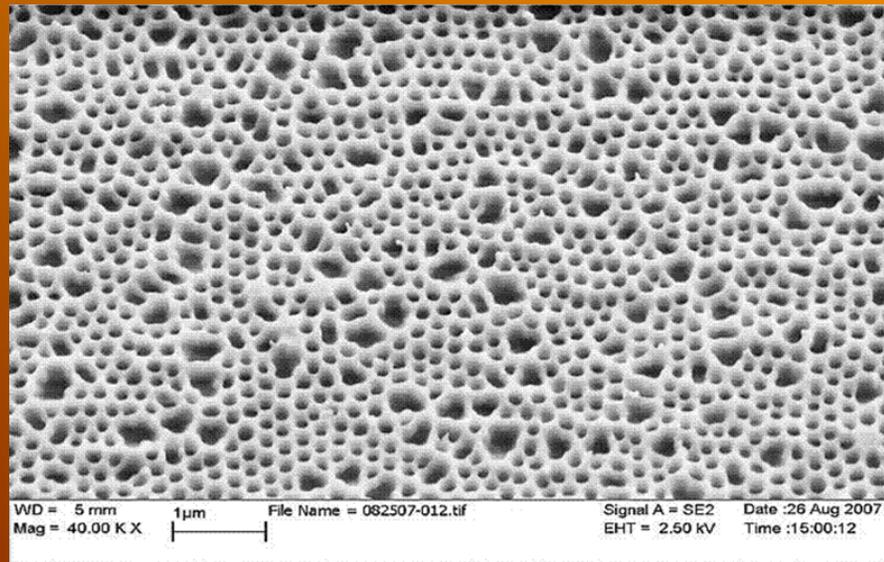


Biomimetic Nanomaterials Research

Environmental Nanomaterials Research Group (ENRG)

Development of nanomaterials and nanoscale structures for engineering applications requires scientists and engineers to look for inspiration and concepts in new places. The natural world is full of self-assembled complex nanostructures composed of a wide range of organic and inorganic molecules. From structures and materials in the walls of environmentally-durable spores to the mechanisms responsible for formation of metal nanoparticles in the guts of invertebrates to the nanostructures which make the wings of cicadas anti-reflective, we are looking to nature for engineering solutions in areas such as protective coating development, environmental remediation and design of sensors. Working with collaborators at SBU and Brookhaven National Laboratory, we have been developing nanostructured materials based on modified polysaccharides, organic ligands, and metal ions.

Imprint of nanostructure from an Australian cicada wing in a polymer (PMMA) coating using a nanopress.



(Work by G. Bunch, undergraduate in Engineering Science Program)