In this volume, contributions covering the theoretical and practical aspects of multicomponent crystals provide a timely and contemporary overview of the state-of-the art of this vital aspect of crystal engineering/materials science. With a solid foundation in fundamentals, multi-component crystals can be formed, for example, to enhance pharmaceutical properties of drugs, for the specific control of optical responses to external stimuli and to assemble molecules to allow chemical reactions that are generally intractable following conventional methods.