Input Stimuli and Output Signals in LENR Experiments

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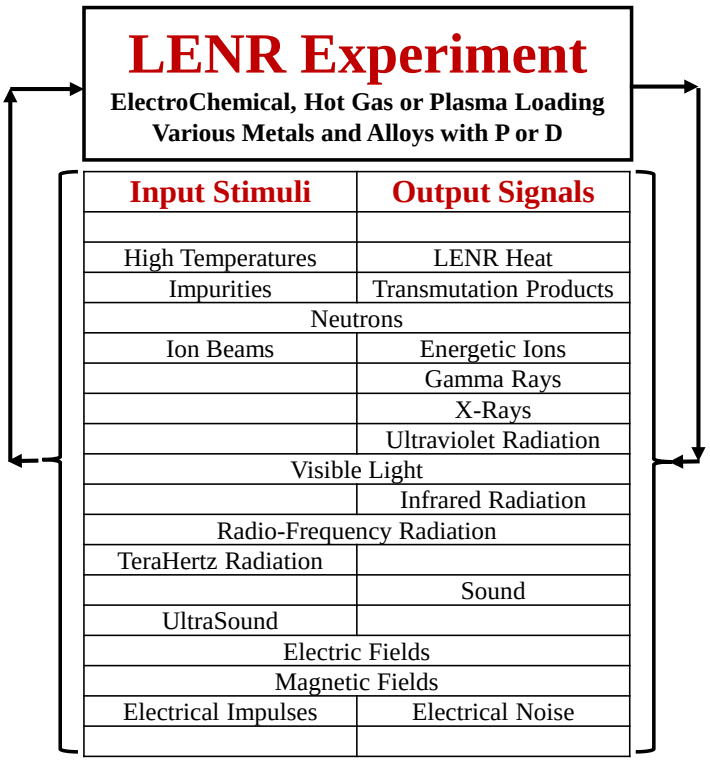
Over the decades, a wide variety of stimuli have been put into, and diverse signals have been measured from LENR experiments. The available empirical results raise two kinds of questions: (1) of all the published effects, which might be most valuable to emphasize in future experiments, and (2) what other stimuli or signals might be used to further the understanding and commercialization of LENR? This paper addresses these questions using the organization shown in this figure. Both productive past experiments and attractive future experiments will be considered.



Input. We will focus on a few of the input stimuli. Several past experiments have shown the efficacy of running LENR experiments at high temperatures. The potential roles of impurities are also significant. High frequency electromagnetic radiations in the visible, terahertz and radio-frequency ranges have been shown to lead to increased LENR rates. Published data show that electrical impulses also lead to increases in LENR production in some cases.

Output. Heat and reaction (transmutation) products are the most commonly measured output signals. However, our interest in this study will be more on the emission of electromagnetic signals in the visible, infrared, radio-frequency ranges. We give particular attention to the possible value of electrical noise in detecting the occurrence of LENR at levels well below calorimeter thresholds.

Input and Output. Electric and magnetic fields have been shown to both influence and arise from LENR experiments. There are some very basic questions regarding such fields, which we will discuss.

Any of the input stimuli or output signals are candidates for systematic, parametric experiments, which might illuminate LENR mechanisms and rates. Some such experiments will be recommended.