

High temperature and high pressure plasma electrolysis experiments

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Ohmori et al. (1), then Mizuno et al. (2,3) showed in high voltage-high current electrolysis experiments the production of excess heat and abnormal production of hydrogen. Cirillo et al. (4) have shown transmutation of elements on the tungsten cathode during similar types of plasma electrolysis. Also, Fauvarque et al. (5) have shown the production of excess heat. All these experiments have been performed with light water at boiling temperature i.e. 100°C and atmospheric pressure. We have developed a new calorimeter that can operate at higher temperatures and higher pressures. The cell is of cylindrical shape made of Teflon 10 cm in diameter and 21 cm high. The cell is positioned on a balance in order to measure continuously the weight loss of the cell during operation. The tungsten cathode of various diameters is located at the center of the cell, and the anode is a stainless steel foil surrounding the cathode. A mechanical pressure gauge permits the measurement of the pressure of the cell. The temperature is calculated from the pressure-temperature boiling curve. A calibrated relief valve keeps the pressure constant in the cell. The electrical input power is measured by a high-speed wattmeter, and the heat produced is calculated from the weight loss of the cell. The cell is also equipped with a resistor for calibration of the system, and heating the water to boiling prior to the start of the electrolysis.

At the conference we will give the new results showing the influence of the pressure and the temperature to the excess heat.

[1] Ohmori, T. and T. Mizuno; “Strong excess energy evolution, new element production, and electromagnetic wave and/or neutron emission in the light water electrolysis with a Tungsten cathode”; in 7th International Conference on Cold Fusion (Vancouver, Canada; ENECO Inc., Salt Lake City, UT, 1998

[2] Mizuno T., T. Ohmori, and T. Akimoto; “Generation of Heat and Products During Plasma Electrolysis”; in 10th International Conference on Cold Fusion. 2003. Cambridge, MA

[3] Mizuno T., Y. Aoki, D. Y. Chung and F; Sesftel; “Generation of heat and products during plasma electrolysis”; in 11th International Conference on Cold Fusion, 2004, Marseilles, France

[4] Cirillo D., A. Dattilo and V. Iorio; “Transmutation of metal at low energy in a confined plasma in water”; in proceedings of the Eleventh International Conference on Cold Fusion, 2004, Marseilles, France

[5] Fauvarque J. F. , P. P. Clauzon, G. J.-M. Lallevé, G. Le Buzit; “Abnormal excess heat observed during Mizuno-type experiments”; in 12th International Conference on Condensed Matter Nuclear Science, 2005, Yokohama, Japan.