

Abstract Submitted
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**Lattice Assisted Nuclear Reactions From Nanostructured Meta-
materials Electrically Driven at Their Optimal Operating Point**

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— In lattice assisted nuclear reactions, hydrogen-loaded alloys enable near room temperature deuterium fusion and other nuclear reactions (1). The structural metamaterial shape of some D-loaded Pd nanostructures and deuterium flux (2) through them, driven by an applied electric field, appear to play decisive roles. The spiral Phusor[®]-type cathode with open helical cylindrical geometry in a high electrical resistance solution is a LANR metamaterial design creating intrapalladial deuteron flow. Optimal operating point technology allows improved and more reproducible operation (3). LANR power gain can be considerable. In situ imaging has revealed that the excess power gain is linked to non-thermal near-IR emission when the LANR devices are operated at their OOP. LANR devices have shown power gains more than 200%, and short term power gains to ~8000%. 1. Swartz, M, J. Sci. Exploration, 23, 4, 419-436 (2009). 2. Swartz, M, Fusion Technology, 22, 2, 296-300 (1992); 26, 4T, 74-77 (1994); 32, 126-130 (1997). 3. Swartz. M, Fusion Technology, 31, 63-74 (1997).

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