

演題: “Strategic Design of Framework-based Materials for Chemical Fixation of Carbon Dioxide to Value-Added Chemicals”

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日時: **2024年6月24日(月)15:00～16:30**

場所: 北海道大学理学部 5号館 206室

要旨: The escalating carbon dioxide (CO₂) content in the atmosphere has led to pervasive consequences such as global warming, variations in climate, and erratic weather conditions. Thus, it is imperative to attenuate atmospheric carbon dioxide through selective capture and subsequent storage, utilization, to address these detrimental environmental issues. Consequently, the carbon capture and utilization as a C1 feedstock to generate value-added chemicals and fuels offer dual advantages of mitigating the rising carbon dioxide concentration and sustainable generation of high-value compounds. Especially selective carbon capture and utilization (CCU) from direct air has attracted tremendous attention due to its practical applications. In this direction, our research group is working on rational design of functional framework materials viz Metal-Organic Frameworks (MOFs) and Covalent-Organic Frameworks (COFs) incorporated with a high density of CO₂-philic and catalytic sites suitable for simultaneous capture and conversion of carbon dioxide into value-added chemicals at mild conditions. The highlights of the ongoing research work will be presented.

共催: 北海道大学大学院総合化学院, フロンティア化学教育研究センター, 北海道大学物質科学フロンティアを開拓する Ambitious リーダー育成プログラム, 北海道大学スマート物質科学を拓くアンビシャスプログラム

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