

Abstract Submitted  
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**Capillary Action may Cool Systems and Precisely balance Chemical Reactions** RICHARD KRISKE, University of Minnesota — It is well known that it takes no work for Water to rise in a Capillary tube against the force of Gravity. There is a precise balance in this system that resembles Robert Millikan's "Oil Drop" experiment, where mass was balanced against the electrostatic force. If at the top of the capillary tube there is evaporation, one can see that the system is cooled as another water molecule has room to move up the column. Furthermore, if the evaporation process can be controlled one photon at a time, a precise balance is created between a photon, and the height/mass of the column. If other molecules are placed in the column, they can be moved up and down the column, in a chromatograph way, in a fairly precise manner, by controlling evaporation and molecular weight. If in addition to all of this, the interface of the solution against the walls of the column have Fermi levels, it can be seen as a very precise Electrochemical Device. In the situation of nanotubes, as opposed to trees and plants, these properties can be used to create measure environmental properties and to Balance Chemical Reactions. Forests, and Plants may cool themselves and their environment using this process, and using this process coupled with more energetic photons through photosynthesis.

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