Progress in Nano-Metal Hydrogen Energy

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In this ICCF23 talk, we review our R&D works on nano-metal hydrogen energy (MHE) in 2018-2020, after the 2015-2017 NEDO-MHE Project [1, 2]. Major issues that we have obtained [3, 4, 5, 6] are as follows:

1) Hydrogen Gas Loading Method using Nano-Metal Composite powders (Ni based binary nano-islands) at elevated temperature has provided reproducible AHE (anomalous heat effect) with significant excess thermal power (ca. 200 W/kg-sample at best) continuing for several weeks.
2) Repeated re-calcination of PNZ-type and CNZ-type powders is very effective to enhance AHE excess thermal power. Levels are of encouraging grade for extending R&D of MHE toward industrial application.
3) CCF (condensed cluster fusion of hydrogen isotope) is of guiding theoretical view of the AHE phenomenon.
4) MHE (nano-Metal Hydrogen Energy) reaction is hard radiation free, namely biologically safe enough.

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