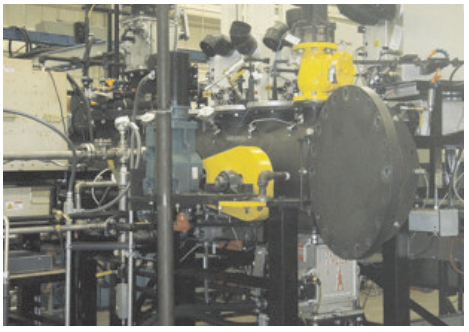
G4 Industries Ltd

Complementary Technologies Portfolio
Pyrolosis Tyre and Waste Processor

Waste tyres are now an acknowledged environmental problem amongst developed and developing nations. G4 Industries holds significant interests in a microwaving technology which can remove tyres from the waste stream whilst breaking these down into valuable commodities. The outputs are all highly re-useable, these comprise of carbon ash, steel, gas and oil. This provides a 15:1 energy output vs. input ratio and the whole process is emission free. A similar process is also available to process sorted landfill waste.

This technology allows a significant reduction in waste matter, focussing on difficult-to-dispose-of, non-biodegradable matter. Whether setup as a series of regional processing facilities or as a larger, centralised national processing 'hub', this technology has the potential to drastically cut waste disposal costs whilst creating new salable commodities and making considerable environmental benefits.

The process involves the waste material being shredded or reduced in size to no larger than 100mm square sections and conveyored to the reactor plant ready for processing. The processing plant (shown above and right) removes the oxygen from the material before releasing this directly into the microwave reactor chamber. The chamber incorporates an internal conveyor which moves the material beneath the microwave heads allowing these to be subjected to measured levels of hydrocarbon-specific RF waves. The hydrocarbons within the material are gasified and a recovery system collects the expanding gas from the reactor chamber for storage and subsequent use. The burnable gases can be utilised to generate electricity on or off site with a turbine generator. The residual solid materials are conveyed from the reactor chamber and the char particulate discharged via a takeaway conveyor. The system is closed-looped throughout the entire process and no emissions of gases are introduced into the atmosphere at anytime. Additionally, the lack of oxygen in the process produces no CO2



Process Outputs:

Carbon Ash - 3Kg Carbon Ash per tyre (saleable industrial commodity)

Steel - 1Kg steel per tyre

Gas - Approx 1.5 cubic metres Natural Gas per tyre

Oil - Approx 4.5 Litres Oil (diesel heating grade) per tyre

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