



Production and recovery of biochar for agricultural use, gas cleaning and wastewater treatment

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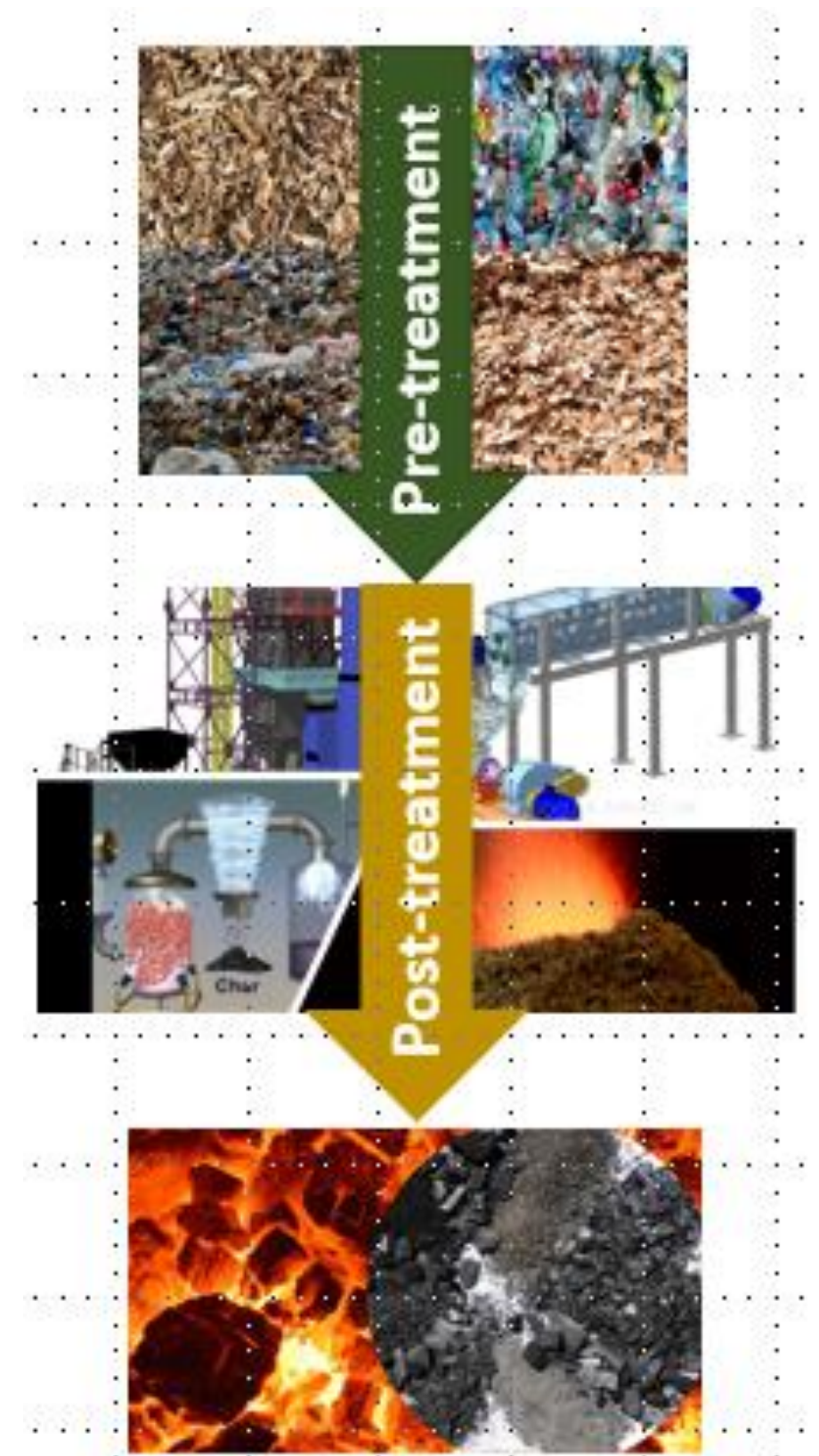
Biochars

Biochar is a by-product from thermochemical processes, namely pyrolysis, torrefaction or thermal gasification.

Different raw materials grant different properties to biochars, thus presenting different performances within each biochar application.

When biochars are produced at high temperatures, e.g., via thermal gasification, it is possible to observe a higher surface areas and higher carbon contents. These characteristics are associated with the increase in the volume of macropores from the removal of VOCs at high temperature, however biochar yield is lower when produced at higher temperatures.

Biochar has pores ranging from micro to nano, with biochars with small pore sizes being obtained from thermal or physical process

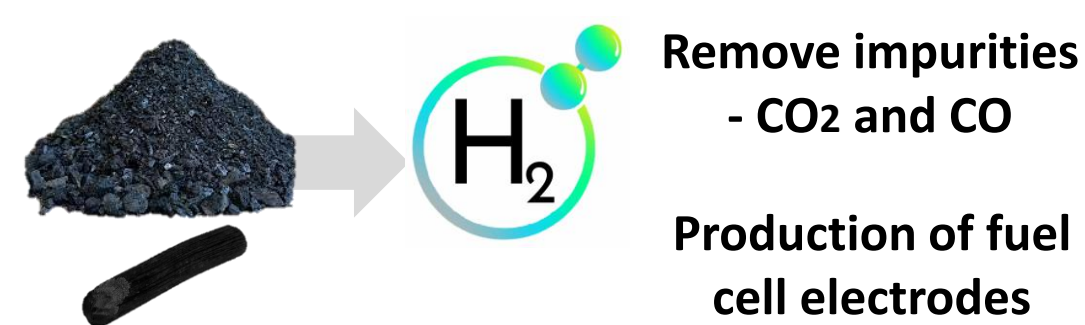


Versatility of biochar

Agriculture



H₂ production



Wastewater treatment



Legal requirements



- Elemental analysis - H/C ratio < 0.7.
- Physical parameters - Water content, dry matter (< 3mm particle size), bulk density (DM), WHC, pH, salt content, electrical conductivity of the solid biochar.
- Organic contaminants - 16 EPA PA: 6±2.4 g t⁻¹ DM; 8 EFSA PAH: 1.0 g t⁻¹ DM; benzo[e]pyrene benzo[j] fluoranthene: < 1.0 g t⁻¹ DM for each of both substances.
- Surface area greater than 150 m²/g.

