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Synthesis and characterization of activated carbon from asphalt

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Abstract: Asphalt (cheap and available in huge amount in Jordan) was converted into activated carbon powder by chemical treatment with sulphuric and nitric acids at 450 8C. The final product was characterized and found effective as adsorbent material. Its cation exchange capacity reaches 191.2 meq/100-g carbons when treated with 30 wt% acid/asphalt ratio without airflow rate injection and 208 meq/100-g carbons when 6.5 ml air/ min was injected into the surface of the asphalt during activation at the same acid/asphalt weight ratio of 30 and temperature 450 8C. The zero point of charge for this product was found to be stable at pH value around 3 in the range of initial pH between 3 and 10.