

Supplemental movies for solution film flow of ascorbic acid and its crystal growth

"Dynamical properties in uniform and periodic growth modes of ascorbic acid crystal domain from thin solution film"
by Yoshihiro Yamazaki, Mitsunobu Kikuchi, Akihiko Toda, Jun-ichi Wakita, Mitsugu Matsushita
in J. Phys. Soc. Jpn. 83 (2014) 064002 (9 pages)

[Y14]

Domain front motion

Fig. 3: Uniform growth ($H = 50\%$, $\rho = 0.5 \text{ mg/cm}^2$, $T = 27^\circ\text{C}$)

Fig. 4: Periodic growth ($H = 65\%$, $\rho = 0.5 \text{ mg/cm}^2$, $T = 27^\circ\text{C}$)

Fig. 5: Branching growth ($H = 75\%$, $\rho = 0.5 \text{ mg/cm}^2$, $T = 27^\circ\text{C}$)

Fig. 6: Periodic growth ($H = 65\%$, $\rho = 0.2 \text{ mg/cm}^2$, $T = 25^\circ\text{C}$)

Fig. 7: Dense branching morphology (DBM) formation ($H = 35\%$, ρ is less than 0.1 mg/cm^2 , $T = 27^\circ\text{C}$)

Bead and domain front motions

Fig. 10: Uniform growth ($H = 30\%$, $\rho = 0.5 \text{ mg/cm}^2$, $T = 25^\circ\text{C}$)

Fig. 11: Periodic growth ($H = 65\%$, $\rho = 0.5 \text{ mg/cm}^2$, $T = 25^\circ\text{C}$)

Threshold-sensitivity

Fig. 12: Bead motion in the uniform growth ($H = 50\%$, $\rho = 0.5 \text{ mg/cm}^2$, $T = 25^\circ\text{C}$)

Fig. 13: Bead motion in the periodic growth ($H = 65\%$, $\rho = 0.5 \text{ mg/cm}^2$, $T = 25^\circ\text{C}$)

Fig. 16: Collision of two domains ($H = 50\%$, $\rho = 0.5 \text{ mg/cm}^2$, $T = 27^\circ\text{C}$)

Flow of the residual solution

Figs. 24, 25: ($H = 75\%$, $\rho = 0.5 \text{ mg/cm}^2$, $T = 27^\circ\text{C}$)
