

Polymorphism and Function of Organic Materials

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Since the middle of last century, it has been widely recognized that many organic compounds can be obtained in more than one crystal form, a property known as polymorphism. It also became clear that the adopted crystal structure often exerts a significant effect in the solid-state properties of the compound, so that each polymorph corresponds, in fact, to a different material. Controlling polymorphism is, therefore, essential to ensure the manufacture of products with highly reproducible properties. It also provides a means to tune the properties of a product in view of an application, without changing the molecule involved. Problems and benefits related with polymorphism in molecular organic solids will be illustrated through a few examples covering dyes, active pharmaceutical ingredients, and non-linear optical materials.

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His research interests are mainly focused on the energetics of molecules (e.g. fullerenes, PAHs, ionic liquids), crystals (nucleation, polymorphism, crystal engineering), and, very recently, also of cell metabolism and adaptation. He currently serves as a member of the "RSC Advances" Editorial Board and of "The Journal of Chemical Thermodynamics" Advisory Board.