

Supporting information

The Glycine-Stimulated Nucleation and Solution-Mediated Polymorphic Transformation of L-Glutamic Acid

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1. Experimental Method

The effect of glycine on crystallisation of L-glutamic acid was investigated at 35°C. Supersaturated solutions of L-glutamic acid ($\sigma = 0.5$) were prepared by dissolution of 11.43 g LGA in 500 mL of high-purity deionised water. The mass of LGA to be used was determined using the solubility curves by Kitamura.¹ For solutions doped with 1250 and 2500 ppm of glycine, 7.29×10^{-3} g and 14.58×10^{-3} g of the additive were used. The dissolution process was enhanced by agitation with a magnetic stirrer bar and heating the solution at 60°C for 1.5 hours using a hot plate. The vessel was sealed to prevent solvent evaporation. When the dissolution process was complete, the clear solution was filtered using a pre-heated 0.2 μm cellulose membrane vacuum filter. The solution was then transferred into a pre-heated batch-

crystalliser. Solution was then cooled down to 35 C. Once the crystallisation temperature was reached, the agitation process and data recording were simultaneously started.

Prior to each experiment, the crystalliser and the circulation loop were thoroughly rinsed with deionised water to remove possible contaminants, such as dust or solid residues remaining from the previous runs.

2. Nucleation and Polymorphic Transformation Measurements Data for the Solution Doped with 1250 ppm of Glycine

Data from one of the laser-light scattering and concentration evolution monitoring experiments for the solution of L-glutamic acid doped with 1250 ppm of glycine is shown in Figures S1 and S2, respectively.

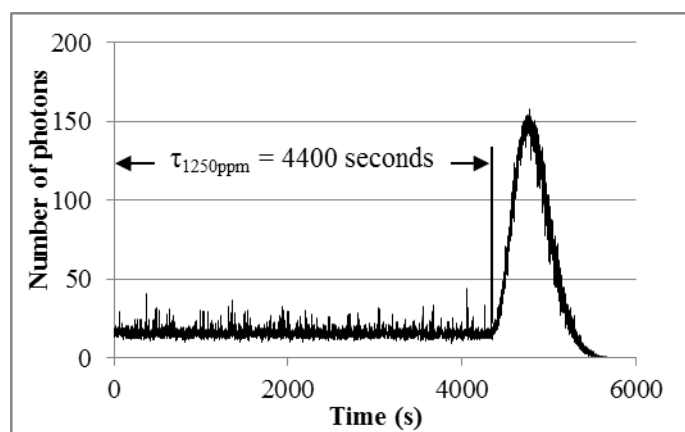


Figure S1. Single-photon laser light scattering data on the induction time of LGA obtained in one of the nucleation experiments: $\tau_{1250ppm}$ is the induction time for crystallisation with 1250 ppm of GLY as an additive.

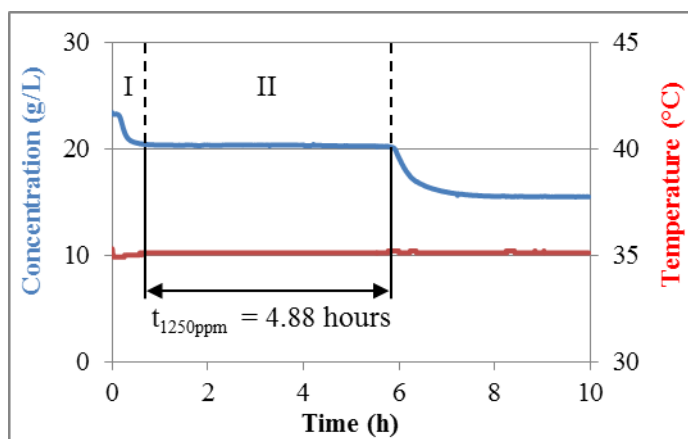


Figure S2. Concentration evolution profile obtained during monitoring of the solution-mediated polymorphic interconversion of LGA with 1250 ppm of GLY as an additive.

References for supporting information:

- [1] M. Kitamura, *J. Cryst. Growth* **1989**, *96*, 541-546.