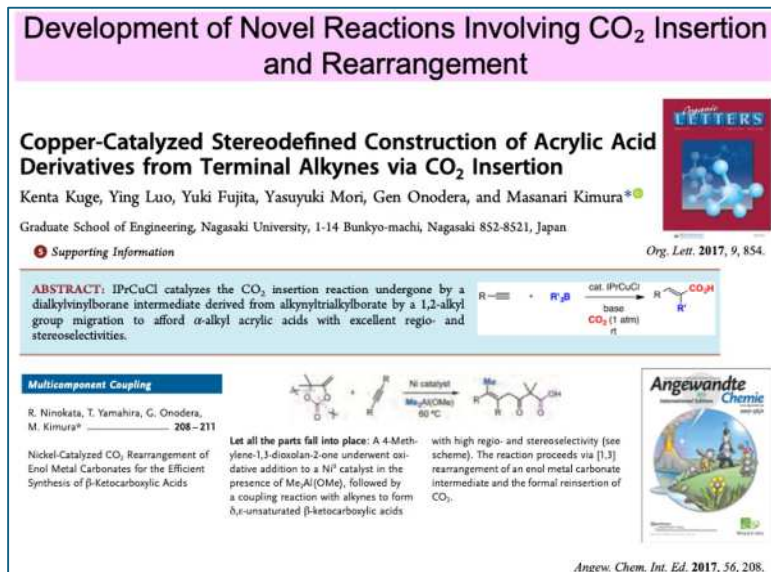


Name	Job Title	Area of Expertise
KIMURA Masanari	Professor	Organic Chemistry, Synthetic Chemistry

1. Main Research Topics

We are pioneering new synthetic chemistry based on organic chemistry, and developing highly efficient synthetic methods for pharmaceuticals and bioactive compounds such as anticancer agents, antibiotics, and antiviral drugs. In addition, we aim to achieve technological innovation from a molecular chemistry perspective to address the urgent global issue of energy. Our research challenges include the development of reactions that utilize carbon dioxide as a carbon resource, the construction of carbon recycling systems for producing petroleum alternatives and fuels, and molecular transformation technologies related to hydrogen generation and utilization.



① Development of Novel Organic Synthetic Reactions

Our research focuses on the development of highly efficient synthetic methodologies utilizing metal catalysis. Key areas include cross-coupling reactions, novel transformations based on C–H activation of alkanes, multicomponent assembly reactions, and environmentally friendly reactions that proceed in water.

② Development of Pharmaceuticals and Bioactive Compounds

Functional and valuable compounds, including anti-dementia drugs, anticancer agents, non-steroidal anti-inflammatory drugs (NSAIDs), boron-containing compounds, agrochemicals, and functional luminescent materials, are synthesized using original reactions developed in our laboratory.

③ Design and Synthesis of Energy-Related Materials

Our research focuses on carbon fixation using carbon dioxide as a carbon resource, the synthesis of biomass-derived plastics, and catalytic reactions for hydrogen generation and utilization.

2. Keywords

Organic Synthesis, Catalytic Reactions, Carbon Dioxide, Organoboron Compounds, Pharmaceuticals and Drug, Hydrogen Generation & Storage

3. Remarks and Websites

We are focusing on green chemistry related to carbon neutrality and carbon recycling technologies. For example, we are involved in the development of resources utilizing small molecules, such as carbon dioxide and carbon monoxide. We are also developing catalytic reactions for the generation of hydrogen molecules. In addition, we are advancing technologies in synthetic and catalytic chemistry to support the synthesis of pharmaceuticals, as well as the creation of bioactive compounds, including functional materials containing boron atoms and agrochemicals. We have a proven track record of collaborative research with chemical and materials manufacturers, pharmaceutical companies, and petroleum and energy-related industries.

researchmap : <https://researchmap.jp/read0185029/>

Laboratory: <http://www.cms.nagasaki-u.ac.jp/lab/yuuki/>