

The background of the entire page is a scanning electron micrograph (SEM) showing a highly porous, interconnected network of silica gel. Overlaid on the left side of this background is a vertical column of five SEM images showing different calcium carbonate crystal morphologies. From top to bottom: 1) A single, well-defined cube. 2) A cube with a smaller cube attached to one of its faces. 3) A cluster of several small cubes. 4) A large, spherical aggregate composed of many small, flat, plate-like crystals. 5) A spherical aggregate composed of many small, rounded spherulites.

ADVANCED FUNCTIONAL MATERIALS

HYDROGELS

As reported by Lara A. Estroff and co-workers on page 2891, the porous networks formed by hydrogel matrices (freeze-dried silica gel in the background) provide a versatile medium for crystal growth of a wide range of calcium carbonate structures. Shown from top to bottom are single-crystal equilibrium morphologies, non-equilibrium “hopper crystals”, polycrystalline aggregates, and spherulites. In addition, the crystalline products can incorporate the hydrogel matrix forming crystalline composites.