Supporting Information for "Metal-Assisted and Microwave-Accelerated Evaporative Crystallization: Application to L-Alanine" by Alabanza and Aslan, Morgan State University, Department of Chemistry, 1700 East Cold Spring Lane, Baltimore, MD, 21251, USA.

Materials

Silver nitrate was purchased from Spectrum Chemical MFG Corp. Sodium hydroxide, ammonium hydroxide, D-glucose, and L-Alanine were purchased from Sigma-Aldrich. All chemicals were used as received.

Methods

Preparation of Silver Island Films. Silver island films were deposited onto glass slides (Corning) as using the procedures described in publication from our laboratory. $AgNO_3$ was precipitated by the addition of 5% NaOH, then quickly redissolved by the addition of NH_4OH. The solution was then cooled to 5°C and blank glass slides were immersed in the solution for two minutes. D-glucose was added and the slides were removed once they were coated with a green color, after 5-7 minutes.

Preparation of L-Alanine solution. A 2.70 M solution of L-Alanine was prepared by dissolving appropriate amounts of L-Alanine in double-distilled water (Millipore), then heated to 60°C for up to 15 minutes, or until the solution appeared colorless and transparent. The pH of the prepared solution was slightly acidic at 5.3 (isoelectric point = 6) and was used in all experiments without changing the pH. The solution was stored in a 20 mL glass vial (Corning) at room temperature in between uses, and was heated to 60°C for 10 minutes before each use.

Crystallization of L-Alanine. L-Alanine was deposited in 20 □L drops onto blank glass slides (Corning) and SIFs, and was observed for crystallization at room temperature and MA-MAEC. Room temperature crystallization was carried out on an open laboratory bench without interference. The MAEC technique was performed in a conventional microwave oven (Frigidaire, 900 W) at microwave power levels 1, 5, and 10.

Timed images of growing crystals were recorded with a Swift Digital M10L Monocular Microscope (Swift). The Raman spectra of L-Alanine crystals were observed using a Raman spectrometer system (*i*-Raman from BW Tek, Inc. DE**)**.

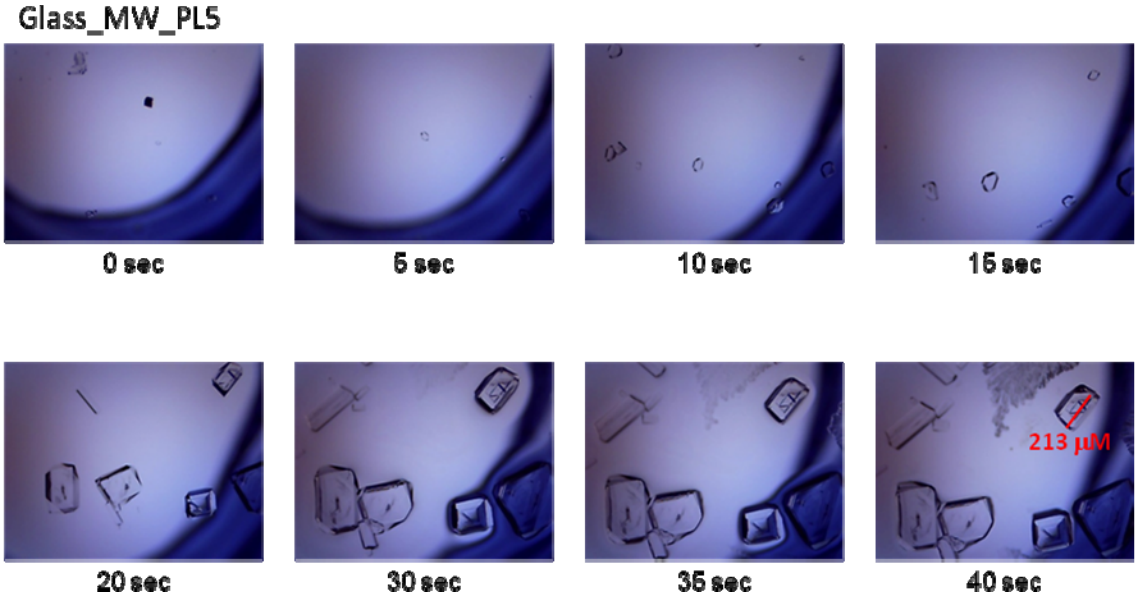

Figure S1. Time progression of the growth of L-alanine crystals on blank glass slides using MAEC technique at microwave power level 5. Actual length of the crystals is x4 of the lengths shown here.

