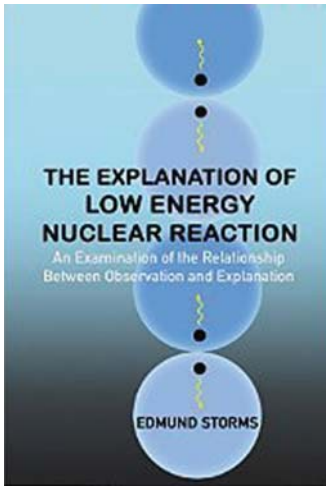


BOOK REVIEW

The Explanation of Low Energy Nuclear Reaction: An Examination of the Relationship between Observation and Explanation by Edmund Storms. Concord, NH: Infinite Energy Press, 2014. 323 pp. + xxvii. ISBN: 978-1-892925-10-7.

Edmund Storms' new book is entitled *The Explanation of Low Energy Nuclear Reaction*, though, since it is far from clear that an acceptable explanation has been given in the book, a more accurate title might be "Attempting to Explain Low Energy Nuclear Reactions" (commonly known as cold fusion, and abbreviated by the acronym LENR). Storms' strategy involves exhaustive study of the many experiments that appear to validate claims for the existence of this phenomenon, arguing on the basis of these experiments that many possibilities are excluded by the data: Hence, very few possibilities remain for consideration.



Any explanation for the phenomenon has to take into account three aspects: the place where the reactions occur, how the Coulomb repulsive barrier that normally prevents fusion taking place at ordinary temperatures is overcome, and how the energy released is dissipated without significant production of high-energy particles. Storms argues that some assembly

of atoms must be involved, and that the only place where such an assembly can be located in is in a crack-like structure. He rejects the explanations that have previously been proposed for overcoming the Coulomb barrier and releasing the energy that is generated, and instead proposes that a metallic chain of hydrogen atoms called a hydroton is involved. By some mechanism that is unclear this entity starts to vibrate, making it somehow possible to overcome the Coulomb barrier. Then the fact that this happens slowly makes it possible for the excess energy to be carried away in small units, rather than all at once.

It is unclear how much this can be considered an explanation. It is an

explanation in some senses of the word, but details are absent. Here perhaps we have a culture clash. Storms is a chemist, and perhaps chemists are less troubled by lack of detail than are physicists, who tend to want a clear account of what entities are involved in a process and a precise description of the processes involved. This Storms does not supply. Nevertheless, the picture that he proposes may provide a useful stimulus to further analysis and experimental investigation.

The book goes in great detail into the experiments that have been performed and the theories that have been proposed, and on these grounds alone will be of considerable value to those interested in these matters.

BRIAN JOSEPHSON

Department of Physics
University of Cambridge