

演題：**Beyond Reagents – Exploring the Impact
of Reaction Vials and Milling Media
in Mechanochemical Synthesis**

講師：**Professor James Mack**
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日時：2025 年 11 月 11 日（火）16:30~18:00

場所：ICReDD 棟 4 階 ICReDD Hall A

要旨：

Mechanochemistry is emerging at the forefront of chemical innovation, rapidly transitioning from a specialized technique to a key strategy in synthetic chemistry. The rising volume of research underscores its broad appeal, driven by aspirations for safer, more sustainable, and streamlined synthetic methods. Despite these advances, a comprehensive mechanistic understanding—particularly of how non-reagent variables shape outcomes—remains underdeveloped.

In order to further understand the core principles of mechanochemical reactions, we need to better understand how the role the physical parameters, such as vial material and milling media, play in shaping chemical reactivity and selectivity. Our research introduces new methodologies that enable precise control and monitoring of mechanochemical reactions under a diverse array of conditions.

Equally important is understanding how these physical variables contribute to the mechanistic differences between mechanochemical and traditional solution-based systems. By unlocking the energetic and structural factors unique to mechanochemical environments—including how reaction vessels and milling agents mediate transformations—we aim to provide a deeper understanding of when and why these reactions diverge from classical paradigms.

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