

Abstract

We propose a new mechanism for inducing low energy nuclear reactions (LENRs). The process is initiated by an electromagnetic perturbation. The initial two body nuclear state emits a photon and forms an intermediate state which makes a transition into the final nuclear state with emission of another photon. We need to sum over all energies of the intermediate state. Since the energy of this state is unconstrained we get contributions from very high energies for which the barrier penetration factor is not necessarily small. By considering fusion of H(1) and H(2) to form He(3), we determine the conditions under which this mechanism leads to fusion at observable rates. We show that this mechanism works only inside a medium and not in free space. We show that a clear experimental signature of this process is emission of two photons in coincidence whose total energy is related to the Q value of this process. Hence this process can be confirmed or ruled by presence or absence of such photons in the final state.