

The Dynamic Side of Crystals: How Structure Influences Function in The Solid-State

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Crystalline materials that exhibit unique properties are finding use in many applications such as sensing, sorption, pharmaceuticals, and optoelectronic. For molecular-based crystalline materials, the three-dimensional structure of the solid and the intermolecular interactions sustaining it directly influence the properties of the solid. Here, we will discuss our efforts to design, synthesize, and characterize organic solids that undergo dynamic motion in response to temperature change. We will also discuss the use of mixed cocrystals (i.e. cocrystal solid solutions) as a strategy for fine-tuning dynamic behaviors in organic solids.