

Obtention and characterization of activated carbon from *Platanus acerifolia* via hydrothermal carbonization and physical activation

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Platanus (*Platanus acerifolia*) are ornamental trees widespread in temperate regions, appreciated for their foliage and aesthetic value. Their fruits, however, are known to cause mild health issues such as allergies and respiratory affectations. Since the fruits are abundant and easily collected through municipal cleaning services, its valorization as raw materials of industrial products results of interest. We propose here to use the fruits for the production of activated charcoal, via a hydrothermal carbonization followed by activation under CO₂ atmosphere. A preliminary assessment, using thermogravimetric analysis data, was used to determine an adequate temperature for activation (800 °C). Textural properties, DRX, Raman spectroscopy of the activated charcoal were assessed. Raw materials, intermediates and products were characterized by elemental analysis, IR spectroscopy, and scanning electron microscopy.