

Celani Working Cell Demo in U.S. and Korea

Frank Gordon

One of the many highlights of ICCF17 in Daejeon, Korea was the demonstration of a working cell by Dr. Francesco Celani from the Frascati National Laboratory in Italy. This was the second significant demonstration of Dr. Celani's cell on two continents within two weeks. The cell was first demonstrated at NIWeek, the annual graphical system design conference hosted by National Instruments, held August 6-9 in Austin, Texas, attended by more than 3,500 people. The cell and the National Instruments instrumentation suite were then shipped to Korea, where it was again successfully demonstrated from August 14-17 at ICCF17.

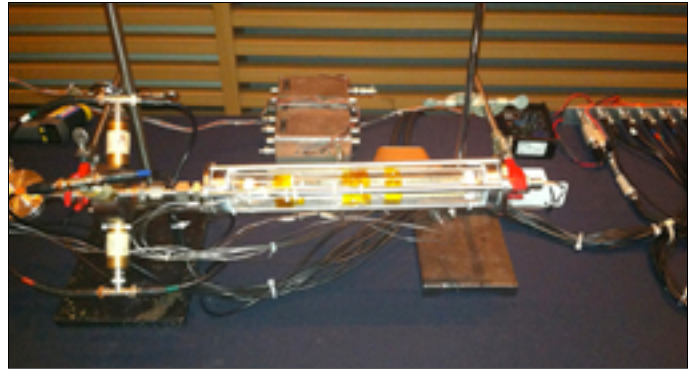
Celani's cell uses a specially prepared constantan wire inside a pressurized hydrogen gas environment. In both demonstrations, it was necessary to load the cell with hydrogen off-site since gas cylinders were not allowed in the convention centers where the demonstrations were conducted. The short time schedules and conference limitations also prevented on-site calibrations, but the performance profiles matched results collected in Celani's laboratory before the cell was shipped to the conferences.

In all tests, the input power was held constant at 48 watts and cell temperature stabilized. After about two hours, the temperature started to gradually increase for the next 12 hours and then continued a slower increase for the duration of the test. This behavior was observed during testing in Italy and the demonstrations in Texas and Korea. It is also similar to results observed by Akito Takahashi and Akira Kitamura when they studied a similar compound (N16-Cu)35%-(ZrO₂)65%. Additional data analysis is being conducted to more accurately determine output. Following the demonstration at ICCF17, Celani returned to his laboratory where he is conducting additional testing and third party independent testing is planned.

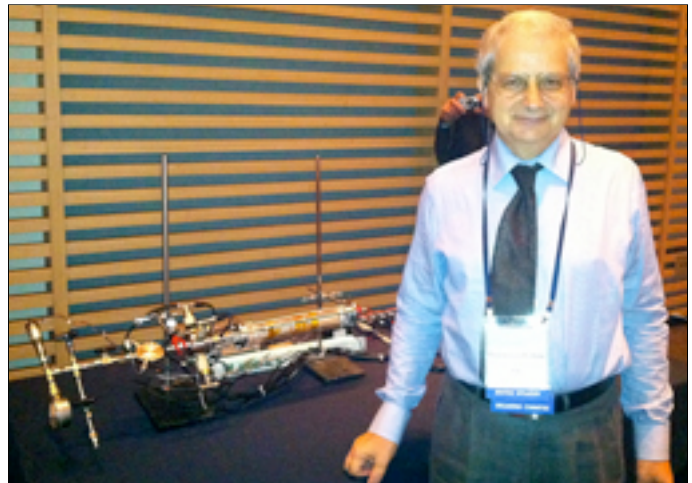
Prof. Peter Hagelstein is of the opinion that this experi-

ment is very significant, probably more significant than Celani thinks: "The reason for this is that Celani uses a nickel alloy that appears to have higher hydrogen solubility than nickel alone so that there can be a useful optical phonon mode. If my understanding is correct, this suggests that Celani's device may be able to run without significant transmutation (which remains to be determined)."

Dr. Celani, who has used LabVIEW for a number of years, said, "The LabVIEW and PXI data acquisition system provided by National Instruments was critical to the ability to quickly set up the experiment at both NIWeek and ICCF17. It also provided the flexibility to simultaneously measure and display the data in several formats and will be used for future testing."



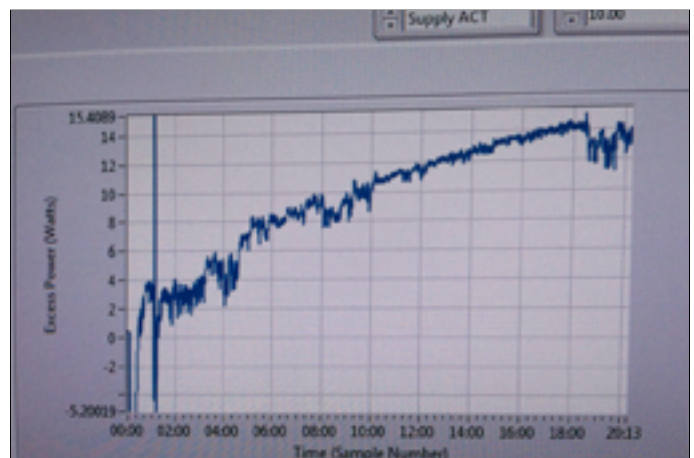
Celani's NiCuMoH device at ICCF17. (Photo by Larry Forsley)



Celani with working cell at ICCF17. (Photo by Larry Forsley)



Celani charging the reactor with hydrogen at LettsLab in Austin, Texas, before NIWeek demo. (Photo by Dennis Letts)



Celani's NiCuMoH device output ICCF17, using National Instruments' LabVIEW. (Photo by Larry Forsley)