

Electronic Supplementary Information(ESI)

Investigating the Dissolution of the Metastable Triclinic Polymorph of Carbamazepine using *in situ* Microscopy

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Shown below in Fig. S1 to S3 is the sublimation of FI at 165 °C. The sublimation rate is in addition to examples showing the dissolution of FI in acetonitrile and methanol (20 °C, $\sigma_u = 0.18$), also with dissolution rates measured.

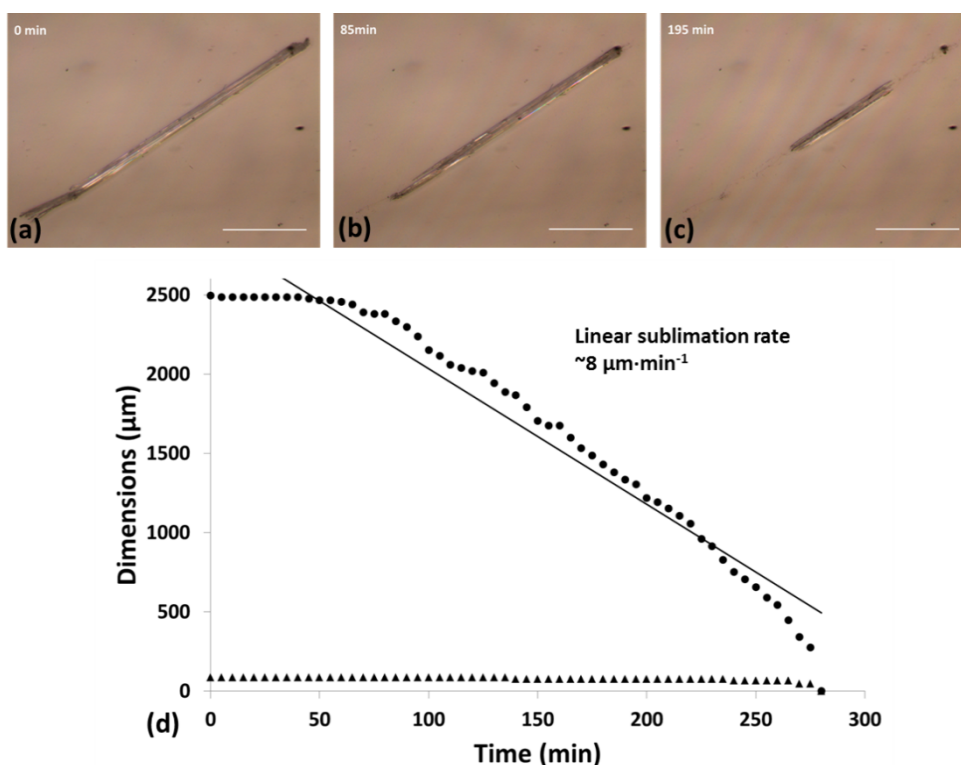


Fig. S1 *In situ* microscopy for the sublimation of FI. (a)-(c) Time lapsed images under the hot stage microscope showing the FI crystal subliming at 165 °C. Inset: time of image and scale bar of 500 µm. (d) Sublimation measurements of the width ▲ and length ● of the subliming FI crystal from over time at 165 °C.

