

## “Excess Heat” — The Ideality of Cold Fusion

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In 1989, Fleischmann and Pons [1] announced that they found “excess heat” power four times more than the input in D-Pd electrolysis system. In 1991, Mizuno [2] got about 100 MJ “excess heat” also in D-Pd electrolysis system. In 1999, Tian [3] once observed 25W “heat after death” power in H-Pd gas-loading system. Because Tian saw the real “excess heat” with his own eyes, he did a lot of experiments to study this anomalous phenomenon. In 2003, Tian [4] found “excess heat” in electrolysis of Pt/K<sub>2</sub>CO<sub>3</sub>/Ni light water system, observed “excess heat” in a D/Pd gas-loading system triggered by 532 nm laser in 2007[5], and calculated nearly 100 W “excess heat” power in 2011[6]. The last one lasted for more than 40 days after Rossi [7] claimed that he would manufacture a megawatt-class energy catalyser (E-cat). Up to now none of us have seen any commercial apparatus coming out. Even few scientific papers appeared in mainstream academic journals. No need to say the confirmable “excess heat” that anyone else could replicate. Is there really “excess heat” in the world?

Storms [8] said: “... I expect one of the efforts, probably in China, will find an effective path and will use this success to explore the phenomenon in ways we have not been able to afford”. Why did Storms say such words? Why is the effort in China? Why isn't in America? Or in Japan or in some other country? Maybe Laozi [9] gave an answer about 2500 years ago: “Difficult things all-under-heaven must be done in easy and important things must be done in detail.” Under the guidance of Laozi's thoughts, we designed and assembled an apparatus to make further exploration on “excess heat”. We have done some preliminary experiments with it but haven't got any obvious “excess heat” so far. We don't know if the apparatus is effective. We have to persevere. On the 4<sup>th</sup> day of this month we applied for a Chinese patent of invention [10] to this apparatus.

The following opinions are to be shared with the participants attending ICCF23: Excess heat is the ideality of cold fusion; Simplicity is a path to get excess heat; Perseverance is an ability to find excess heat.

### References

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