Controversial energy-generating system lacking credibility (w/ video)

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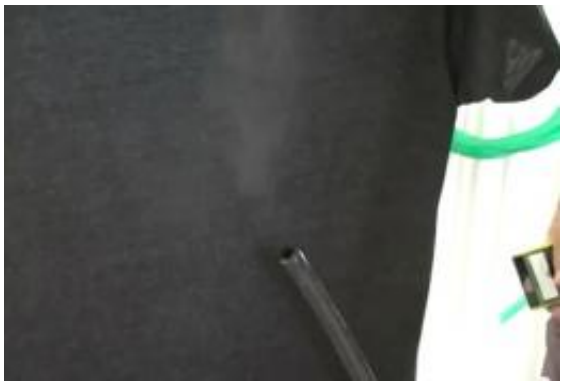

One of the biggest concerns with the device is if all the water entering the system has vaporized into pure dry steam. Image from video below. Credit: New Energy Times

(PhysOrg.com) -- It's been seven months since Italian physicists Andrea Rossi and Sergio Focardi publicly demonstrated a device that they claimed could generate large amounts of excess heat through some kind of low-energy nuclear reaction (LENR). (Previous descriptions of the process as "cold fusion" are incorrect; although the process is not completely understood, it is likely a weak interaction involving neutrons, without fusion.) The physicists call this device the Energy Catalyzer, or E-Cat. Due to the major potential impact such a device could have for energy production, the scientists have received visits and inquiries from all over the world, but so far the claims seem to be lacking credibility.

One of the visitors to Rossi's lab was Steven Krivit, editor of the online magazine New Energy Times. Krivit has been following LENR news for more than 10 years, and recently published a 200-page issue devoted exclusively to examining the Rossi claim. Based on his investigation, Krivit has concluded that the Rossi group's energy claim of extraordinarily large amounts of excess heat has no scientific support, and that he "can't help but wonder whether Rossi is pulling a scam." Some highlights of his comprehensive report, which is freely available here, are highlighted below.

Steam or water

Rossi based his assertions of excess heat on the nearly complete vaporization of room-temperature water (26.5 °C [79.7 °F]) into dry steam (100.1 °C [212.2 °F]). Rossi assumed that all of the water that enters the device leaves the device as dry steam. If this were true, the device would produce lots of energy since a large amount of energy is required to vaporize water into dry steam. (In his 2010 paper, Rossi originally claimed to produce 213 times more energy going out of the device than the energy coming in. Since then he has lowered his estimates several times, and now claims a maximum energy gain of 6 times.)

However, if the steam contains any liquid water droplets - even tiny ones - it would significantly reduce the amount of heat being produced. During his visit, Krivit found that Rossi did not check for complete vaporization. The hose through which the output steam flows was inserted into a sink drain, and there was no way to know if liquid water is going down the drain. According to Krivit, Rossi did not use any valid devices that were capable of measuring the steam quality.

Further, three scientists calculated that, based on the diameter of the hose, the steam should have an exit velocity of 67, 76, or 137 mph. When Krivit visited Rossi, he took a video of the steam exiting the hose, which he said appears to be flowing at around 10 mph - the expected velocity due to the amount of electrical input energy.

Unscientific method

In addition to not correctly analyzing the output steam, Rossi's group also neglected several other practices that would have given their work

credibility. For example, they did not measure the heat output directly, but simply measured the temperature inside the device itself. Also, they did not run control experiments and ignored suggestions given to them by experts in the LENR field. They also have said that they've lost some data, and refused to show Krivit the data they had. When Krivit asked Giuseppe Levi, a physics professor at the University of Bologna who has been checking Rossi's work, for data, he had a surprising response:

"People will start to make any kind of funny analysis on it, and then I will have to answer this funny analysis…If you don't want to trust these numbers, don't trust them! It's very simple."

When Krivit asked about the credibility of data that Levi had previously reported to the Swedish newspaper Ny Teknik, Levi said the following:

"There is no credibility as scientific paper credibility. If you trust me, this is what I have seen with my best effort. Also, I was really conservative."

Moving forward

Despite these flaws, Rossi thinks there still seems to be a future for the system. He has claimed that he has devices operating in the US and Italy, but has not shown them to Krivit or others interested in his work. He claims that he has 300 devices working in his factory in Miami, Florida, but the registered principal place of business is a fifth floor apartment. Rossi has also claimed that he has been heating a factory in Bondeno, Italy, with one of his devices, but has not shown it to anyone.

For the past several months, Rossi has been highly promoting the demonstration of a 1 MW device scheduled for this October at Defkalion Green Technologies in Greece. However, on August 7 he canceled that contract when Defkalion failed to make its first progress payment a week earlier.

Although Rossi has repeatedly said that he is not asking anybody for money until the devices are operating successfully, according to Krivit, Rossi is asking for $15 million from anybody who wishes to independently test his device. The money would be held in an escrow account contingent on the successful validation.

On July 14, Rossi met with NASA researchers at the Marshall Space Flight Center in Huntsville, Alabama. The meeting organizer, Michael A. Nelson, is a systems engineer who has worked at NASA for 30 years in the main propulsion group for the space shuttle as well as with the launch monitoring systems. Nelson told Krivit that he was interested in the possibility of LENR research at NASA, and that NASA would be willing to perform validation tests for Rossi if Rossi pays for the tests. NASA is interested in LENR for potential space applications.

"LENR is another avenue. It's not just about Rossi," Nelson told Krivit. "If the Rossi thing doesn't happen, then maybe something else will. Rossi has brought a lot of attention to the field. Any researchers who have a legitimate claim are going to benefit from this."

More information: New Energy Times 37th issue and Rossi's Scientific Failure in Seven Steps