**Third analysis of E-cat test October 6**
**by David Roberson, Nov 2, 2011.**

The data collected during the October ECAT testing is a virtual gold mine to explore. All you need is a sharp pick and a strong back to dig out the wealth. All of us would rather have mined the placer deposit that would have existed had Mr. Rossi placed the thermocouples in a better location and actually measured the input water flow rates, but it is necessary to use information at our disposal.

I have found additional important information left behind as clues contained within the temperature reading referred to as T2. My first document relating to a portion of the data can be found in Ny Teknik http://www.nyteknik.se/incoming/article3303817.ece/BINARY/Updated+analysis+Ecat+Oct+6+Roberson+%28pdf%29 which will not be repeated here but is a good reference.

Obtain a detailed graph of T2 versus time from my previous document mentioned above or by using Mats Lewan's data. You must have a graph which includes all of the data points in order to see the fine details necessary to follow this discussion.

Please note that there are two very different time constants visible affecting the temperature curve from the time mark of 13000 through approximately 23000 on the X-axis. The first one I want to discuss is the slowly decaying exponential temperature droop occurring throughout this time region. This curve can be identified by taking the value at 13000 and proceeding to the right in time all the way to 23000. You must subtract the bump in the total curve occurring from 16000 to 21000 time stamp. This is a result of behavior associated with the second time constant which I will talk about later.

This first time constant is responsible for the self sustaining mode and occurs due to the design of Rossi's device. Some form of thermal insulation is placed between the active cores and the heat sink inside the ECAT. If I were Rossi, I would first try using air as this insulation by adjusting the amount of core metal box contact to the heat sink thereby leaving an engineered air gap. This type of design would be easy to adjust as you attempt to balance conducted heat movement outward, which cools the core, versus allowing the core to remain at an ideal temperature enabling desired energy output.

The better your ability to engineer this balance, the longer the self sustaining mode will continue. The consequence of too much insulation would be core melting. The present adjustment seems to be functioning well enough for Rossi's first customer.

Of course this hypothesis depends upon the information supplied by Mr. Rossi to my request on his web site earlier. He stated that the energy was mostly if not all released in the form of radiation. This fact is critical as it allows him to separate the heat generation mechanism from the energy generation component. This is a major factor since he now can heat the core with his electric heater and have minimal interference from the heat

released by conversion of the radiant energy within the heat sink. Positive feedback is reduced and control is enhanced.

Soon I hope that Mr. Rossi will reveal the energy release function. I suspect that most of the energy will be in the form of high energy X-rays or low energy gammas that pass through the insulator. I have understood the reasons put forth that suggest that there cannot be any form of radiation to perform the job, but somehow it works. I suspect that there is a point being overlooked.

