A Geometric Understanding of Low Energy Nuclear Reactions in the Palladium-Deuterium Lattice

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Our physical understanding of the universe follows from an investigation of the position of objects in space and of the change in those positions over time. Such investigation results in information concerning the patterned regularity or apparent randomness of the interaction of said objects. Such objects are generally defined by some set of qualitative properties and can be either immediately perceived by the senses or inferred based on a perceived pattern of interactions of other, directly or indirectly observed objects. Direct perception results in a localization of those qualities in space. Inference can suggest either a localization of those qualities or a diffusion, bounded or not, of those qualities throughout the neighboring space as in the notion of an extended quality or field. Such fields in turn can be thought of as either extensively self-existent or as proceeding from some localized source and/or proceeding to some localized sink. In the case of a source/sink, the qualitative intensity or density which defines the field generally varies as a function of the change in position or over time of some locus of the field with respect to its source or sink. Oscillation of field intensity/density lends itself in turn to wave analysis of physical phenomena. Current physical theory tends toward the wave/ field model as a means of explaining and calculating all physical object interaction.

A result of this development in physical thinking is that the interaction of all properties and their elaborations such as mass, momentum, action, force, energy, power, charge and spin, among others, are localized in their objective perception according to well-defined, multi-dimensional geometric constraints. Thus the various fundamental particles of matter, be they quarks and leptons or their presently conceived composites, nucleons and atoms, are found to interact, even when highly energized, according to geometric constraints. This is found in the various depictions of electron orbitals, which are graphic representations of electron probability density. In the state of condensed matter, as in the case of metallic crystals, the geometric configuration and interaction is pronounced via these orbitals, both with respect to the elemental atomic structure and the admixture of any other elements. Such geometric, patterned alignment can be seen in the lattice for the electron bonding and the nuclear localization of both the crystal element and its absorbed element.

The palladium-deuterium lattice is a pre-eminent example of this dynamic geometry. The charge field strength of the two elements is such that the electronegativity of hydrogen and palladium is an identical 2.20, and in the context of the face centered cubic or cuboctahedral lattice of palladium, any hydrogen or deuterium introduced to the lattice via electrolysis and conducted toward the interior via covalent bonding will have its nucleus positioned directly in the center of the triangular lattice aperture to an interior tetrahedral interstitial chamber formed by three co- planar palladium nuclei. Said nucleus thereby achieves precise target confinement for the nuclear projection of any absorbed deuterium atom located in the tetrahedral chamber, in response to excitation of an adjacent palladium 5s orbital, thereby resulting in clean, low energy nuclear fusion and the production of helium. This is the basis of the Fleischmann - Pons experimental phenomena and for sustained and virtually inexhaustible, clean energy production for the future.

[1] M. Gibson, “Low Energy Nuclear Reaction” YouTube video, https://www.youtube.com/watch?v=3RiZxqZVoBY&t=40s, 2015.
[2] M. Gibson, “Low Energy Nuclear Reaction audio enhanced” YouTube video, https://www.youtube.com/watch?v=1Z7FXK_2CAc, 2017.