

Production of activated carbon from biomass

Autothermal single-stage method of activated biochar producing from biofuels is the combination of carbonization and activation stages. The resulting charcoal has a specific surface area of 350 m²/g and iodine activity to 42%, which corresponds to industrial activated carbon DAK (GOST 6217). The output of activated carbon is 10-20% of the dry fuel weight. The process is periodic, duration is 5–12 hours. Activated carbon cost is 2–3 times less than produced one by classic two-stage technology. If necessary, activated carbon adsorption performance can be increased. Used feedstock for activated carbon production – walnut shell, stone peaches, apricots, plums.

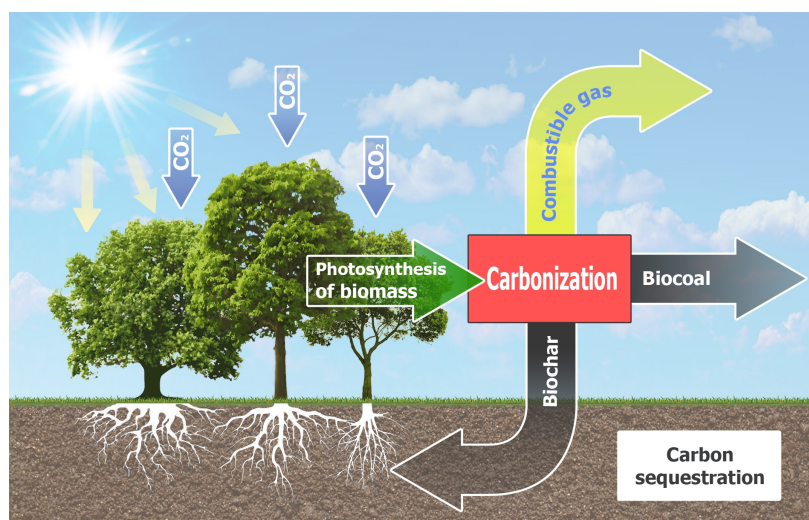
research of activated carbon production from plant stalks and straw, which has a surface area of over 150 m²/g is completed. Activated carbon from plant residues can be used as soil amendment to improve fertility and for long-term carbon sequestration to reduce carbon dioxide in atmosphere.

Currently activated carbon from biomass in Ukraine is not commercially produced.

Stage of the project – an experimental installation. Patent pending. Pilot equipment is designed.



Process visualization



Carbon cycle