Bending and Stretching Possible for Tiny Diamond Needles, say Researchers

By Smita Deshmukh - April 23, 2018

Although diamond is the strongest of all natural materials on Earth but with its strength also comes brittleness. An international team of researchers from MIT, Singapore, Hong Kong, and Korea have found that when diamonds are grown in extremely tiny needle like shapes, they can stretch, bend, and even snap back to its original shape like a rubber. This can open new doors for the variety of diamond base devices for sensing, actuation, data storage, optoelectronics, biocompatible in Vivo Imaging, and also for drug delivery. Diamond has been explored as a biocompatible carrier for delivering drugs into cancer cells.

9% Stretch Demonstrated in Diamond Needles

The team of researchers have demonstrated that diamond needles which are narrow and similar to the shape of rubber tips can be stretched and flexed as much as 9% without any breakage. Also, the return to their original configuration when released. It is very new and surprising to see the amount of elastic defamation which can be sustained by nanoscale diamond. This is because original Diamond which is in the bulk foam exhibits 1% of stretch and in fact below. The team measured the bending of the diamond needles through electron microscope.