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Reproducibility of Excess of Power and Evidence of ^{4}He in Palladium Foils Loaded with Deuterium M.M. APICELLA, G. MAZZITELLI, F. SARTO, E. SANTORO, V. VIOLANTE, ENEA Frascati Research Center, V.le E. Fermi, 45 00044 Frascati (RM), Italy, H. BRANOVER , A. EL BOHER, S. LESIN, T. ZILOV, Energetics, Ltd, Omer Industrial Park 84965 Israel, I. DARDIK, Energetics LLC 7 Fieldview Lane, Califon, NJ 07830, E. CASTAGNA, C. SIBILIA, La Sapienza University, Via Scarpa, 14 00100 (Roma) Italy, M. MCKUBRE, F. TANZELLA, SRI International 333 Ravenswood Ave, Menlo Park, CA 94025 USA
— Research at ENEA was oriented to material science study, in order to increase the deuterium concentration in palladium foils undergone to electrochemical loading and to triggering, in order to increase the reproducibility of excess of power production. Laser irradiation was used as trigger. Isoperibolic and flow calorimetry operating with electrochemical cells have been developed in order to reveal excess of power production. Nuclear ashes detection has been performed by means of high resolution and high sensitivity mass spectrometer. Material science studies allowed to obtain a palladium showing high solubility for hydrogen isotopes and giving deuterium concentration at equilibrium larger than 0.95 (as D/Pd atomic fraction) with a reproducibility larger than 90%. Excess of power experiments have been successfully carried out at Energetics Laboratory and at SRI. by using materials prepared at ENEA.Preliminary measurements give an ^{4}He signal in reasonable agreement with the expected D+D = ^{4}He + heat reaction.

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