

## Real-time monitoring of crystal growth reactions in a micro-volume system

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Different forms of chiral crystals generally possess different chemical and physical properties. Typically, they exhibit different responses on circular dichroism or optical chirality. Therefore, the deracemization, the process of separating a racemic mixture composed of chiral crystals, has been drawing attention. Various studies related to the chiral structure and the deracemization process have been conducted in a bulk environment, whereas the mechanism of deracemization has not been accurately identified. Notably, the mass and/or heat transfer can be relatively well controlled in a micro-volume system. In this work, we design the micro-volume system, in which a single crystal of sodium chlorate is formed in a 1  $\mu\text{L}$  aqueous micro-droplet environment. This system enables the real-time observations and quantitative analyses of crystal growth and the deracemization process depending on temperature swing and laser handedness.