

An Explanation of High Helium Concentration in Chupadera Mesa in New Mexico by Hydrogen-fusion

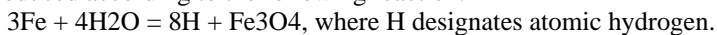
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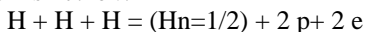
Helium is contained in natural gases and its concentration varies from nearly zero to 8% (mole percent). Helium concentration of the most of natural gas wells in USA is below 0.3%, but some in New Mexico which are located on the densely distributed fault zones contain as much as 8% of helium. Interestingly, helium content increases with proximity to the faults. It is commonly perceived that ^4He is generated by radiogenic decay of uranium and thorium and ^3He is mostly primordial and derived from the mantle. S. Jones proposed geo-fusion of deuterium in condensed matter within the earth. In this case outcomes are tritium and ^3He (^4He is negligible). The author proposed earthquakes are caused by hydrogen fusion whose outcomes are both ^3He and ^4He . The helium isotope ratio ($^3\text{He}/^4\text{He}$) is a good tool to determine the origin of helium. The atmospheric isotope ratio, R_a is 1.4×10^{-6} . The helium isotope ratio of the most of natural gas wells in USA is under $0.08R_a$ but Chupadera Mesa in New Mexico has $0.515R_a$, about 6 times higher. This suggests part of helium was derived from the mantle or geo-fusion or earthquakes caused by hydrogen fusion.

R.L. Mills has reported that atomic hydrogen can generate energy somewhat between chemical reaction and nuclear reaction by lowering the electron orbit from the ground state to lower state. According to Mills, hydrogen atoms can achieve lower states than ground state by a resonant collision with a nearby atom or combination of atoms having the capability to absorb the energy to effect the transition, namely, an integer multiple of the potential energy of the electron at atomic hydrogen, $m \times 27.2 \text{ eV}$ (m is an integer). He named this shrunken hydrogen atom hydrino and claims that this hydrino can be a catalyst to shrink other hydrinos to further lower states. He named this reaction the BlackLight Process.

The Earth's crust is divided into several separate solid plates. Subduction occurs when two plates collide and the edge of one dives beneath the other. The crust contains water and when it contacts with metals such as iron, atomic hydrogen will be produced according to the following reaction.



Once atomic hydrogen is produced and if there is no heat sink at the collision point, just a collision of atomic hydrogen, for instance, $\text{H} + \text{H} = \text{H}_2$ (molecular hydrogen) wouldn't take place but just elastically repulse each other. This suggests that high pressure atomic hydrogen gas will build up under the ground. As is shown below, a simultaneous collision of 3 atomic hydrogen is the BlackLight Process because the ionization energy of hydrogen is 13.6 eV and the sum of the ionization energy of 2 hydrogen is 27.2 eV .



p designates proton and $(\text{H}_{n=1/2})$ designates a hydrogen whose electron orbit is shrunken to $1/2$ the radius of a normal one and these will be shrunken further to lower orbits as reaction continues. It can be postulated that if containing vessels are tight enough as is the case of the underground, well shrunken hydrinos which have a relatively small Coulomb barrier can fuse each other resulting in the generation of mainly ^4He and a fraction of ^3He .

Helium generated by radiogenic decay of uranium and thorium in granite migrates with other gases. But it is very difficult to find out the mechanism how helium content increases. The fact that helium content increases with proximity to the faults strongly suggests that dense helium at the fault was first made and then propagate. The coincident of the densely distributed faults and high helium concentration in Chupadera Mesa in New Mexico indicates helium was made in the event of earthquakes by hydrogen fusion. Rather high helium isotope ratio ($^3\text{He}/^4\text{He}$) of $0.515R_a$ is due to the unburned ^3He in the event of earthquakes.