

Production of activated carbons from coffee endocarp by CO₂ and steam activation

João M. Valente Nabais^{a,*}, Pedro Nunes^a, Peter J.M. Carrota^a,
M. Manuela L. Ribeiro Carrota^a, A. Macías García^b, M.A. Díaz-Díez^b

^aCentro de Química de Évora and Departamento de Química, Universidade de Évora, Rua Romão Ramalho no. 59, 7000-671 Évora, Portugal

^bUniversidad de Extremadura, Avda. de Elvas, s/n 06071 Badajoz, Spain

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In this work the use of coffee endocarp as precursor for the production of activated carbons by steam and CO₂ was studied. Activation by both methods produces activated carbons with small external areas and microporous structures having very similar mean pore widths. The activation produces mainly primary micropores and only a small volume of larger micropores. The CO₂ activation leads to samples with higher BET surface areas and pore volumes when compared with samples produced by steam activation and with similar burn-off value. All the activated carbons produced have basic characteristics with point of zero charge between 10 and 12. By FTIR it was possible to identify the formation on the activated carbon's surface of several functional groups, namely ether, quinones, lactones, ketones, hydroxyls (free and phenol); pyrones and Si-H bonds.

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