

Toxics

TOXICS

Learning from Lotus Plants How to Clean without Cleaners

Ask any school child or adult how leaves keep water from sticking to them, and they'll almost certainly say, "Because they are so smooth." Yet one of the most water repellent leaves in the world, that of the Lotus (*Nelumbo nucifera*), isn't smooth at all. The myriad crevices of its microscopically rough leaf surface trap a maze of air upon which water droplets float, so that the slightest breeze or tilt in the leaf causes balls of water to roll cleanly off, taking attached dirt particles with them. Now, microscopically rough surface additives have been introduced into a new generation of paint, glass, and fabric finishes, greatly reducing the need for chemical or laborious cleaning. For example, GreenShield, a fabric finish made by G3i based on the "lotus effect", achieves the same water and stain repellency as conventional fabric finishes while using 8 times less harmful fluorinated chemicals.