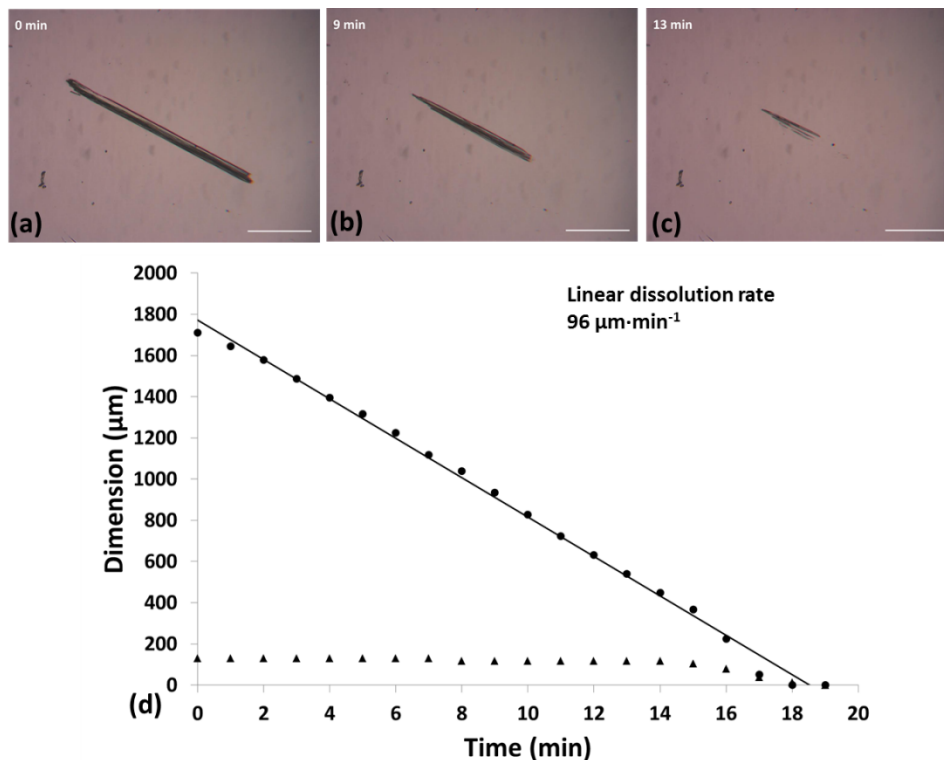


Fig. S2. *In situ* microscopy for the dissolution of FI in **acetonitrile**. (a)-(c) Time lapsed images showing the dissolution of FI in acetonitrile at 20 °C with $\sigma_u = 0.18$ (solution concentration 0.0512 g CBZ / g MeCN). Inset: time of image and scale bar of 500 μm . (d) dissolution measurement of the width \blacktriangle and length \bullet of the dissolving FI crystal in acetonitrile over time. A reduced number of data points were collected due to the rate at which the dissolution proceeds.

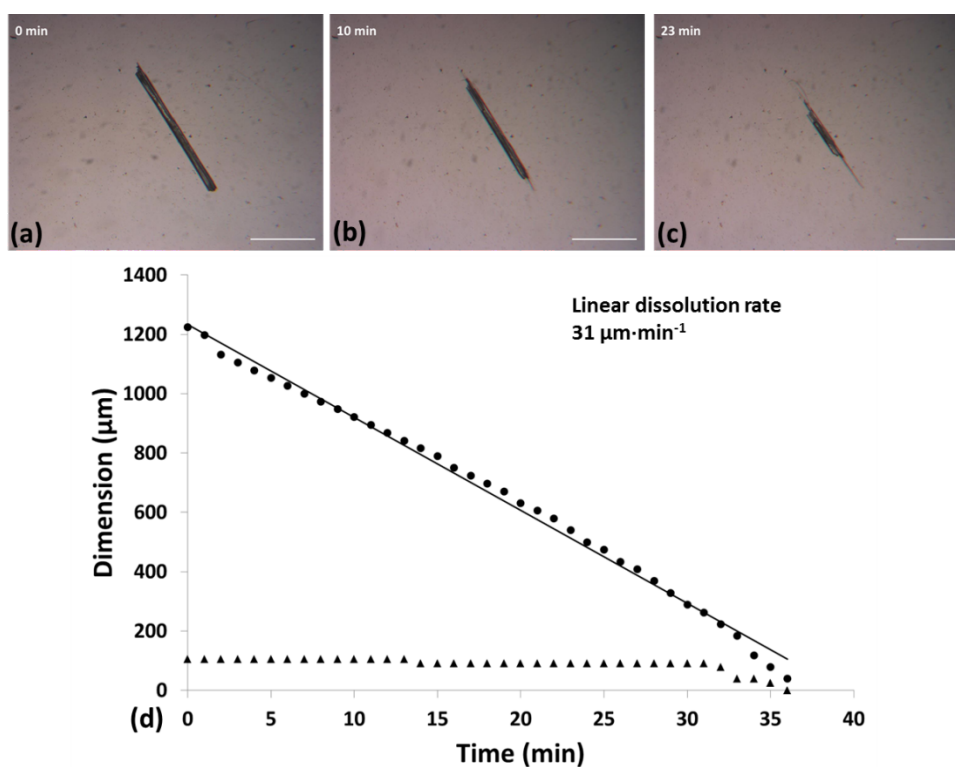


Fig. S2. *In situ* microscopy for the dissolution of FI in **methanol**. (a)-(c) Time lapsed images showing the dissolution of FI in methanol at 20 °C with $\sigma_u = 0.18$ (solution concentration 0.0964 g CBZ / g MeOH). Inset in each image: time of image and scale bar of 500 μm . (d) dissolution measurement of the width \blacktriangle and length \bullet of the dissolving FI crystal in methanol over time.

The following videos files are also available as part of the ESI:

- Sublimation of FI at 165 °C – Fig. S1
- Sublimation of FI at 145 °C – Fig. 3e-h
- Dissolution of FI in ethanol at 20°C with $\sigma_u = 0.18$ – Fig. 3a-d
- Dissolution of FI in acetonitrile at 20°C with $\sigma_u = 0.18$ – Fig. S2
- Dissolution of FI in methanol at 20°C with $\sigma_u = 0.18$ – Fig. S3
- Dissolution of FI in ethanol at 20°C with $\sigma_u = 0.045$ – Fig.5a-c
- Dissolution of FI in ethanol at 20°C with $\sigma_u = 0.045$ – Fig.5d-f
- Dissolution of FI in ethanol at 30°C with $\sigma_u = 0.023$ – Fig.5g-i