

Microsymposium

MS59.O06

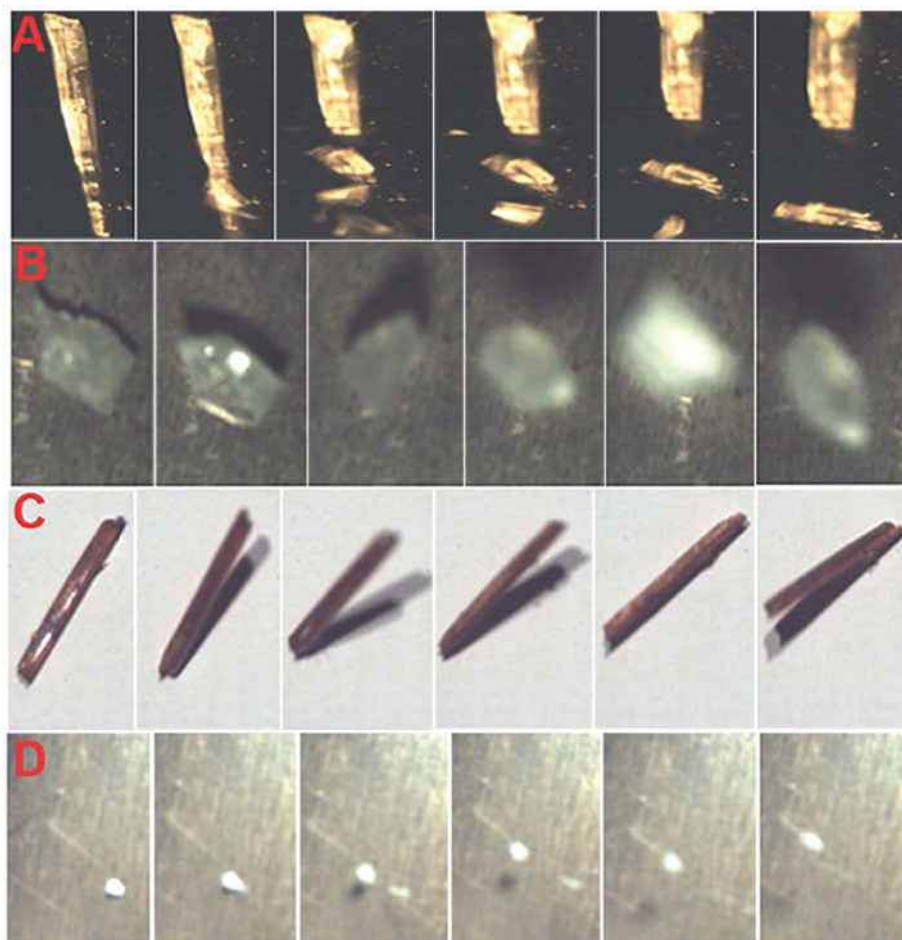
Mechanical Effects in Molecular Crystals – A Revival

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The classical perception of single crystals of molecular materials as rigid and brittle entities has downsized the research interest in mechanical effects that had been initiated and was active back in the 1980s. More recently, the modern analytical techniques for mechanical, electron-microscopic, structural, spectroscopic and kinematic characterization have contributed to accumulate compelling evidence that under certain circumstances, even some seemingly rigid single crystals can deform, bend, twist, hop, wiggle or perform other "acrobatics" that are atypical for non-soft matter. These examples contribute to a paradigm shift in our understanding of the elasticity of molecular crystals and also provide direct mechanistic insight into the structural perturbations at the limits of the susceptibility of ordered matter to internal and external mechanical force. As the relevance of motility and reshaping of molecular crystals is being recognized by the crystal research community as a demonstration of a very basic concept—conversion of thermal or light energy into work—a new and exciting crystal chemistry around mechanically responsive single crystals rapidly unfolds.

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Keywords: Mechanical effects, Phase transitions, Photochemistry