Spontaneous arylation of activated carbon from aminobenzene organic acids as source of diazonium ions in mild conditions

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Résumé en anglais	Activated carbon products modified with benzoic, benzenesulfonic and benzylphosphonic acid groups were prepared by spontaneous reduction of aryldiazonium ions in situ generated in water from the corresponding aminobenzene organic acids without addition of an external acid. Electrochemistry and NMR studies show that the advancement of the diazotization reaction depends both on the acidity and the electronic effect of the organic acid substituent, giving a mixture of diazonium, amine and triazene functionalities. Carbon products prepared by reaction of activated carbon Norit with 4-aminobenzenecarboxylic acid, 4-aminobenzenesulfonic acid and (4-aminobenzyl)phosphonic acid were analyzed by chemical elemental analysis and X-ray photoelectron spectroscopy experiments. Results show that this strategy is well suited for the chemical functionalization, giving a maximized grafting yield due to a chemical cooperation of amine and diazonium functionalities. (c) 2012 Elsevier Ltd. All rights reserved.
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