Gum arabic under an electron microscope (w/ Video)

July 1 2014

This alien glob in the video below is a piece of gum arabic from the hardened sap of the Acacia tree, most likely collected from a tree in Sudan. Rox Middleton explains how the electron microscope has changed the way we are able to interact with objects at the nanoscale, allowing us to enjoy a glimpse of the exquisite abstract forms around us.

"This lustrous picture was taken on an electron microscope, allowing us to see below the wavelength of light. It's actually a very boring scrap of gum arabic powder, which is made from the hardened sap of the Acacia tree, probably collected in Sudan.

Gum arabic is a common additive in food, glue and polish where it works as a thickener and emulsifier.

By covering it in a nanoscale layer of gold, and bombarding it with electrons in a vacuum, we reveal its smooth and alien texture, and the beauty hidden in this plain speck of dust.

We can learn a lot from looking at structures in natural materials at this very small scale. They tells us how we can adapt them to build our own new materials with new characteristics and uses."

Provided by University of Cambridge