# A Multi-resonant Orthogonal Electrolytic (MOE) Cell

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We have established experimentally that cell EMF equalization rates and cell chemistry should not be affected by changing the electrolyte flow direction from longitudinal, as in the Patterson Power Cell (PPC), to a direction orthogonal to electrolytic current flow. Provided electrolyte flow is upward, an orthogonal electrolytic cell should work as well as the longitudinal flow PPC. It is superior in that the H2 and O2 can be obtained from separate degassing stations, and thus it is possible to avoid recombination, avoid explosion risks, and possible to utilize the evolved gasses later in a fuel cell or by other means. In an orthogonal cell it is also possible to combine many simultaneous forms of stimulation into a single multi-resonant electrolytic cell design.

Assume two vertical electrodes with a gas barrier between, and vertical (y axis) fluid flow, and horizontal (x axis) electrolytic current flow. It is then possible to place a major magnetic field B in the z axis direction. This has several advantages:

(1) MHD forces will move the electrolyte so no pump is needed. This permits a much higher electrolysis current with the same efficiency because it is doing triple duty doing electrolysis and acting as two pumps, one for O2 bearing and one for H2 bearing electrolyte. As a bonus, there are no moving parts.

(2) There is still room for a small perturbing magnetic field generation in the x direction, thus it is possible to stimulate the protons or deuterons with an NMR resonant frequency. This will put the protons in a continual state of precession and flipping. At very least this proton motion stimulation should increase adsorption rates. At best it may assist in phase locking deuterons or protons interacting at lattice site boundaries and in the fluid phase of the cell, permitting other forms of stimulation to trigger fusion events. In addition, should an energetic electron "fall into" the coulomb well, an interaction with the magnetic field of the flipping nucleus should increase the probability of an energetic photon emission, thus temporarily binding the electron to the nucleus until it can sap enough energy from the ZPE sea to climb back out. This series of events, as described in the Partial Orbital Hypothesis of Cold Fusion, would transfer energy from the ZPE sea to the lattice as heat. This process would be assisted by alloying particle emitters, especially beta emitters, into the cathode.

(3) Storms' paper "Critical Review of the "Cold Fusion" Effect", March 1, 1996, page

42 mentions 82 MHz RF signals and high current micro-pulses (through the cathode) as being heat enhancing stimuli. For this reason, it may be desirable to combine the 82 MHz signal superimposed on the electrolytic potential with the NMR perturbing magnetic force generating current, thus the NMR resonant frequency should be 82 MHz. This means, for light water (proton) applications, that B must be 1.9524 weber/meter^2. Then the NMR perturbing field coil can be excited by the same 82.0 MHz current that is superimposed on the DC electrolytic current, making the AC portion of the electrolytic current do double duty, once as an electrode/interface stimulator, and second as an NMR perturbing field generator.

(4) The electrolytic cell has it's own innate capacitance which is controllable through choice of electrode geometry and electrolyte chemical composition. It should be possible to design the cell so, used with additional inductance, tuning and control circuitry, it will resonate at 82 MHz.

(5) The 82 MHz electrolyte stimulation signal will also make protons in the solution oscillate up and down in the y direction, generating accousic vibrations in the cell. The dimensions and geometry of the electrolytic fluid containing walls of the cell can be adjusted to create an acoustically resonant environment. Also, electrode geometry and surface geometry may be designed to reflect and/or utilize this ultrasound to aid in adsorption or other desired effects.

Such an electrolytic cell would therefore clearly be multiply resonant. In addition to gaining large effect with small input by utilizing resonance, the proposed design gains efficiency by utilizing a single electric waveform to drive all of the cell functions and stimulate all of the cell's resonances.