

Abstract Submitted
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Study of methods to increase cluster/dislocation loop densities in electrodes XIAOLING YANG, GEORGE H. MILEY, University of Illinois, Urbana-Champaign, NPL Associates, Champaign, IL — Recent research has developed a technique for imbedding ultra-high density deuterium “clusters” (50 to 100 atoms per cluster) in various metals such as Palladium (Pd), Beryllium (Be) and Lithium (Li). It was found the thermally dehydrogenated PdHx retained the clusters and exhibited up to 12 percent lower resistance compared to the virginal Pd samples¹. SQUID measurements showed that in Pd these condensed matter clusters approach metallic conditions, exhibiting superconducting properties²³. If the fabrication methods under study are successful, a large packing fraction of nuclear reactive clusters can be developed in the electrodes by electrolyte or high pressure gas loading. This will provide a much higher low-energy-nuclear- reaction (LENR) rate than achieved with earlier electrode⁴.

¹A. G. Lipson, et al. Phys. Solid State. 39 (1997) 1891

²A. Lipson, et al. Phys. Rev. B 72, 212507 (2005)

³A. G. Lipson, et al. Phys. Lett. A 339, (2005) 414-423

⁴Castano, C.H., et al. Proc. ICCF-9, Beijing, China 19-24 May, 2002.

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