Highly Reproducible Anomalous Heat Produced by Cold Fusion (LENR) or Alternative Form of Exotic Energy

The purpose of this overview is to attract the interest of reputable investors. As such, this composition lacks several characteristics necessary for the more rigorous format and style required for scientific publication.

It is important to note that Flux Innovation's anomalous heat claims were successfully duplicated by an independent laboratory that has no affiliation with Flux Innovation LLC. EarthTech International Co. (www.EarthTech.org) duplicated Flux Innovation's excess heat claims on just their second try. In other words, only human error resulting in deviation from the well-established experimental protocol results in failure to demonstrate excess heat. EarthTech International's successful duplication of excess heat claims are documented on www.EarthTech.org but remain under password protection for confidentiality purposes.

Contrary to popular opinion, with passing time, excess heat claims associated with so called "cold fusion" (also commonly known as LENR) have not only become more numerous, but significantly more diverse as concerning protocols purporting excess, anomalous heat. The net effect is at least twofold—not only has the increasing number of excess heat claims from increasingly prestigious scientists, universities and laboratories made excess heat claims harder for the academic community to ignore, but the increasing diversity of protocols that seem to diverge significantly from the original Fleischmann and Pons purported mechanism of action have also made anomalous heat claims harder to explain.

View the following YouTube link to see an overview of arguments for and against LENR and how cold fusion has made a comeback in recent years: https://youtu.be/ZbzcYQVrTxQ Alternatively, search YouTube.com for the phrase, *"Cold Fusion is Back (there's just one problem)"*. The assertion that cold fusion seems to be "getting warmer" is further evidenced by the U.S. Department of Energy (DOE) recently offering 10 million dollars in grant money for research into LENR (the grant application window closed rather recently in mid-November of 2022). Cold Fusion has gained traction in other arenas as well. For example, although Wikipedia has been historically quite skeptical and dismissive concerning cold fusion claims, according to a September 2022 Wikipedia "Cold Fusion" entry, excess heat from experiments employing deuterium-free water (light water) and electrodes consisting of metals other than palladium (such as nickel) have been documented. Excess heat reported from experiments employing metals such as nickel that are only able to absorb a small fraction as much hydrogen as palladium electrodes, together with anomalous heat being reported from experiments carried out in light water, both represent significant, perhaps irreconcilable, departures from the original Fleischmann and Pons protocol that posited ultra-dense packing of deuterium from heavy water into palladium metal as a mechanism for cold fusion.

Such excess, anomalous heat claims that greatly depart from the original Fleishmann and Pons mechanism of action can be looked upon in at least three ways. Firstly, perhaps Fleishmann and Pons stumbled onto a new, exotic form of energy that produces anomalous heat by an unrecognized mechanism other than cold fusion or any other nuclear effect. Secondly, perhaps

cold fusion can be accomplished by way of a surprisingly wide array of materials and methods. Thirdly, hundreds of well qualified scientists and dozens of well-respected labs and universities have been naïve enough to consistently measure incorrect values for some of the simplest, most fundamental, and commonly measured variables in science such as voltage, current and temperature.

Although the increasing number and diversity of experimental protocols purporting excess heat from well qualified scientists, laboratories and universities have become increasingly difficult for the academic community to ignore, cold fusion-based excess heat claims currently suffer from at least four significant shortfalls:

1. Unacceptably low reproducibility of reactions purporting cold fusion (LENR) as the source of excess heat.
2. Insufficient fusion products necessary to account for the quantity of excess heat observed.
3. A lack of an accepted mechanism that could explain how fusion could occur at such low energies/densities.
4. The increasing diversity of experimental protocols that appear to depart, perhaps irreconcilably, from any nuclear mechanism of action.

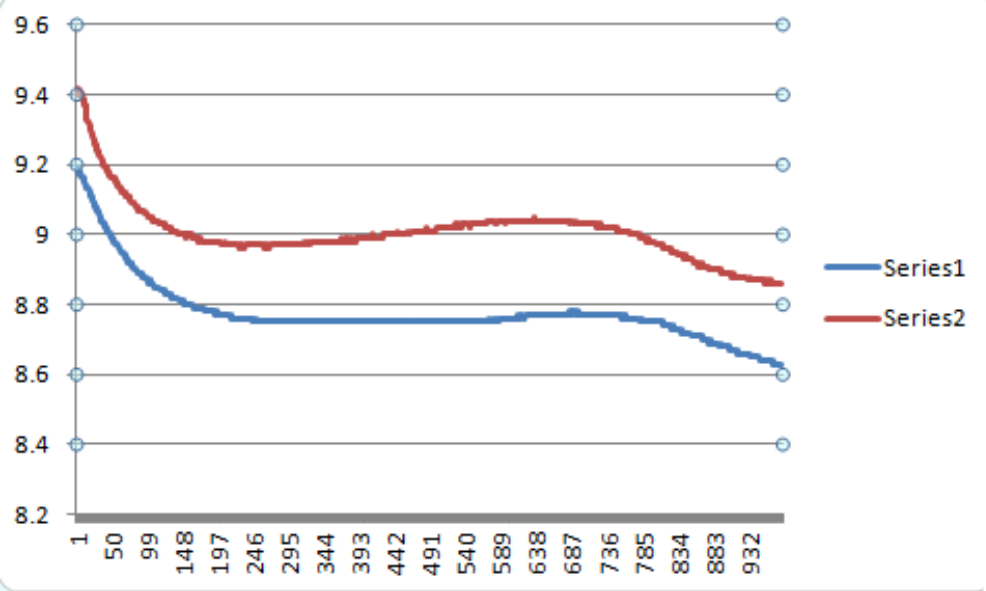
As concerning the claims reported by Flux Innovation LLC, shortfall number 1 is overcome by a highly reproducible experimental protocol developed by Chad White, MS (founder of Flux Innovation LLC) that consistently produces significant quantities of excess heat energy at a low failure rate consistent with human error.

