How leaves survive falling raindrops

SEAN GART, KATIE NORRIS, DANIEL CHIQUE, SUNGHWAN JUNG, Virginia Tech — Plant surfaces found in nature often exhibit hydrophobic or hydrophilic wetting properties; a particular example is the surface of leaves. Most leaves are compliant enough to survive while being impacted by rain droplets. Here, we investigate this leaf-drop system exhibiting a unique system of coupled elasticity and drop dynamics. By replacing the leaf with a thin piezoelectric cantilever beam, we further measure and harvest this drop kinetic energy as a workable model for an energy-harvester from rain drops.

Sean Gart
Virginia Tech

Date submitted: 09 Nov 2012

Electronic form version 1.4