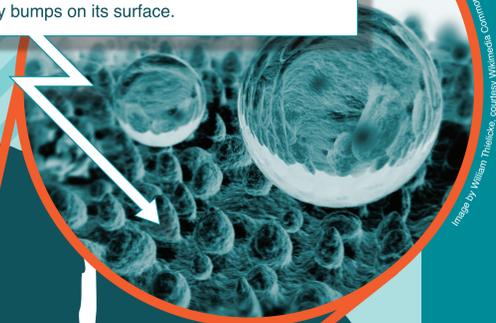


# Bump and Roll

## Nanotechnology Sometimes Borrows From Nature

The self-cleaning property created by the tiny surface structures of a cabbage leaf is known as the *lotus leaf effect*, after the plants in which it was first studied. This close-up of a lotus leaf shows the tiny bumps on its surface.



Cabbage leaves are water-resistant and self-cleaning. And scientists are developing new nanomaterials with similar properties.

If you used an electron microscope to look at a cabbage leaf, you'd see complex micro and nanoscale bumps on its surface. The uneven surface creates air pockets between water and leaf, and keeps water drops from sticking to it. The water beads up and rolls right off—taking dirt with it.

Scientists are developing water-repellant and self-cleaning materials using micro and nanoscale structures like the ones on the leaves. These materials can be used to make stain-resistant pants, graffiti-proof paint, non-stick heart stents, and coatings for windows and satellite dishes. Can you imagine other uses?



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NISE and all related activities are supported  
by the National Science Foundation's Informal  
Science Education program (ESI - 0532536).