

Abstract Submitted
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Fabrication of Micropatterns using Salt Crystals from Solvent Evaporation¹ DONG-EUN LEE, SEUNG JAE GO, DONG HYUN LEE, Dankook University — Herein, we investigated the crystallization behaviors of sodium carbonate (Na_2CO_3) from highly diluted aqueous solutions. Aqueous Na_2CO_3 solutions which were applied on substrate surfaces by either dropping or draining exhibited a variety of well-defined crystal structures over large areas during water evaporation. It was also found that both sizes and shapes of salt crystals could be effectively controlled by the experimental conditions such as their concentration, evaporation rate, temperature and humidity. Furthermore, it was observed that the salt crystals could be oriented to specific direction as the evaporation of water occurred on the tilted substrates. The crystals of Na_2CO_3 were then employed as the master pattern to fabricate the soft mold of poly(dimethyl siloxane) (PDMS). Then silver (Ag) inks were filled into the pores of PDMS molds and transferred to various substrates by imprinting techniques to produce electrically conductive electrodes for potential electric devices.

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