

# Dynamic Organic Crystals

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The anticipated shift in focal point of interest of solid-state chemists, crystal engineers and crystallographers from structure to properties to function of organic solids parallels the need to apply our accumulated understanding of the intricacies of crystal structure to explaining the related properties, with the ultimate goal of harnessing that knowledge in applications that require soft, light-weight, and/or biocompatible organic solids. In these developments, the adaptive molecular single crystals [1-5] warrant a particular attention as a new class of materials for light, flexible, and environmentally benign devices, primarily memories, capacitors, sensors, and actuators. United under the umbrella term “crystal adaptronics”, the recent research efforts aim to realistically assess the appositeness of dynamic crystals for applications that require fast, reversible and continuous operation over prolonged periods of time. With the aim to highlight the most recent developments in the research of adaptive molecular crystals, this lecture will discuss their assets and pitfalls.

**Keywords:** Organic Crystals; Dynamics; Mechanical Properties; Optical Properties; Smart Materials

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