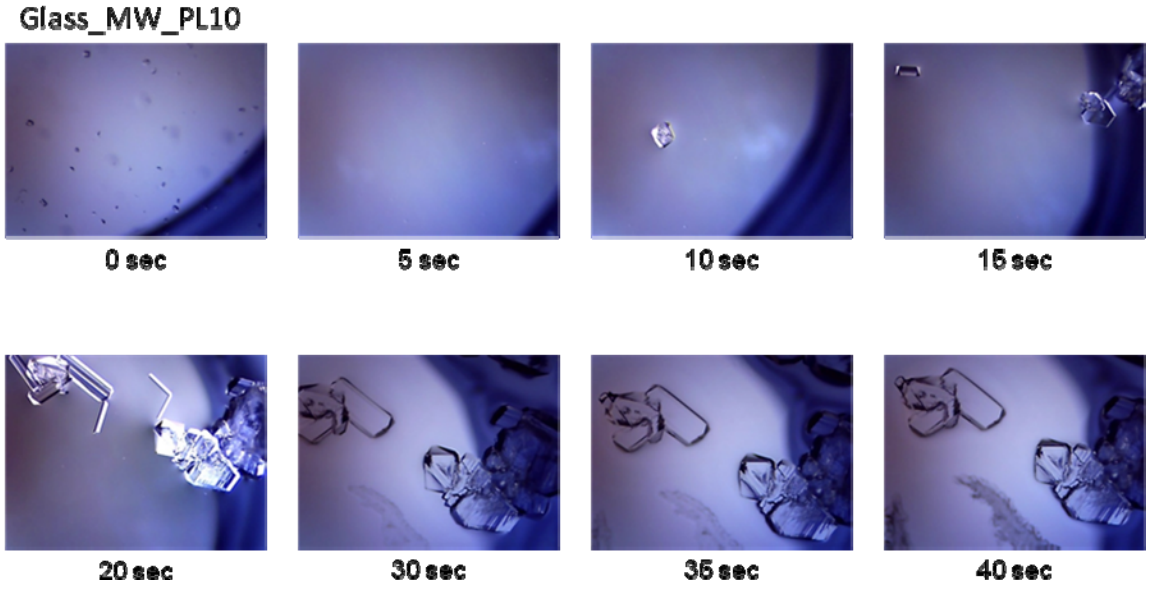

Figure S2. Time progression of the growth of L-alanine crystals on blank glass slides using MAEC technique at microwave power level 10. Actual length of the crystals is x4 of the lengths shown here.

