

Abstract Submitted
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New Mechanism of Low Energy Nuclear Reactions Using Super-

low F.A. GAREEV, I.E. ZHIDKOVA, Joint Institute for Nuclear Research, Dubna, Russia — We proposed a new mechanism of LENR (low energy nuclear reactions)¹: cooperative processes in the whole system - nuclei+atoms+condensed matter can occur at smaller threshold than the corresponding ones associated with free constituents. The cooperative processes can be induced and enhanced by (“superlow energy”) external fields. The excess heat is the emission of internal energy, and transmutations from LENR are the result of redistribution of the internal energy of the whole system. A review of possible stimulation mechanisms of LENR is presented. We have concluded that transmutation of nuclei at low energies and excess heat are possible in the framework of the known fundamental physical laws: The universal resonance synchronization principle², and, based on it, different enhancement mechanisms of reaction rates are responsible for these processes^{3,4}. The excitation and ionization of atoms may play the role of a trigger for LENR.

¹F.A. Gareev, I.E. Zhidkova, E-print arXiv Nucl-th/0511092 v1 30 Nov 2005.

²F.A. Gareev, In: FPB-98, Novosibirsk, June 1998, p.92; F.A.Gareev, G.F. Gareeva, in: Novosibirsk, July 2000, p.161.

³F.A. Gareev, I.E. Zhidkova and Yu.L. Ratis, Preprint JINR P4-2004-68, Dubna, 2004.

⁴F.A. Gareev, I.E. Zhidkova, E-print arXiv Nucl-th/0505021 9 May 2005

Scott Chubb
Naval Research Laboratory

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