

The Fourth Phase of Water: Biological Implications

Gerald H. Pollack, PhD
University of Washington, Seattle
ghp@u.washington.edu
<http://faculty.washington.edu/ghp/>

It has been common knowledge that water has three phases: solid, liquid and vapor. But we have recently uncovered what appears to be a fourth phase. This phase occurs next to hydrophilic surfaces. We refer to it as the “exclusion zone” or EZ. It is surprisingly extensive, projecting out from the surface by up to millions of molecular layers.

Of particular significance is the observation that this fourth phase is charged; and the water just beyond is oppositely charged, creating a battery that can produce current. We found that light recharges this battery. Thus, water can receive and process electromagnetic energy drawn from the environment. The absorbed light energy can then be exploited for performing work, including electrical and mechanical work. Recent experiments confirm the reality of such energy conversion.

The energy-conversion framework implied above seems rich with implication. Not only does it provide an understanding of how water processes solar and other electromagnetic energies, but also it may provide a foundation for simpler understanding many natural phenomena. A preliminary draft of the forthcoming book on this phase of water can be downloaded from the site listed above by clicking on “New Book.”

The presentation will focus mainly on biological implications. I will discuss the role of water, including the fourth phase, on various common biological functions.