

ADVANCED FUNCTIONAL MATERIALS



HIERARCHICAL NANOSTRUCTURES

A schematic of the mechanically stable superhydrophobic membrane, with high stretchability and gas breathability, created by G. Lim and co-workers on page 5577. The scanning electron microscopy image in the upper left shows as-prepared nanostructured fibers. The image in the lower right corner presents nanocracked fibers. The 3D schematic in the center shows the hierarchical structure, which consists of an elastic polyurethane fibrous matrix coated with polyaniline hairy nanostructures and polytetrafluoroethylene. The membrane exhibits excellent superhydrophobic properties under $\geq 300\%$ strain.