

Executive Summary

PLASMAK™ Technology: The PMK

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The **PLASMAK™** plasma (PMK), and related inventive concepts of Paul M. Koloc, pertain to the field of energetic physics. This area of technology is generally not well known to the business community, primarily because it has spawned relatively few commercial developments. Yet, it is well known that plasma physics holds the key to the ultimate energy source — safe, pollution-free fusion energy. These inventions are believed to constitute a truly revolutionary breakthrough in this area.

Although revolutionary and complex from a mathematical point of view, Paul M. Koloc's inventions are most remarkable because of the amazingly simple and straightforward solutions that he has discovered to some very difficult scientific and engineering problems. In essence, his inventions explain how to generate a kind of electromagnetic bubble in an atmosphere of air or another gas. This electromagnetic plasma bubble, called the **PLASMAK™** plasma (PMK), is believed to be structurally equivalent to naturally occurring ball lightning, a phenomenon that is often observed but has not previously been explained or replicated. This relationship to a natural phenomenon may explain why the PMK, while complex mathematically and theoretically, is easy to generate relative to other types of electromagnetic configurations. In this sense, the electromagnetic PMK is analogous to a soap bubble. Soap bubbles exist in nature and are easy to generate, but mathematically and scientifically they are rather difficult to explain.

In essence, the PMK contains at its core a plasma current that has far greater stability and lifetime than any other energetic plasma produced to date. Furthermore, the density of this plasma current is substantially higher than any other experimentally produced plasma, while its size, composition and purity can be controlled relatively easily. The most amazing aspect of the PMK, however, is that the electromagnetic bubble configuration creates a leveraged interface between the surrounding

atmosphere and the central plasma current. This interface is unique to the PMK. Consequently, other than the PMK, there is no known stable plasma configuration that can be compressed directly by a mechanical pressure, such as the pressure of a surrounding blanket. The significance of this factor is that the stable PMK is the only known high-energy plasma configuration that can easily be compressed using existing mechanical equipment to the pressures and densities necessary to trigger a controlled fusion reaction. Before the invention of the PMK, it was not possible to generate the combination of density and stability necessary to produce a fusion reaction of any practical significance.

For nearly half a century, scientists around the world have tried to create a break-even fusion reaction as a first step toward commercial power generation. All past efforts have failed because no one was previously able to obtain a plasma of sufficient density and stability to initiate a fusion reaction. Furthermore, the experimental devices built in an effort to produce fusion reactions were so complex that even if breakeven fusion had been generated, commercial utility was impossible. The PMK appears to be the solution to all of these problems. The sustained density and stability of the plasma are far beyond anything known in the past. The ability to rely upon mechanical, rather than coil driven magnetic pressure, to compress the central plasma allows pressures far beyond anything previously available to be attained at very low cost and with relatively simple equipment. Furthermore, the severe engineering problems that rendered past technologies impractical for power generation appear to have been eliminated in the PMK technology.

While the PMK technology appears useful for a number of purposes including welding, propulsion, and energy projection, its commercial potential as the key to safe, pollution-free fusion-based commercial power seems most promising.