



**Project 5: Crystal Engineering of Sulphones, Sulphoxide, Sulphonamide and Related Compounds**  
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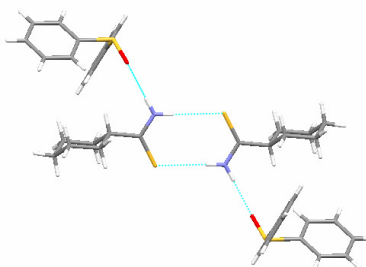
**Title: Crystal Engineering of Sulphones, Sulphoxide, Sulphonamide and Related Compounds**

This project explores co-crystallisation using organosulfur compounds as co-formers.

**Methodology:** A fundamental study into the formation of co-crystals involving organosulfur and organophosphorus compounds, with a wide variety of other functional groups, e.g. amide, sulfonamides, thioamides and thiourea, and related compounds.

**Results & Discussion:**

Initial work has involved synthesising co-crystals with sulfur containing organic materials as co-formers, in combination with thioamides.<sup>1</sup> Full structural characterisation has been undertaken, along with thermal analysis and stability investigations.



**Future Work:**

Extension to pharmaceutical materials since many APIs contain the key S-O bond as a molecular feature. Impact of chirality will also be explored by examining racemic and non-racemic compounds, as well as looking at other (non-sulfur) based systems of interest to the pharmaceutical community.

**Reference:**

1. Eccles, K. S.; Elcoate, C. J.; Stokes, S. P.; Maguire, A. R.; Lawrence, S., E., *Sulfoxides: Potent Co-Crystal Formers*. *Crystal Growth and Design*, accepted.