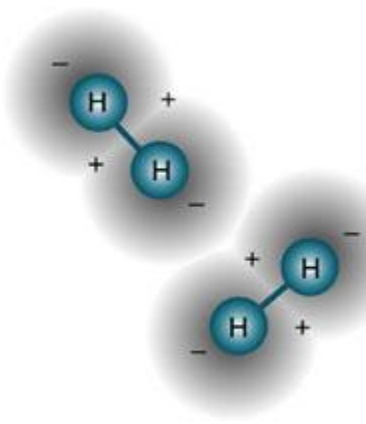


Hydrogen and Negative- Ion Hydrogen as Energy Currency in Life Forms



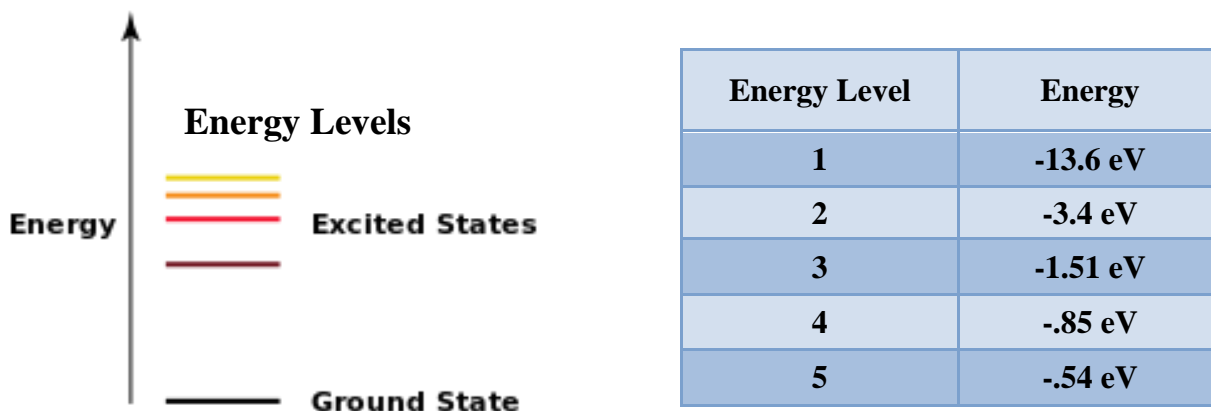
Hydrogen and Negatively-Ionized Hydrogen have emerged as the major energy currency in living systems. An excellent and simple example is the binary pair NAD (Nicotinamide Adenine Dinucleotide: a coenzyme found in all living cells) and NADH (NAD + Hydrogen). NADH is well known as a powerful energy carrier in living systems, and to play a key role in the energy currency of most cells of many life forms, including those of humans, while NAD is its low-energy combustion product. There are pathways in many organisms, including humans, which can, to a limited extent, recharge the NAD with the negatively-ionized Hydrogen (H⁻ ion) to convert it back to the high energy form of NADH. Thus the NAD, as the low-energy state, serves as both a precursor to NADH and a combustion product of NADH. As such, **NAD** can be visualized as the "**ground state**," and **NADH** as the "**high-energy state**."

Hydrogen Super Plus supplies NADH in an active yet stable form to increase cellular energy levels and to reverse certain chronic diseases, along with some types of dementia, among other positive effects.

As early as the 1950's, Albert Szent-Gyorgyi, Nobel prize recipient and discoverer of Vitamin C stated years ago, "**Hydrogen is the fuel of life.**" The hydrogen carries oxygen into the cell where the oxygen burns the hydrogen to form ATP, the compound that all cells use for energy. So Negative-Ion Hydrogen is a non-caloric source of cellular energy. The byproduct of this process is pure water. He also stressed that this energy currency may be traced directly back to the sun, or more literally, to the energy contained in sunlight. This is especially fascinating in light of the discovery of latter 20th century astronomy that much of the sun's atmosphere is composed of the Negative-Ion Hydrogen.

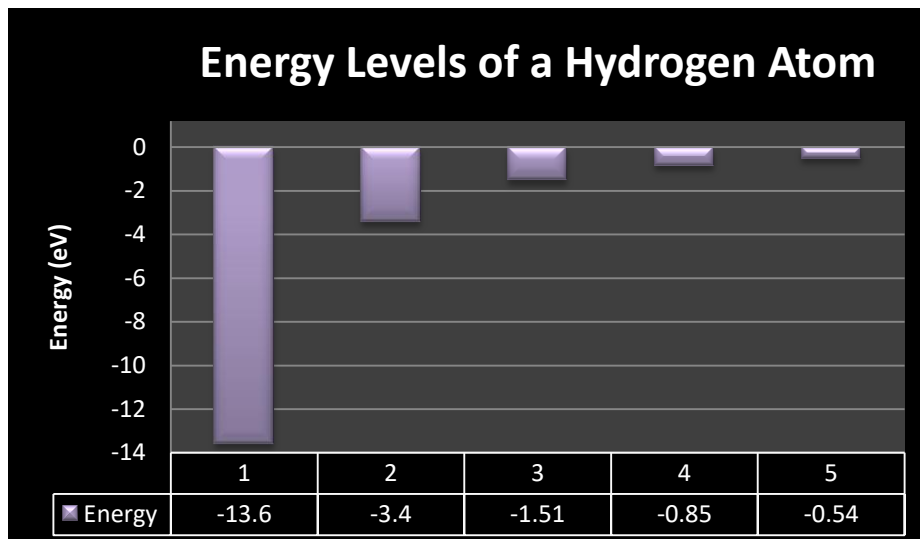
If an atom, ion, or molecule is at the lowest possible energy level, it and its electrons are said to be in the *ground state*. If it is at a higher energy level, it is said to be *excited*, or any electrons that have higher energy than the ground state are *excited*. If more than one quantum mechanical state is at the same energy, the energy levels are "degenerate". They are then called degenerate energy levels.

