

Petrochemical Replacement

The pyrolyzation of wood -- and perhaps other bio-materials -- could provide many of the compounds that currently bind us to the petroleum industry.

This would place access to of hydrocarbon compounds into the hands of people who didn't support oil wells or coal mines. It could also move the continued development and supply of hi-tech materials into a renewable and decentralized basis.

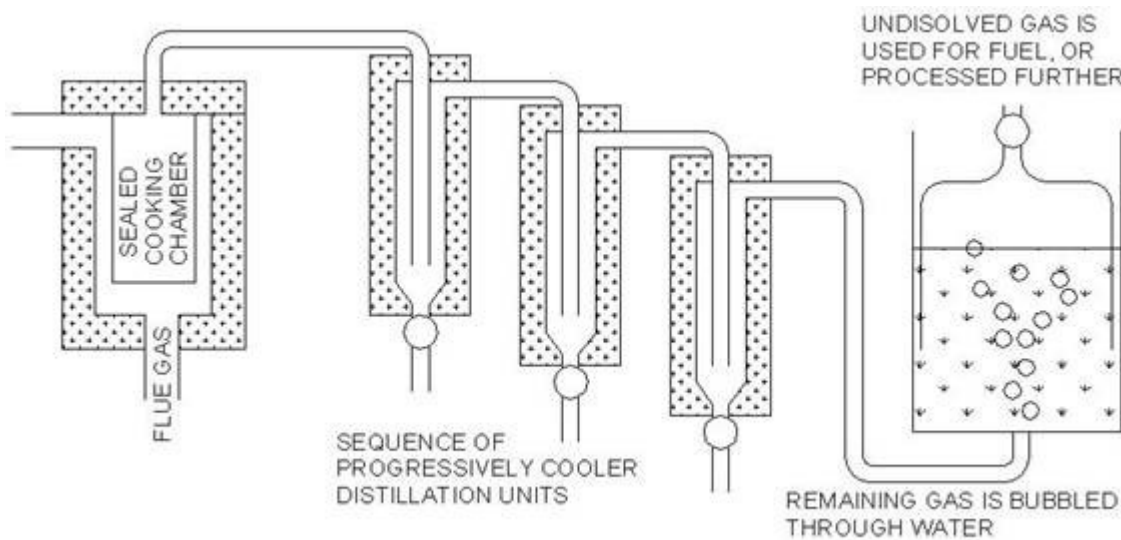
Such an operation would be a lot more complex than many of these projects. The program however, would both support and demand a technically competent community, and could supply key compounds for other communities. Among the simpler products one might expect would be motor fuels, solvents, lamp oils, lubricants, and preservatives for wood.

There have been times of emergency in Europe when vehicles have been fueled by wood smoke, driven out of sealed chambers that were heated by wood or coal fires.

A wide variety of nasty and beneficial compounds can be driven out of wood as it is slowly heated. The trick is to catch them and to sort them out.

The basic apparatus would consist of a sealed batch "cooker", which is followed by a series of progressively cooler still-segments, each with its own catch-vessel.

(1) Exhaust from a clean-burning flame passes through a thermal process chamber and heats a sealed vessel containing biomass (2). The resulting gasses exit



insulated tube

through an

(3), and pass through a series of sequentially cooler distillation modules (4). Each of these modules is maintained at a temperature range selected to distill a specific group of compounds. Finally, any

remaining gasses are bubbled through water and stored in an inverted drum (5) to capture any true gasses, and make the entire operation a zero-emissions process.

The water through which the gas is bubbled would be processed to harvest dissolved compounds. The carbon left behind in the chamber (2) would be a clean solid fuel for cooking and heating, and would be well activated for filtering purposes.