

The background image is a high-magnification scanning electron micrograph (SEM) showing a porous, interconnected network of carbon nanostructures. The structures appear as a dense, interconnected web of thin, cylindrical or tubular elements, creating a porous, sponge-like appearance. The color palette is primarily yellow and orange, with some darker brown and black areas, suggesting a metallic or carbon-based material. The overall texture is highly porous and irregular.

ADVANCED MATERIALS INTERFACES

SURFACE MODIFICATION

Conformal coating of cylindrically-patterned carbon nano tube micropillars with a dielectric poly-tetramethylcyclotetrasiloxane (PV_4D_4) film using initiated chemical vapor deposition (iCVD), followed by lithiation for 3 days in a 1 M solution of LiClO_4 in propylene carbonate (PC) and annealing at 110°C for 1 hour, results in partial capillarity-driven collapse of cylinders and the formation of porous CNT “microcupcakes” that offer potential application as electrodes in 3D Li^+ batteries. More details can be found in article number 1801247 by Srinivasa Kartik Nemani, Hossein Sojoudi, and co-workers. Courtesy of Hossein Sojoudi, Sanha Kim, and Gareth H. McKinley, Karen K. Gleason, and A. John Hart groups at MIT.