

DISCOVERY OF MACROCATIONIC CRYSTALLINE H₂O CAVITATION REENTRANT JETS & THEIR ROLE IN CAVITATION ZERO POINT ENERGY, FUSION & THE ORIGIN OF LIFE

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Abstract. Macrocationic, crystallized cavitation reentrant jets were first observed during investigation of directed cavitation reentrant jet nano and micro-machining in water by the author in 2004 in Buxton, ME, on grants funded by the Maine Technology Institute. I again observed the same behavior in 2005 on work funded by the New York State Energy Research and Development Authority as PI, with co-investigators Serge Lebid, EVP NanoSpire, Inc., Prof. Eric Eisenbraun of Albany Nanotech, and others. The extreme pressure and temperature of cavitation bubble collapse was compressing dissociated water H⁺ and OH⁻ ions at the bubble interface into solid, faceted macrocationic crystals possessing an equilateral triangle crystalline subunit. Reentrant jet impacts formed pit cross-sections that were equilateral triangles, regular or oval-shaped hexagons, twinned crystals such as hourglasses, or hybrids of triangles and hexagons. The presentation will provide an overview of data and theories addressing the structure and dynamics of crystallized cavitation reentrant jets in coherently extracting zero point energy, triggering fusion and driving prebiotic chemistry.

The cavitation reentrant jet crystal has enormous positive electrostatic charge concentration and induces a negative charge on the surface of any nearby object. Electrostatic attraction then draws the positive crystal towards its negative induced charge on a nearby surface and imbeds the crystal with great force, imprinting a fossil image of the crystal's facets in a wide variety of materials. The crystalline structure presents a concentrated number of protons on the surface giving it a very low pH. Bright red hexagon jet impact pits in green litmus and purple hexagon pits in orange litmus all indicated zero pH. The crystal is short-lived, typically persisting for a few microseconds in water, isolated by a super-cavitating water vapor column. The crystals can form linear or helical strands, with large bacteriophage-like icosahedral hexagonal heads and long narrow whip tails and can join head to toe, forming coils that can also supercoil, like DNA. A new diamond-like tetrahedral SP³ orbital structure is proposed, based on the crystal's subunit equilateral triangular structure and dissociated water composition. The proposed molecular structure makes the crystal twice as strong as a diamond and up to 5.5 times denser than ordinary water. Sinusoidal reentrant jet buckling data used with the Euler equation indicates that the crystal is ten times stiffer than tungsten.

The cavitation reentrant jet water crystal plays a central role in coherently extracting zero point energy via the LeClair Effect, which triggered intense fusion, fission and transmutation in water during grant funded landmark experiments conducted August 24-25, 2009 in Buxton, ME by Mark L. LeClair and Serge Lebid of NanoSpire, Inc., that produced 2900 watts of hot water flow from 840 watts of electrical input. The transmuted material has been analyzed by SEM-EDAX, XPS and LA-ICP-MS, revealing that the transmuted material was generated by small scale supernova nucleosynthesis forming on the supersonic bow shock surrounding the crystal. Seventy-eight elements were detected, along with short-lived isotopes.

Crystallized cavitation reentrant jets are also the template for the origin of life. Observed large scale cavitation nucleosynthesis seriously challenges the paradigm that supernovas were the primary providers of the building blocks of life. I presented my theory to the NASA Astrobiology Institute in 2001 that cavitation reentrant jets generated by the underwater wake of asteroid and comet ejecta impacting into oceans and lakes during the primordial bombardment generated life. Cavitation was also generated from volcanic eruptions, lightning strikes, wave action and other natural phenomena. Helical cavitation reentrant jets act are exact geometric and molecular templates for the assembly of DNA, RNA and protein. The correct size protein, RNA and DNA reentrant jet templates only form within the same submicron size range where cavitation induces and accelerates unusual chemical reactions. The crystals can join head to toe, just as RNA and DNA 3' and 5' ends do, forming helical coils that can be relaxed, or twist and writhe into supercoils. The discovery of the crystal and its effects will have a dramatic impact on the physics, chemistry and biology of water. Please address all correspondence to: Mark L. LeClair, 25 Jesse Daniel Drive, Buxton, ME 04093, phone: 207-929-6226, e-mail: mleclair@nanospireinc.com