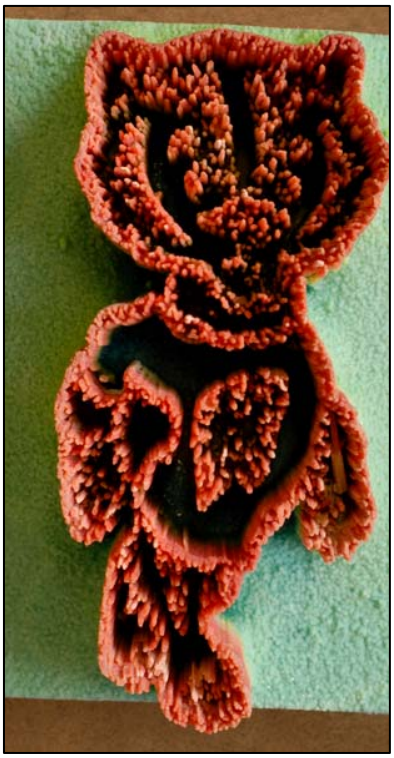
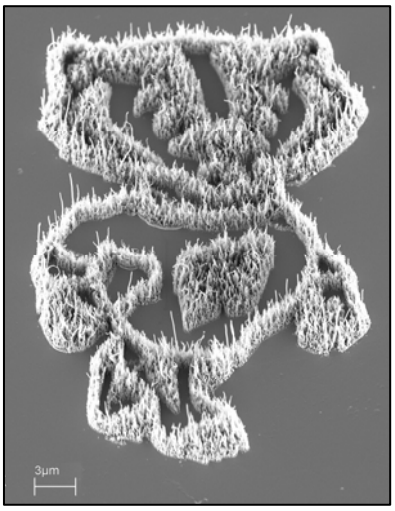
Tactile Nanoscale Models Make Nanoscience Accessible



The Nanoscale Science and Engineering Center (NSEC) at the University of Wisconsin–Madison has developed a method to convert scanning electron microscope (SEM) images of nanoscale materials into 3D tactile physical models for the blind and visually impaired. A short MATLAB script converts 2D SEM images into 3D data that are printed using rapid prototyping technology. The 3D models can be printed nearly 12,000 times larger than the original nanoscale surface. The tactile models allow one to feel the surface of nanoscale materials for the first time. The first tactile model of "Nanobucky" allows users to feel the individual nanofibers that comprise the original. Over the next year the NSEC will print models of images from other center research projects. The models will be used to teach blind and visually impaired students at the Indiana School for the Blind about nanoscale science and engineering.



At left is the original "Nanobucky," whose entire domain is 15 µm. At right is the tactile nanobucky, whose domain is 20 cm.

Patents or other steps toward commercialization:

Contributing Agency: NSF