**A lotus leaf**

The surface of these leaves have waxy, nanometer-sized bumps that keep water and dirt from sticking to them. When water drops fall on the lotus leaf, they bead up and roll off! Scientists call this the Lotus effect. Other nanotechnology applications mimic the lotus effect, including self-cleaning window glass, paint, and some special fabrics that repel dirt and stains. These products are all *hydrophobic,* which means they repel water.

A blue-morpho butterfly

The Blue-morpho’s wings have very small overlapping scales covered with tiny “ribs”. The size and arrangement of these nanostructures makes the wings look blue- but they’re actually transparent! There’s an air space of a few nanometers between the ribs. Light waves bouncing off the top and bottom surfaces of neighboring ribs interfere with each other. Most light waves are cancelled by the interference and only certain wavelengths-seen as colors- bounce back to your eyes. So when you look at the front of the butterfly, it’s a beautiful, iridescent blue.

**Gecko feet**

The toes of a gecko are divided into nanoscale hair-like structures.

When a gecko places its foot on the wall and curls its toes, these nanoscale structures interact with the wall on the atomic level. The forces (van-der-waals forces) between the nano-structured hairs of the gecko foot and the atoms of the wall are strong enough to hold up the gecko. Scientists are working to make materials that use gecko-like nano-structures for adhesion.

Hummingbirds

While they can be very small, they do not have any known nano properties.