



Graphene Mechanical Wonders

Graphene, a single layer of graphite, represents the first truly two dimensional atomic crystal. It consists solely of carbon atoms covalently bonded in a hexagonal chicken wire lattice. This unique atomic structure gives it remarkable electrical, mechanical, and thermal properties. It has the highest electrical and thermal conductivity among all materials known. However, it is the mechanical properties of this wonder material that fascinate our group the most. It is the thinnest and strongest material in the world as well as being impermeable to all standard gases. In this talk, I will review some of our recent experimental results on graphene adhesion, atomically thin semipermeable membranes, and the mechanical properties of a new class of ultrathin (~ 1 nm) oxide membranes.

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SCI 109, Metcalf Science Center, Boston University

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