

Activated carbon prepared and used as a filter for volatile organic compounds retention

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Abstract: This study aims to investigate the efficiency of activated carbon as a filter for volatile organic compounds. An activated carbon is prepared using a mixture of olive residue and zinc chloride at a temperature of 450 °C. The porosity of the prepared carbon is investigated using N₂ isotherms at -196 °C. Long-range order is studied by X-ray diffraction (XRD). The investigation of the carbon functionalities is carried out by Boehm titration and Fourier transformed infrared spectroscopy (FTIR). The efficiency of the activated carbon elaborated toward cyclohexane is tested using gas chromatography.

Keywords: Olive residue, Activated carbon, Surface functional groups, Adsorption.