibility, mainly in protein synthesis and life science itself.

**Kazuhiro Chiba Team**  
 — Synthesis of bioactive particles toward new drug delivery system



Prof. Chiba Dr. Esko I. Kauppinen Dr. Anh Tuan Phan Dr. Sanjay Mathur

**Masaki Inada Team**  
 — Research approach on Collagen Molecule Complex (CMC) metabolisms for bio-medical application



Assoc. Prof. Inada Dr. Hideaki Nagase Dr. Carlos Lopez-Otin Dr. Florian Grundler

**Tsuyoshi Tanaka Team**  
 — Center of excellence for marine omics



Prof. Tanaka Dr. Chris Bowler Dr. David Kisailus Dr. Chiara Zurzolo

**Koji Sode Team**  
 — Development of innovative biodevices employing autonomous sensing actuator



Prof. Sode Dr. Christofer Robin Lowe Dr. Antonio Ortega