In theory, shortfalls 2 through 4 could be naturally circumvented by positing a novel, exotic form of energy that does not rely on cold fusion or any other nuclear effect. For example, if scientists are trying to *force* fusion to occur where there is little or no nuclear effect occurring—only occasionally stumbling upon an uncharacterized exotic form of energy, then the low reproducibility scientists have grappled with could be explained. For example, the poorly understood nature of dark energy, vacuum energy, zero-point energy, etc., could result in unpredicted manifestations of exotic forms of energy that manifest as anomalous, excess heat.

Conversely, because no attempt has been thus far made to search for fusion products for this particular experiment, the rather large array of elements (absent deuterium, palladium and nickel) employed in this reaction (including rare metals currently posited to be acting as catalysts) cannot be ruled out as participants in some poorly understood nuclear effect.

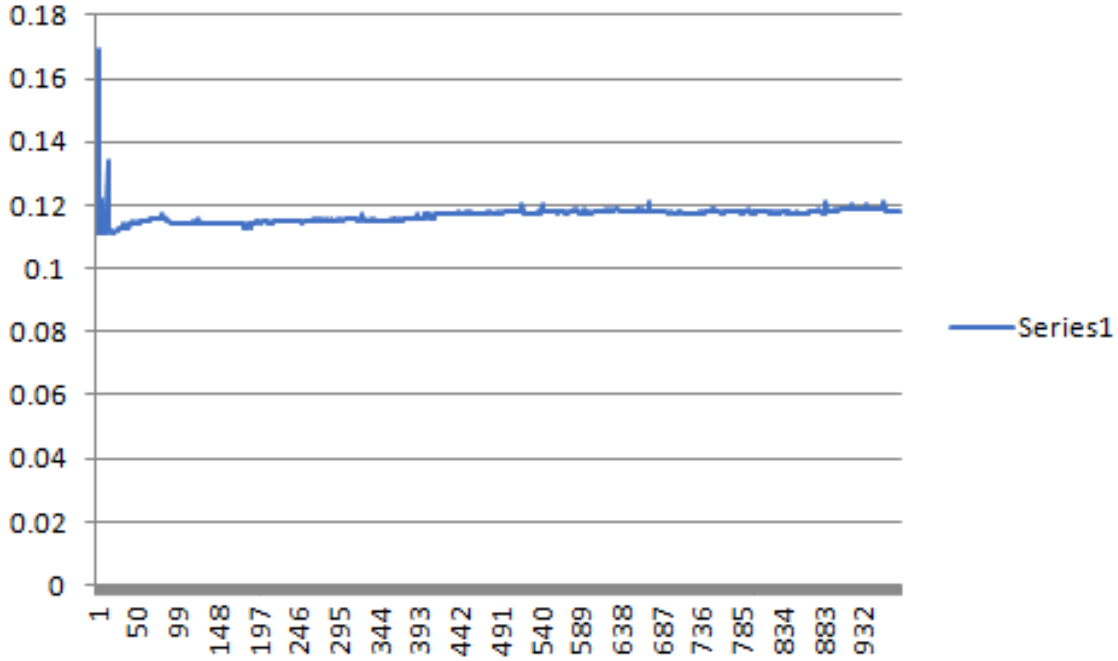
It should be noted that the production of anomalous heat has been sustained for as long as four weeks with no significant change in the percentage of excess heat produced by the Test-Cell. However, as concerning the following data, technical difficulties involving the logging electronics prevented the data from being collected over a longer duration.

Graph 1: Anomalous heat temperature readings. Note that lower thermistor values correspond to higher temperatures.



