

Review for "Nattoh" Model and Experimental Findings during Cold Fusion

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Abstract

A review is described for the Nattoh model that provides the framework of the mechanisms of cold fusion. The model classifies the reactions into two categories: fundamental and associated reactions. The former involves the new "hydrogen-catalyzed" fusion reaction and the chain-reactions of hydrogens. And extremely exciting physics are involved in the latter. Furthermore experimental findings are described.

1. Introduction

Since Pons and Fleischmann(1) and Jones et al.(2) independently published cold fusion, many experiments have been performed to verify whether the cold fusion can really take place in a metal. It has been made clear that the phenomena of the cold fusion are too complicated to be explained by the conventional D - D fusion reaction at all. Our thinkings of the cold fusion should be drastically changed.

The author early proposed the Nattoh model ("nattoh" means fermented soybeans) that can well explain the com-

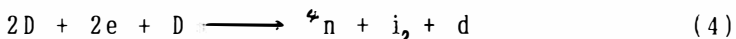
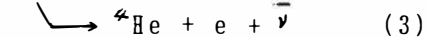
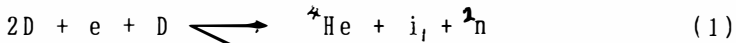
plicated phenomena(3,4). This paper describes a review for the Nattoh model and the important experimental findings that have been obtained by using nuclear emulsions.

2. Review for Nattoh model

The framework of the cold fusion is shown in Fig. 1.

2.1 Hydrogen-catalyzed fusion reaction(3, 5)

The hydrogen-catalyzed fusion reaction occurs in hydrogen-clusters. Many hydrogens are contained in the clusters so that there are many variations for the fusion reaction. The most probables are the fusion reactions between two hydrogens as follow, for heavy water,



Here 2n and 4n are the di- and quad-neutrons, respectively. The new particle "itons" i that might consist of electrons, positrons and neutrinos cover up the product particles. The emitted energetic hydrogens can make additional fusion reactions, i.e., the chain-reactions of hydrogens can be maintained to predominantly contribute to the excess heat production(4).

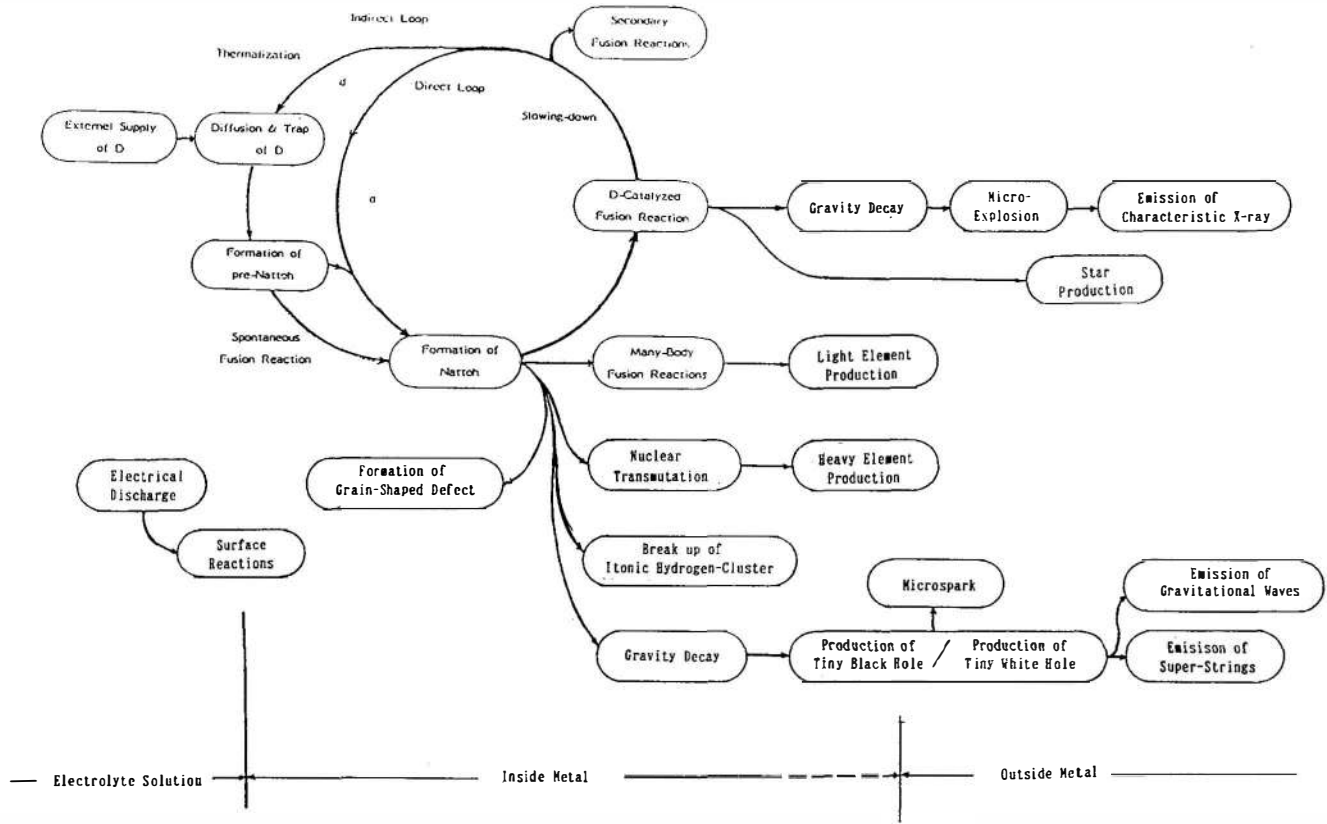
2.2 Associated reactions

There are various reactions associated with the hydrogen-catalyzed fusion reaction, shown in Fig. 1. Exciting physics such as the production of the multiple-neutrons, tiny black holes and white holes are also involved.

3. Experimental findings(6 - 19)

Experimental evidences indicating the reactions mentioned above were obtained. Micro-explosions caused by the di- and quad-neutrons were recorded on nuclear emulsions. And the evaporation of the tiny black holes that are produced by heavy multiple-neutrons was observed. The tiny white holes were also observed.

Fig. 1 Framework of cold fusion



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