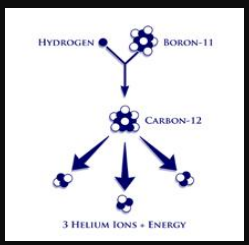
FUSION ENERGY: QUICK SUMMARY OF THE DPF PROCESS & POWER PRODUCTION

1. PLASMOID CREATION – ENERGY COMPRESSION

- **Magnetic energy generated by the currents flowing from a capacitor in the DPF device is compressed into the plasmoid through the "pinch effect".**
- **Through this compression, magnetic energy is converted into the energy of motion (kinetic energy) of the plasma.**
- **As the plasmoid reaches full compression, the viscosity of the plasma converts some of the bulk kinetic energy of the plasmas into random kinetic energy—heat.**

2. NUCLEAR FUSION REACTION - ENERGY PRODUCTION

- **The heated, rapidly moving protons and boron nuclei in the plasmoid collide with each other, producing fusion reactions. In these reactions, the strong nuclear force releases a large amount of additional energy. This is the fusion energy. It appears as the kinetic energy of the three helium nuclei that result.**



Presentation: http://www.youtube.com/watch?v=jVif4hUAJ8c Inside the DPF "oven": http://www.youtube.com/watch?v=ZgfY_Ig9648

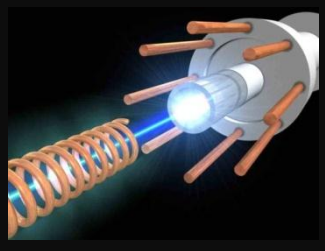
3. ELECTROMAGNETIC COLLISIONS - ENERGY PROPAGATION

- The fast-moving helium nuclei collide electromagnetically (at a distance through their electric forces) with hydrogen protons and boron nuclei, speeding those nuclei up further and making the fusion reaction go faster.
- Nuclei also collide electromagnetically with electrons, accelerating them.

4. X-RAYS & ION BEAM - ENERGY EMISSION

- The accelerated electrons in the plasma, during these collisions with the nuclei, emit x-ray photons, which leave the plasmoid, carrying away some of the electrons' kinetic energy.
- The plasmoid, through its own instabilities, generates a huge electric field which accelerates a beam of electrons and a beam of nuclei—also called ion beam-- in opposite directions.
- The ion beam carries both the magnetic field energy and the thermal, heat, or kinetic energy.
- Most of the electron beam's energy is dissipated in heating the electrons and ions in the plasmoid before the beam can leave the plasmoid.

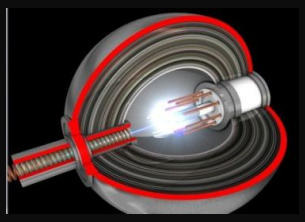
5. ENERGY CAPTURE - CONVERSION TO NET POWER



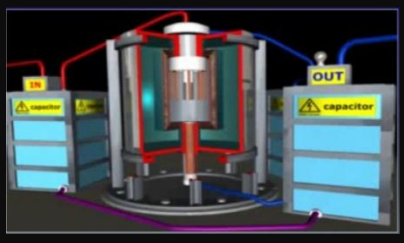
- The ion beam's energy is converted to current in a circuit by passing through a helical coil—a sort of high-tech transformer. The ion beam creates changing magnetic fields that induce currents of electrons in the coil. The current flows to a capacitor—an energy storage device.

Presentation: http://www.youtube.com/watch?v=jVif4hUAJ8c Inside the DPF "oven": http://www.youtube.com/watch?v=ZgfY_Ig9648

- **The x-ray pulse energy is converted to electric energy by a multi-layer onion-shaped photoelectric convertor. The x-ray photons collide with electrons in thin foils, giving the electrons energy which can be collected on grids. This charges a capacitor.**



- **The energy-collecting capacitor recharges with main capacitor bank, so that there is energy for the next pulse, and the excess energy flows out to a DC-AC convertor, which then feeds it into the electric power network.**



***

The plasmoid lasts for only 10 nanoseconds, during which these processes occur. The whole process repeats about 200 times per second in a generator. It all starts in the order presented but then all the processes run concurrently. Each pulse generates about 25 kJ of energy, so the generator will produce about 5 MW of power. Click to see an energy flow chart of the whole process.

***

CHEAP * CLEAN * SAFE
UNLIMITED

FUSION POWERS THE UNIVERSE!

DISCOVER THE FUTURE

Joe Bergeron ©1992

Presentation: http://www.youtube.com/watch?v=jVif4hUAJ8c Inside the DPF "oven": http://www.youtube.com/watch?v=ZgfY_Ig9648