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Investigations on the Electrochemical Surface Treatment of Carbon Fibers

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Abstract: Desized polyacrylonitrile (PAN) based carbon fibers (CF) were chemically and electrochemically oxidized and reduced. CF surfaces were activated via cyclic voltammetry studies with anodic and cathodic scans. The changes in CF surfaces were studied by contact angle measurements. Lifshitz-van der Waals and acid-base components of single fibers were determined. In general, oxidation resulted in the formation of an acidic surface energy component and reduction gave rise to no change in the number of basic functionalities at the CF surface.

Key Words: carbon fiber, cyclic voltammetry, contact angle.

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