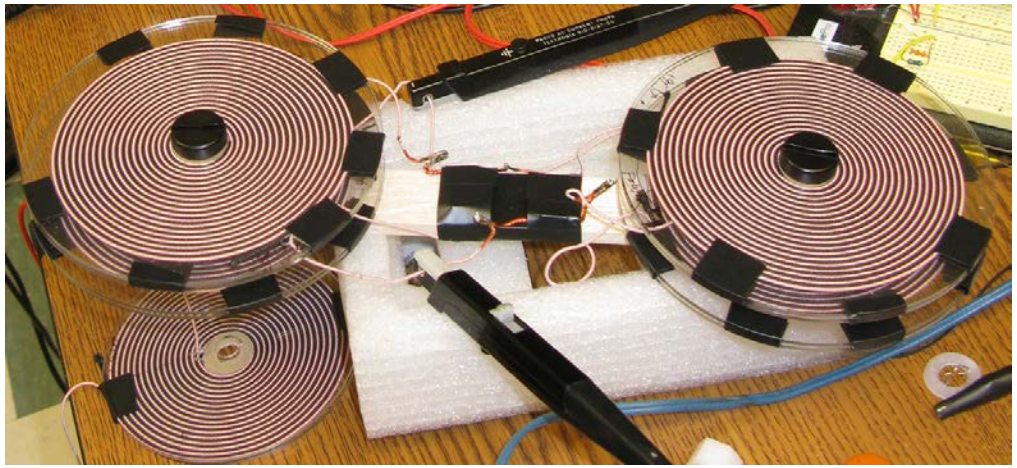
Standing Wave Electromagnetic Propulsion



Two Pairs of Excitation Coils with HV Microwave Capacitors in the Center

Operational Capabilities

Electromagnetic propulsion generates force from electricity without consuming chemical fuel. The force or thrust may be applied continuously and is usable for satellite station-keeping and long-term space missions.

- Performance is measured by total force generation in Newtons (N) and in force per power consumed (N/W).
- High-Q systems are required for practical propulsion systems.
- Components must have very long lifetimes – on the order of 10 to 20 years – for long-term missions.

Technical Approach

- The principle of operation is based on electromagnetic momentum in a system that recirculates power with unequal reaction forces.
- Current systems provide very low force. This is because near-field varying magnetic fields behave mostly like static fields.
- Greater force may be generated in alternate configurations; such as inserting dielectric materials between the coils or by placing excitation elements inside waveguides.
- Force is measured by weight change on a 10µg resolution scale.

Development/Team

- Our team includes principle investigator Scott A. Wilber, serial entrepreneur, 12 issued patents, multiple peer-reviewed papers; and Luis Araujo, Senior Electrical Engineer, programmer.
- Our initial research system has been extensively modeled and high RF excitation currents were produced in various prototypes.
- Additional modeling and experimentation with alternate configurations is required to determine if usable forces can be produced.
- 5 to 50mN is a reasonable minimum target force.

Contact information: Core Invention, Inc; Scott A. Wilber, President and PI; (505) 222-0612, contact@coreinvention.com