

New process to convert biomass into fuel

Ensyn Technologies Inc., Canada, has developed a novel process to obtain bio-oil from wastes such as woodchips, sawdust, bark, straw, agricultural residues as well as used industrial pallets. The Ensyn process, known as rapid thermal processing (RTP), involves fast pyrolysis – a special way in which heat is applied to produce new and more useful products. In the absence of air, biomass wastes are “zapped” for a fraction of a second by 400°-900°C heat. The chemicals break down into smaller molecules and this mass is rapidly cooled, thus preserving the smaller molecules. This results in two useful by-products, a liquid fuel that can be burned and commercially valuable industrial chemicals that can be recovered and sold.

When burned, the bio-oil produces less CO₂ than petroleum-based fuels. The light and pourable bio-oil is a mixture of oxygenated molecules, unlike petroleum derivatives, which are acidic and contain water. Some benefits of the novel process include:

- It is sulphur-free (no acid rain);
- Has no wastewater stream; and
- Does not contribute to the greenhouse effect.

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