

# 第475回触媒科学研究所コロキウム

## Catalyst: An Essential Solution to the Sustainable Society

Do Heui Kim Professor

(Seoul National University)



2024年11月15日(金) 16:00–17:00

創成科学研究棟 Conference room at 5th floor, Institute for Catalysis

<http://www.cat.hokudai.ac.jp/access.html>

A sustainable society is one that meets the needs of the present without compromising the ability of future generations to meet their own needs. Since a catalyst is something that accelerates a reaction by lowering the activation energy without being consumed in the process, it acts as a driving force that accelerates positive changes toward sustainability. The catalyst plays a crucial role in developing novel renewable energy technologies, such as hydrogen and biomass, as well as enhancing the efficiency of current technologies, resulting in reduced carbon dioxide emissions. Additionally, catalyst technology helps remove various pollutants generated by human activities, significantly contributing to the creation of a sustainable society.

In the presentation, I will demonstrate how catalyst technology can contribute to achieving a cleaner environment with lower carbon dioxide emissions, which is essential for building a sustainable society. More specifically, I will showcase a few examples of novel nitrogen oxides (NO<sub>x</sub>) removal catalysts with superior activity and improved sulfur resistance that have been successfully applied to the industry.

Prof. Do Heui Kim is currently a full professor in Department of Chemical and Biological Engineering at Seoul National University. After obtaining PhD in Chemical Engineering at KAIST in 2000, he worked as a senior research scientist at Pacific Northwest National Laboratory (PNNL) from 2002 to 2011, when he took the current position. His work has focused on the application of heterogeneous catalyst to solve the energy and environmental issues, such as catalytic activation of light alkane and biomass to produce value-added products, and catalytic elimination of vehicle exhaust gases (NO<sub>x</sub>, CO and hydrocarbon). He has published about 250 scientific papers. He has received various awards such as Young Catalyst Researcher Award (Korea Institute of Chemical Engineers) in 2016, ShinYang Award for Excellent Young Faculty (Seoul National University) in 2017, Prime Minister's Commendation (Korea Government) in 2019, and Catalyst Development Excellence Award (Asia-Pacific Societies of Catalysis) in 2023

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