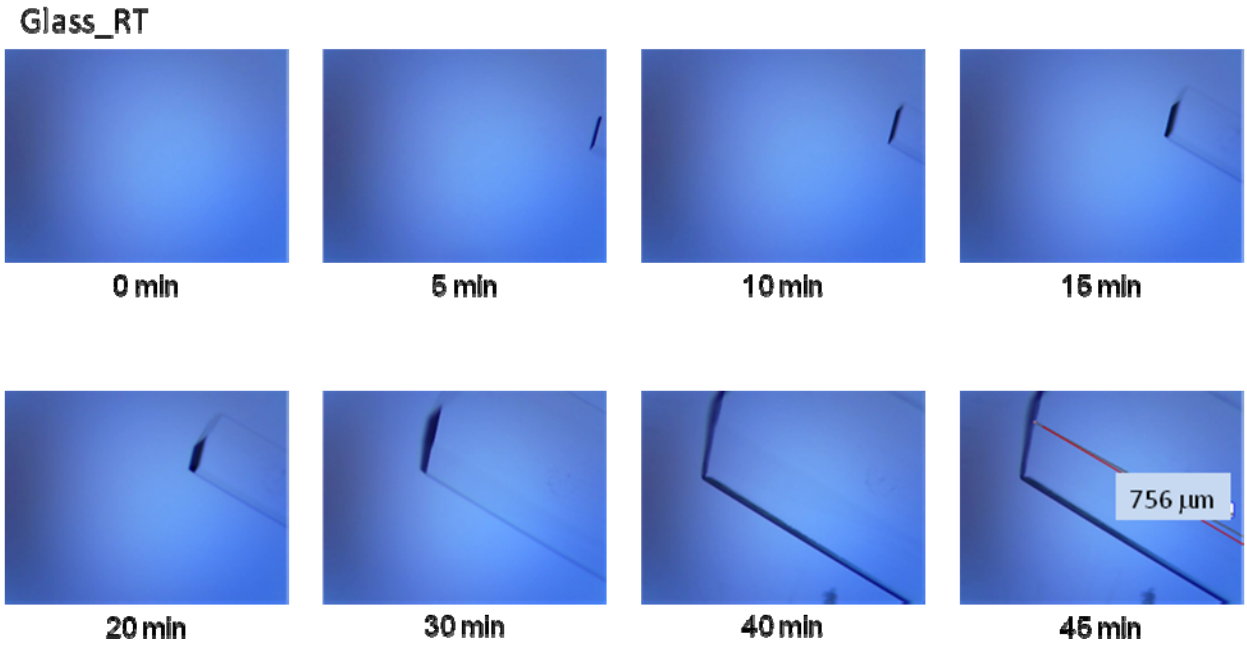

Figure S3. Time progression of the growth of L-alanine crystals on blank glass slides at room temperature. Actual length of the crystals is x4 of the lengths shown here.

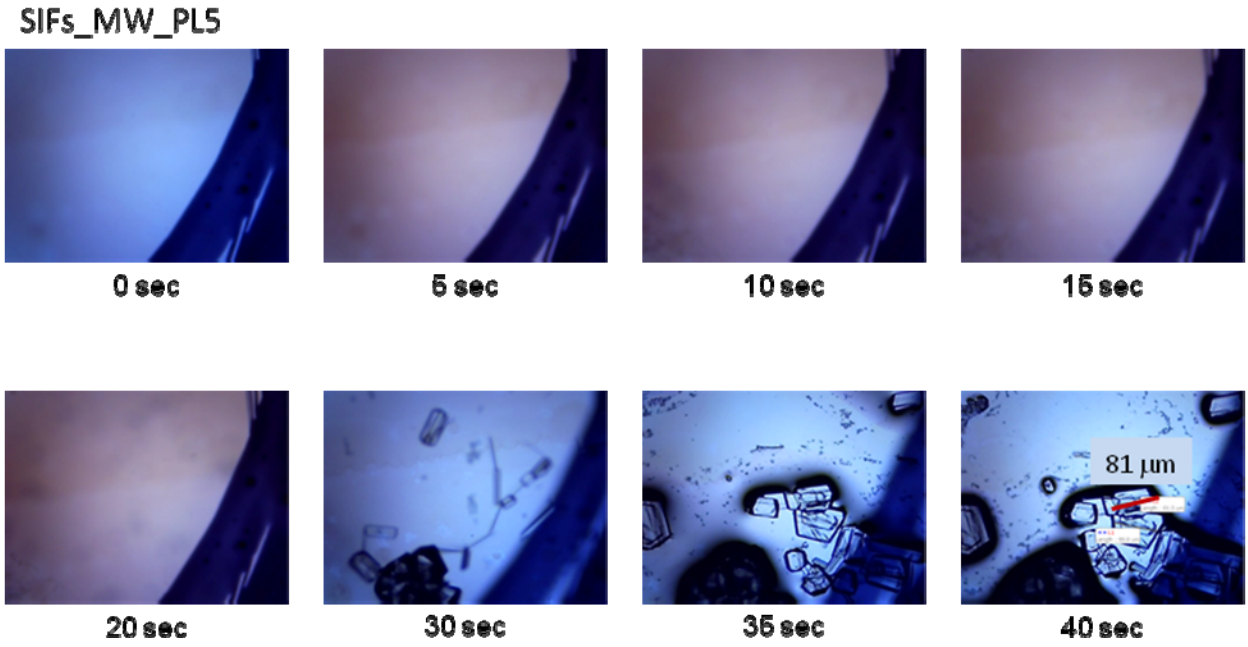

Figure S4. Time progression of the growth of L-alanine crystals on SIFs using MA-MAEC technique at microwave power level 5. Actual length of the crystals is x4 of the lengths shown here.

