Aqueous and Nanostructured CF/LANR Systems Each Have Two Electrically Driven Modes

Mitchell Swartz, JET Energy, Inc.

Successful lattice assisted nuclear reactions [CF/LANR] use highly-loaded hydrogen binary alloys to create "excess heat" [XSH] and other products [1]. The original method (aqueous, low impedance $Pd/D_2O/Pt$) had low efficiency and poor reproducibility which created havoc for the inexperienced in metallurgy, electrochemistry, contamination avoidance, and protocols such as optimal operating point operation. This paper reports that calorimetry, H_2 gas measurement, and CMORE spectroscopy [Coherent Multiwavelength Optical Reflection Electric-driven] have revealed two distinct states ["modes"] of electrical-driven performance. Importantly, only one is the active, desired, excess heat[XSH]-producing mode [2]. Figure 1 reveals the two different electrically-driven states beyond "off": "on-" (not active, no excess heat), and "on+" (active, with XSH) for aqueous and dry systems. Note that the two methods confirm each other for both aqueous and dry preloaded LANR systems, and corroborate the existence of two electrically driven states – one inactive and the other active [XSH-producing]. As a corollary, both aqueous and nanostructured LANR systems, when active, have distinct calorimetric and CMORE antiStokes-XSH linked signatures. Knowledge and use of them has considerable value when seeking active systems, and understanding some past difficulties.

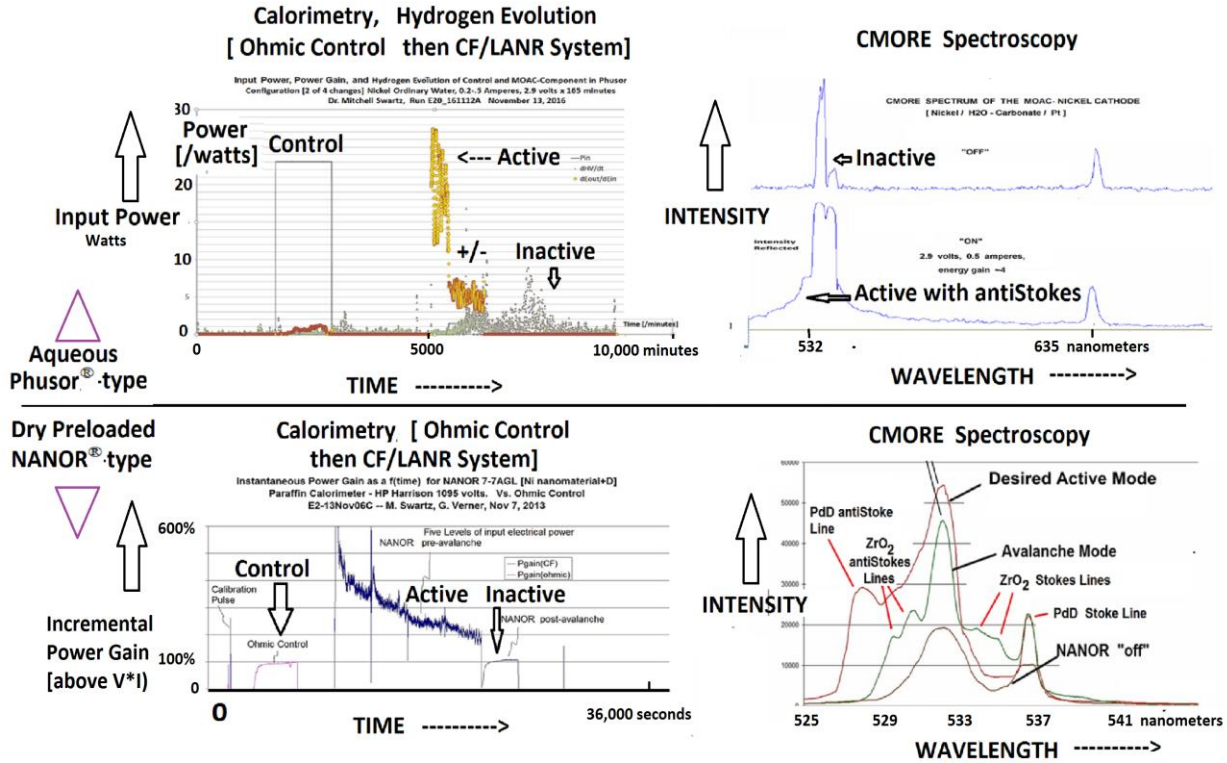

Figure 1 – Two Electric-Drive Modes Revealed for LANR Systems

Calorimetry (including incremental power gain, & the rate of XSH- and H_2 production) are on the left; CMORE spectra are on the right. The top row is from an aqueous Ni ordinary water system (Pt anode, PHUSOR®-type); the bottom row is from a dry ZrO_2-NiPdD NANOR®-type component.

[1] Swartz M.R., *Excess Power Gain using High Impedance and Codepositional LANR Devices Monitored by Calorimetry, Heat Flow, and Paired Stirling Engines*, Proc. ICCF-14, 1, (2008), 123; ISBN: 978-0-578-06694-3, 123, (2010); www.iscmns.org/iccf14/ProcICCF14a.pdf

[2] Swartz, M.R. *Optical Detection of Phonon Gain Distinguishes an Active Cold Fusion/LANR Component*, J. Condensed Matter Nucl. Sci., 20, 29-53 (2016).