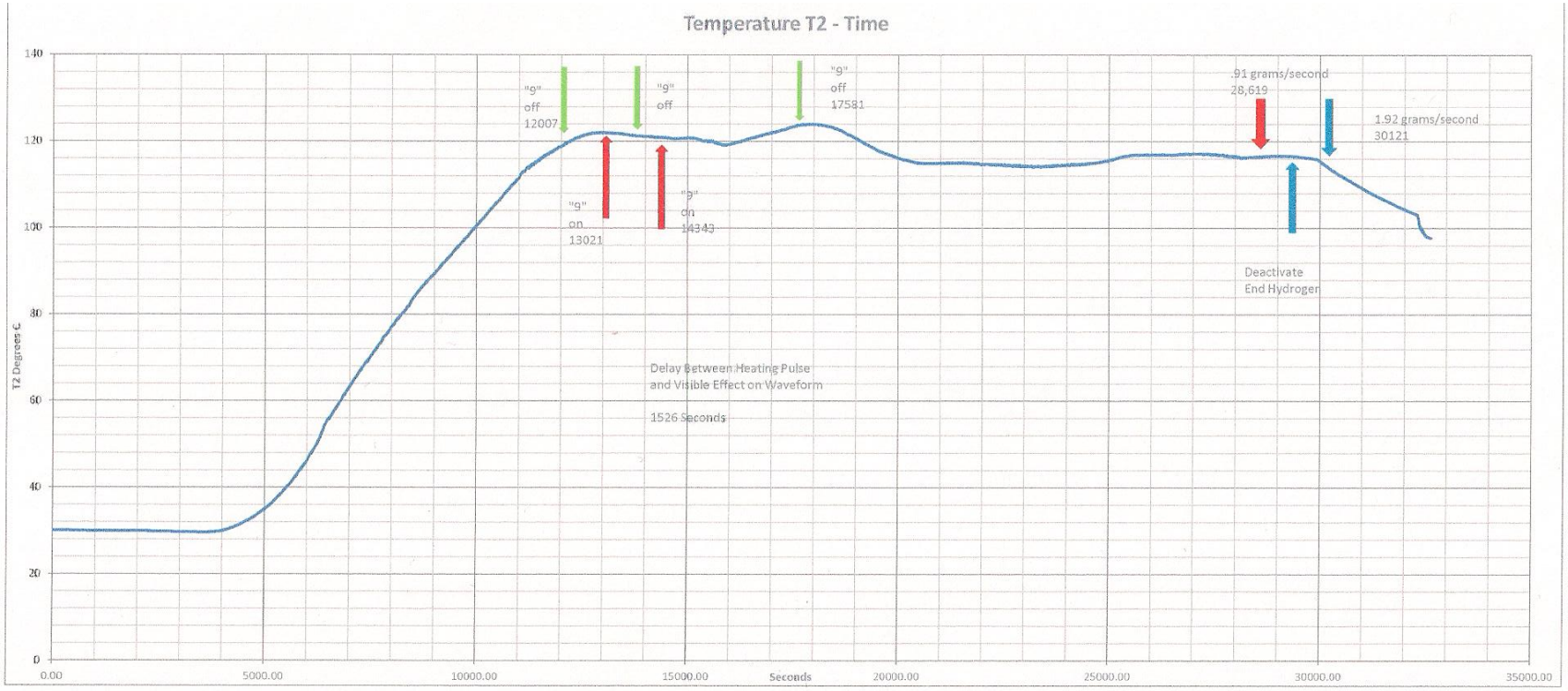
I want to briefly discuss the second time constant and its implications. I propose that the electric heater is attached to the heat sink and somewhat insulated from the core modules. This conclusion can be drawn by analyzing the bump in the T2 curve that is maximized at around 18000 time stamp. This response stood out to me as strange when I was attempting to calculate the COP of the ECAT from the data set. This bump is obviously a result of the filtering of the final long power input pulse that occurs just prior to entering self sustaining mode. You should notice that it has entirely been dissipated within a short period of time compared to the long time constant associated with the core insulation.

It is very clear that power inputted to the heating resistor is subjected to the heat sink cooling. Heat energy within the heat sink is able to rapidly conduct to the water within the ECAT enclosure. This offers proof for the skeptics that Jed Rothwell and I are correct in our assertions that the fact that heat continues to be produced for hours at a high level is proof of LENR activity. There is further evidence to support this supposition. The final curve beginning at 30000 time stamp proves this quite well. Note that the temperature of T2 falls like a proverbial rock beginning shortly after the hydrogen is released from the core region. There is a short period after the LENR activity has ceased and built in delays are satisfied. Within approximately 800 seconds, the decay begins at a rate similar to that seen due to the second time constant which establishes the conduction rate for heat stored within the heat sink. Review the falling edge of the pulse waveform around 19000 time stamp to see a similar decay rate. I see absolute proof of LENR activity by pursuing this line of reasoning.

I hope that Mr. Rossi reads this analysis and considers placing the heating element in close thermal contact to the core modules. Both the heating element and the cores should be removed from close thermal contact to the heat sink. If this is enacted, the COP will improve by a factor of 2 to 3 or more (estimate) and the heat required to start the LENR function likewise reduced. This will be a major improvement in the performance.

This document is based upon observations obtained by reviewing the Excel file submitted by Mats Lewan and statements attributed to Mr. Rossi in his journal. I have mined the T2 data deeply and made inferences which might turn out to be incorrect. The logic applied supports my conclusions.

David Roberson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Deactivate End Hydroger
Delay Between Heating Pulse and Visible Effect on Waveform
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