

Fabrication of line structured crystals by controlled evaporation crystallization in geometrically-confined forms

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The evaporation crystallization of solutions could produce aligned crystals. To enhance electroconductivity of charging devices, it was important to make uniform crystals via a patterned mold for a substrate. If this evaporation crystallization methods are controlled through evaporation parameters, we might be able to engineer crystal structures. In this study, we demonstrated an instant evaporation crystallization method for the fabrication of repeated line structured crystals of atorvastatin, which enabled geometrically-confined crystal growth in methanol between two glasses. The conformation of uniform line structure crystal is based on where the solution crystallizes with the immediate evaporation of the solvent through a moving glass at a constant rate. Thickness, width and gap of line structure crystals depends on rate of evaporation, gap size between two glasses. Controlled evaporation crystallization could be used as a novel strategy for the production of uniform controlled crystals.