Energy Levels of a Hydrogen Atom



Energy levels for an electron in an atom: ground state and excited states.

After absorbing energy, an electron may jump from the ground state to a higher energy excited state.



Because the states an electron occur only at discrete energy levels, they are said to be quantized. The word quantum comes from a Latin word meaning "**how much**." The branch of physics that provides the current model of the Hydrogen atom is called *quantum mechanics*.

The electron in a Hydrogen atom can only have certain energies. These energies are called **the Hydrogen's "energy levels."** The different energy levels of Hydrogen are denoted by the quantum number **n** where n varies from **1** for the ground state (the lowest energy level) to ∞ , corresponding to unbound electrons. In practice, electrons with high n (e.g. 100 or more) are so weakly bound that even weak disturbances will pull the electron away.

Because it takes a minimum amount of energy, called the "ionization energy" to strip or ionize a bound electron from the Hydrogen atom, energy levels are usually referred to as being **negative quantities (-)**. In both classical physics and quantum mechanics the absolute value of energy is irrelevant; only energy differences matter. It is convenient to say that when ionized the electron will have zero binding energy to the proton. With this convention, the different energy levels of a Hydrogen atom are given by the equation:

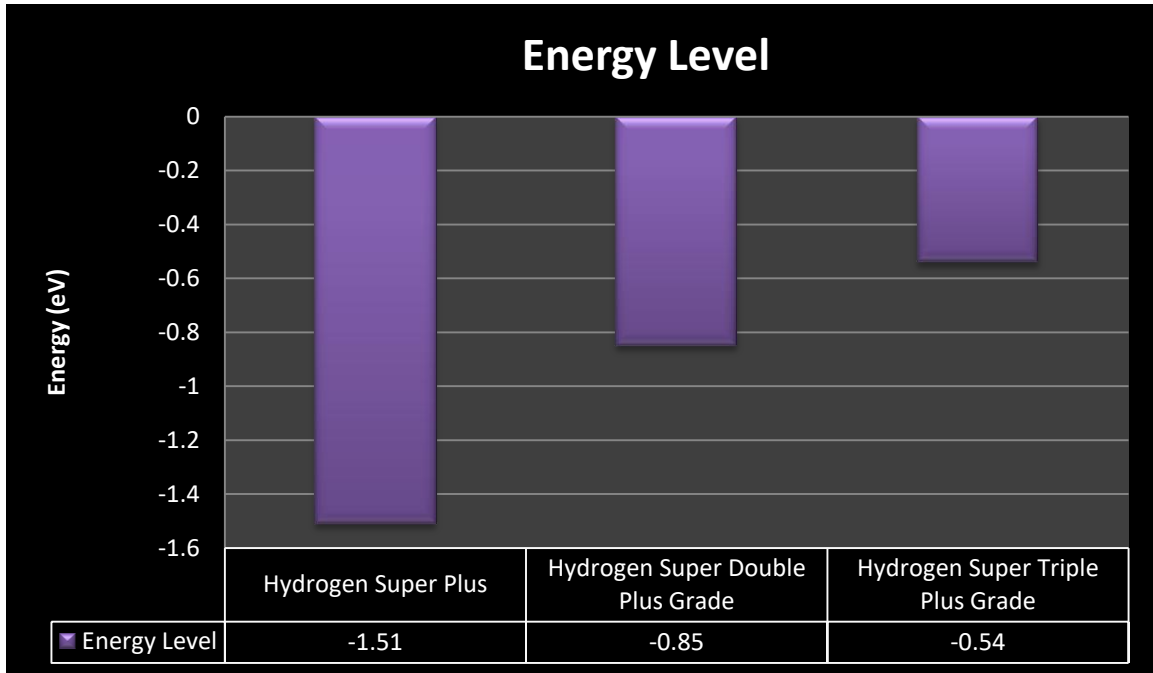
$$E = - \frac{E_0}{n^2}$$

where $E_0 = 13.6 \text{ eV}$ ($1 \text{ eV} = 1.602 \times 10^{-19} \text{ Joules}$) and $n = 1, 2, 3, \dots$ and so on so that the ground state has energy $E_1 = -13.6 \text{ eV}$ and the second energy level (the first excited state) has energy $E_2 = -13.6/4 \text{ eV} = -3.4 \text{ eV}$.

Excitation

A hydrogen atom with excess energy is said to be "excited". The two primary ways to excite an atom are through absorbing light and through collisions. When two atoms collide energy is exchanged. Sometimes, some of that energy is used to excite an electron from a lower energy level to a higher energy level. How many collisions and how energetic the collisions are will depend on how tightly the hydrogen atoms are spaced and their average temperature. How absorbing light causes transitions is discussed more in the transitions background page. Another way to excite an atom is to absorb electromagnetic energy, or in the terminology of quantum mechanics, "absorb a photon".

Comparing Energy Level of Hydrogen Super Plus with Hydrogen Super Double Plus Grade & Hydrogen Super Triple Plus Grade



Hydrogen Super Plus	Hydrogen Super Double Plus Grade	Hydrogen Super Triple Plus Grade
-1.51 eV	-0.85 eV	-0.54 eV

The most valuable benefits of Hydrogen Super Plus are improving health, repairing tissue, reducing pain, increasing energy and reversing aging. The cells and the body as a whole are restored to and kept in the healthiest possible state.