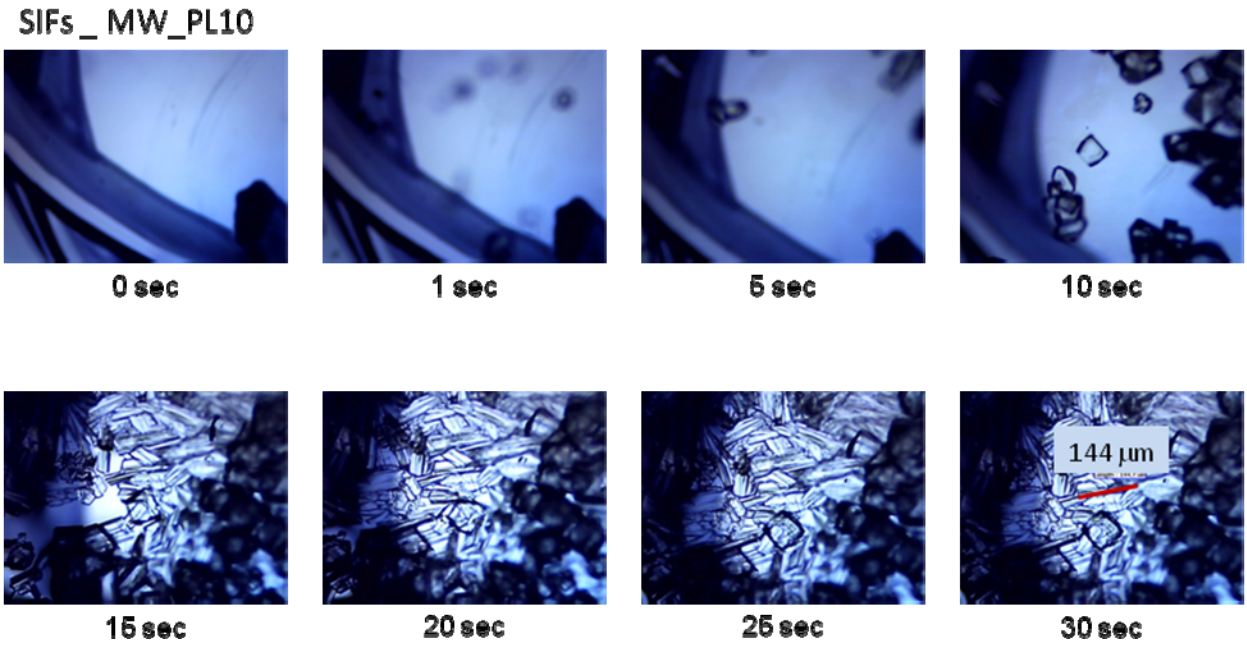

Figure S6. Time progression of the growth of L-alanine crystals on SIFs using MA-MAEC technique at microwave power level 10. Actual length of the crystals is x4 of the lengths shown here.

