Texture of Active Carbons

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The systematic study of the behaviour of several vegetal raw materials shows that the initial texture remains largely preserved through the carbonization process as evidenced by the experimental results obtained by electron microscopy.

These findings are in good agreement with the well known active carbon final properties dependance from the starting raw material.

It was shown recently (1) that the carbonization process, up to 735 K, of beechwood is characterized by a wall thinning of vessels and of the fibres and by an overall shrinkage phenomenon.

This process does not create new pore types in the meso and macroporosity range and moreover retains upon carbonization the wood morphology.

We have observed, on the basis of E.S.M. investigation, that the structural organization of the original natural raw materials is fairly well remaining after carbonization up to 1173 K and is still there if an activation process has taken place, at last in the case of coconut, pine wood and beechwood which were investigated (fig. 1) . A few observations on other raw materials indicate that this process seems to be rather general.

Reference

1. P. Ehrburger, J. Lahaye, E. Wozniak, Carbon 20, 433-439 (1982)

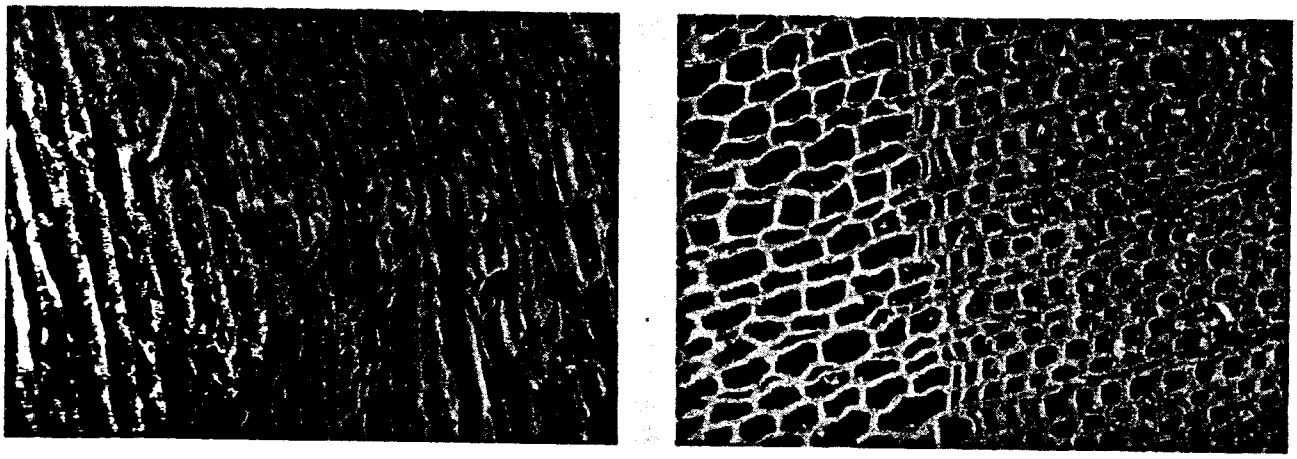

Figure 1. Pinewood carbonized up to 1173 K under N_2