Graph 1: The X axis is time in minutes. The Y axis is kohm values obtained from data loggers utilizing well matched, 10 kohm NTC thermistors of the same make and model for both the Test-Cell and the Control-Cell. The red line (Series 2…the Control-Cell) is artificially heated throughout the experiment by running a constant DC voltage through an immersion heater consisting of a 10 ohm resistor. The Test-Cell also contains an identical but inactive resistor-based immersion heater to make the two cells as close to identical as practical. The fluctuations in temperature for both Series 1 and 2 are due to changes in ambient temperature.

Graph 2: Current fluctuations of the Test-Cell purporting anomalous heat.



Graph 2: The above figure represents the only electrical energy input variable that exhibits fluctuations in magnitude throughout the course of the experiment (all other current and volt values for both the Test-Cell and the artificially resistor-heated Control-Cell remained constant throughout the entire experiment). The initial

current spike observable toward the beginning of Graph 2 is likely the reason that the Test-Cell starts slightly warmer than the resistor-warmed Control-Cell. This initial current spike results from the time required for the Test-Cell to reach an equilibrium current. Graph 2 also shows much smaller fluctuations in current that occur periodically throughout the duration of the experiment that result from the sensitivity of the system to being even lightly jostled or perturbed. For example, even careful attempts to measure voltage across the electrodes to ensure that voltage values match when re-verified with a second meter caused slight perturbances of the electrodes and/or electrolyte that manifest as small and transient current spikes.

According to the Excel document from whence the above graphs were generated, the average current input over the entire course of the experiment was .117 amps for the Test-Cell (Graph 2). Because the Test-Cell voltage was set constant at 1.52 V throughout the entire duration of the experiment, the average wattage can be calculated as 1.52 V X .117 A = .178 Watts for the Test-Cell (Graph 1, Series 1, blue line). Similarly, the electrical input of the 10 ohm immersion resistor used to artificially heat the Control-Cell was not adjusted in voltage throughout this experiment (nor was the Control-Cell susceptible to even small current value perturbations due to being physically perturbed). Therefore, both the current and voltage remained constant for the Control-Cell throughout the duration of the experiment. The Control-Cell power input was (1.54 V X .153 A= .236 Watts) for the duration of the experiment. This means that the resistor warmed Control-Cell received an energy input of 133 percent (.236 W /.178 W X 100%= 133%) relative the Test-Cell. Even so, the Test-Cell remained significantly warmer throughout the duration of the experiment, thus demonstrating the production of excess heat. One consequence of the Control-Cell being set lower in temperature than that of the Test-Cell is that the figure previously cited of 133 percent is artificially low. This is true because the immersion, resistor-heated Control-Cell voltage would normally be adjusted to match the temperature of the Test-Cell, thus allowing for a more accurate estimate of the value of anomalous heat production by the Test-Cell. The purpose in opting to leave the voltage of the 10 ohm immersion resistor constant for this particular experiment, rather than increasing the voltage of the immersion resistor to match the temperature of the Test-Cell, was to simplify the data and its associated variables as relating to the documentation of excess heat, thus making claims of excess heat harder to dismiss or misunderstand. Matching the temperature of the two cells, as is normally done, produces about 142 percent (+/- 5 percentage points) excess heat produced by the Test-Cell relative to the resistor-heated, but otherwise identical, Control-Cell.

More rarely, excess heat values of approximately 162 percent (+/- 5 percentage points) are attained. Interestingly, values near the mean of 142 percent and 162 percent have never been observed, perhaps indicating different reaction dynamics for the two values while likely following the same fundamental mechanism of excess heat production. One of the more likely possibilities for this discrepancy in the magnitude of excess heat is the procurement of various materials such as catalysts, reagents, and electrodes from

different suppliers. If differing suppliers of materials are indeed the cause of the discrepancy, this issue should not be difficult to remedy by purchasing materials from the most appropriate suppliers. If this scenario plays out, excess heat of approximately 162 percent could become the norm.

Initial Offer to Well-Qualified Investors

Well-qualified, reputable investors and venture capital firms, upon signing legally binding non-compete, non-disclosure agreements, will be provided with the following:

- Prospective investors will receive detailed protocol containing all information required for independent duplication of excess heat.
- Prospective investors will receive hands-on training involving proper execution of the protocol necessary to produce excess heat consistently and independently.

Prospective investors will be required to pay their own travel, lodging and any other related costs associated with meeting(s) with Flux Innovation LLC (located in Layton, Utah...about a 30-minute drive north of SLC International Airport). Conversely, although not ideal due to the inconvenience of shipping all materials necessary for a de novo demonstration of excess heat energy, Flux Innovation LLC may be willing to travel to prospective investors' locations, assuming the prospective investor(s) are willing to pay for travel, lodging, shipping, transportation, and any other associated costs incurred by Flux Innovation LLC. Besides travel related costs mentioned above, prospective investor(s) pay nothing for the demonstrations, protocol, and hands-on training referenced above. Prospective investor(s) that accept the above outlined offer bear no obligation to invest funds in Flux Innovation LLC.

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