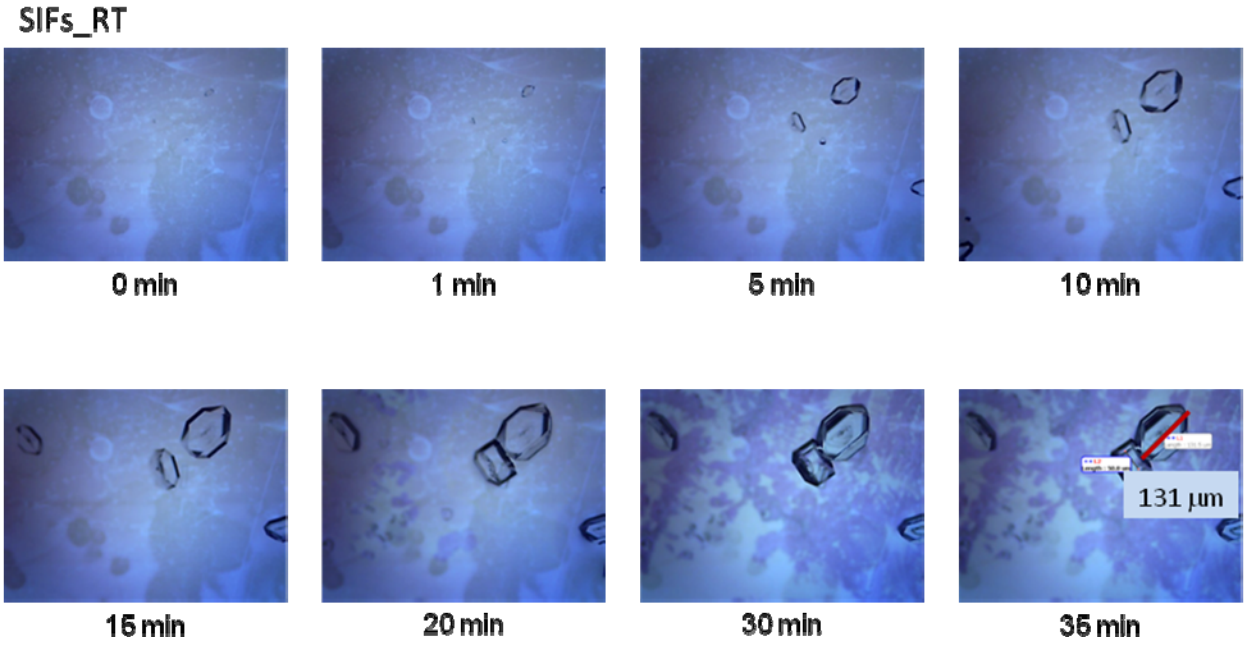

Figure S7. Time progression of the growth of L-alanine crystals on SIFs at room temperature. Actual length of the crystals is x4 of the lengths shown here.

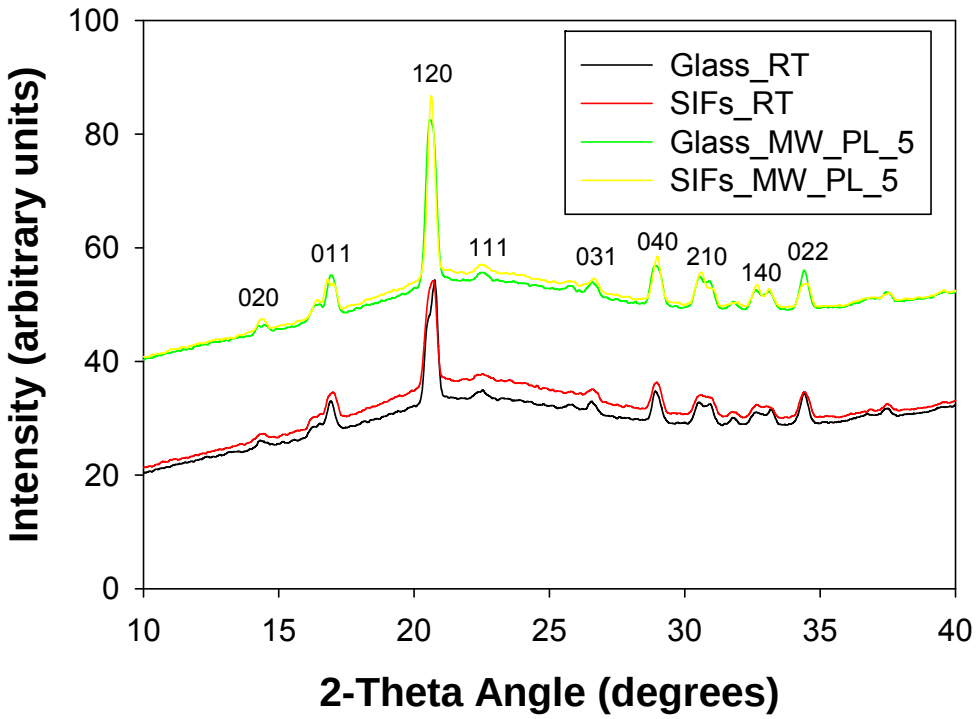

Figure S8. Powder X-Ray diffraction patter of L-alanine crystals grown in this study.