

# Chemistry members

Period of Stay June 26 ~ August 6, 2024

Name of Hosting Faculty Member (Title)	Research Topic & Research Description	Can be changed to online when it is difficult to conduct in person
	Special academic conditions required for research	
<b>Hiroyuki ISOBE</b> (Professor)  <a href="#">Website</a>	Nanocarbon molecular science based on macrocyclic structures. In this UTRIP program, student(s) will be involved in the research topic of the synthetic and physical organic chemistry of nanocarbon molecules. Student(s) will experience the design and synthesis of nanocarbon molecules, which will be characterized by NMR spectroscopy and mass spectrometry. Through these experiments, student(s) will learn the basic knowledge and skills to explore the frontier of nanocarbon molecular science.	NO.
	<ol style="list-style-type: none"> <li>1) <b>Prerequisite knowledge and/or specific skill and its proficiency</b> Basic experimental technique of synthetic organic chemistry and basic knowledge of organic chemistry</li> <li>2) <b>Required major field(s)</b> Organic chemistry and physical chemistry</li> <li>3) <b>Academic background or research project experience to be considered at selection</b> None</li> <li>4) <b>Selection and evaluation criteria, if any:</b> None</li> </ol>	
<b>Taro HITOSUGI</b> (Professor)  <a href="#">Website</a>	Studies on inorganic and organic solid materials. We are interested in both the synthesis and functions.	NO.
	<ol style="list-style-type: none"> <li>1) <b>Prerequisite knowledge and/or specific skill and its proficiency</b> Basic understanding of physics and/or chemistry is required.</li> <li>2) <b>Required major field(s)</b> One of the following fields: physics, chemistry, computer science, mechanical engineering, electrical engineering, chemical engineering, mathematical science etc.</li> <li>3) <b>Academic background or research project experience to be considered at selection</b> Basic understanding of physics and/or chemistry is required.</li> <li>4) <b>Selection and evaluation criteria, if any:</b> None</li> </ol>	
<b>Keisuke GODA</b> (Professor)  <a href="#">Website</a>	At Goda Lab, our primary mission is to develop "serendipity-enabling technologies" that align with Louis Pasteur's famous quote, "Chance (serendipity) favors the prepared mind." Our focus is on developing innovative tools for molecular imaging and spectroscopy by integrating photonics, nanotechnology, microfluidics, and data science. By utilizing these tools, we aim to discover unknown phenomena, elucidate mechanisms, and explore new applications in science, industry, and medicine. We employ theoretical, experimental, and computational techniques to tackle critical problems. Additionally, we are committed to cultivating the next generation of global leaders who will shape the world in the 21st century. We foster an international and interdisciplinary research environment that values flat human relationships, and we actively seek out talented individuals from any university or company, regardless of their field of study.	NO.

	<p>1) <b>Prerequisite knowledge and/or specific skill and its proficiency</b></p> <ol style="list-style-type: none"> <li>1. Applicants must possess foundational knowledge in molecular imaging, spectroscopy, photonics, nanotechnology, microfluidics, and/or data science, as our lab extensively works on integrating these domains to develop innovative tools.</li> <li>2. Demonstrated skills in theoretical, experimental, and computational techniques are highly beneficial.</li> <li>3. Ability to work in an international and interdisciplinary research environment with a cooperative mindset is crucial.</li> <li>4. Applicants should be ready to engage actively in discovering unknown phenomena, elucidating mechanisms, and exploring new applications in science, industry, and medicine.</li> </ol> <p>2) <b>Required major field(s)</b></p> <ol style="list-style-type: none"> <li>1. We encourage applications from candidates majoring in fields related to, but not limited to, physics, chemistry, biology, data science, materials science, electrical engineering, mechanical engineering, chemical engineering, bioengineering, or a closely related field.</li> <li>2. Given the interdisciplinary nature of our work, individuals from various scientific and engineering disciplines who possess a strong interest and background in the areas we focus on are welcome to apply.</li> </ol> <p>3) <b>Academic background or research project experience to be considered at selection</b></p> <ol style="list-style-type: none"> <li>1. Applicants should have a strong academic record with coursework or research experience that aligns with the areas of molecular imaging, spectroscopy, photonics, nanotechnology, microfluidics, and data science.</li> <li>2. Experience in working on projects or research that involves theoretical, experimental, and computational techniques to solve critical problems is highly desirable.</li> <li>3. Participation in projects that demonstrate the ability to discover, elucidate, and explore in science, industry, and medicine is an added advantage.</li> </ol> <p>4) <b>Selection and evaluation criteria, if any:</b></p> <ol style="list-style-type: none"> <li>1. Academic Excellence: Strong GPA and coursework in relevant fields.</li> <li>2. Research Experience: Prior involvement in projects or research in areas like molecular imaging, spectroscopy, photonics, nanotechnology, microfluidics, and data science.</li> <li>3. Technical Skills: Proficiency in theoretical, experimental, and computational techniques related to our lab's focus.</li> <li>4. Interpersonal Skills: Ability to thrive in an international, interdisciplinary research environment with strong communication and collaboration skills.</li> <li>5. Alignment with Lab's Mission: Demonstrated interest and commitment to developing technologies that enable discovery and exploration in science, industry, and medicine.</li> <li>6. Leadership Potential: Evidence of potential to become a future global leader in academia, industry, or entrepreneurship.</li> </ol>	
<p><b>Shu KOBAYASHI</b> <b>(Professor)</b></p> <p><a href="#">Website</a></p>	<p>Organic synthesis based on new design of useful catalysts. The research focuses on synthesis and application of newly designed catalysts to efficient and useful synthetic organic reactions.</p> <p>1) <b>Prerequisite knowledge and/or specific skill and its proficiency</b> Knowledge of organic chemistry and basic experimental technique of synthetic organic chemistry</p> <p>2) <b>Required major field(s)</b> Organic chemistry, analytical chemistry,</p> <p>3) <b>Academic background or research project experience to be considered at selection</b> It is better for the student to have a basic knowledge of organic chemistry.</p> <p>4) <b>Selection and evaluation criteria, if any:</b></p>	<p>NO.</p>