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A facile modification method of activated carbon by spark discharge of atmospheric pressure plasma jets to improve its adsorption performance of methylene blue

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## Abstract

In this study, spark discharge of atmospheric pressure plasma jets (SDAPPJs) was employed to modify activated carbon (AC) prepared from coconut shells. The physical and chemical properties of AC were tailored by SDAPPJs treatment to enhance the adsorption performance. The pristine AC and its modified samples were characterized by N<sub>2</sub> isotherms, X-ray photoelectron spectroscopy (XPS), fourier transform infrared spectroscopy (FT-IR) and scanning electron microscopy (SEM) in terms of micro structure, chemical composition, morphology, and etc. The methylene blue (MB) removal capability of these AC samples from aqueous solution was investigated by UV-vis spectrophotometer to determine the influences of the modification on the adsorption performance. The results show that

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