

MS34 Crystallization Techniques and chemical reactions driven by solid state interactions

MS34-04

Sublimation of multi-component crystals

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Abstract

Sublimation is a powerful but unexplored technique for crystallisation of molecular crystals. [1] We have recently begun exploring sublimation to produce crystals of organic co-crystals. [2] We have investigated competition between hydrogen and halogen bonding during sublimation [3], and have assessed the general utility of sublimation to produce multi-component crystals. [4]

Unexpectedly, we have found that organic salts can be crystallised by sublimation. [5] It is clear from our experiments that in some cases proton transfer takes place after the neutral molecules enter the gas phase. Our attempts to understand this process will be described.

We have also shown that crystals of hydrates can be produced via sublimation, and that changing the sublimation conditions can affect the nature of the products obtained. Control of morphology and polymorph through the inclusion of additives during sublimation will also be discussed. Finally, we compare our results using sublimation to those obtained using mechanochemistry.

References

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