

BIOFILM GROWTH FORM WASTE WATER ON MWNTs AND CARBON AEROGELS

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The improving carbon nanostructure bioactivity related to a specific microorganism community is an important research goal of bionanotechnology [1]. The desired carbon nanotube properties are usually obtained after chemical modification. In this way, the functionalized CNTs are used to improve the bioaffinity of working electrode in biofuel cells and waste water treatment. Beside CNTs, carbon aerogel is another carbon nanomaterials with high surface area, high open porosity and controllable morpho-structural characteristics.

In the present work we investigate the biofilm growth in waste water on functionalized CNT and carbon aerogels. The biofilm growth on the MWNTs (Fig.1a) and carbon aerogel (Fig.1b) was monitored by optical and scanning electron microscopy. The influence of the bacterial growth phase on the voltammetry measurements was assessed by obtaining a cyclic voltammogram of the bacterial consortium growth on carbon electrode in waste water and 0,5 M phosphate buffer.

References:

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[2] C.G. Hu, W.L. Wang, K.J. Liao, G.B. Liu, Y.T. Wang, *Journal of Physics and Chemistry of Solids* 65 (2004) 1731–1736

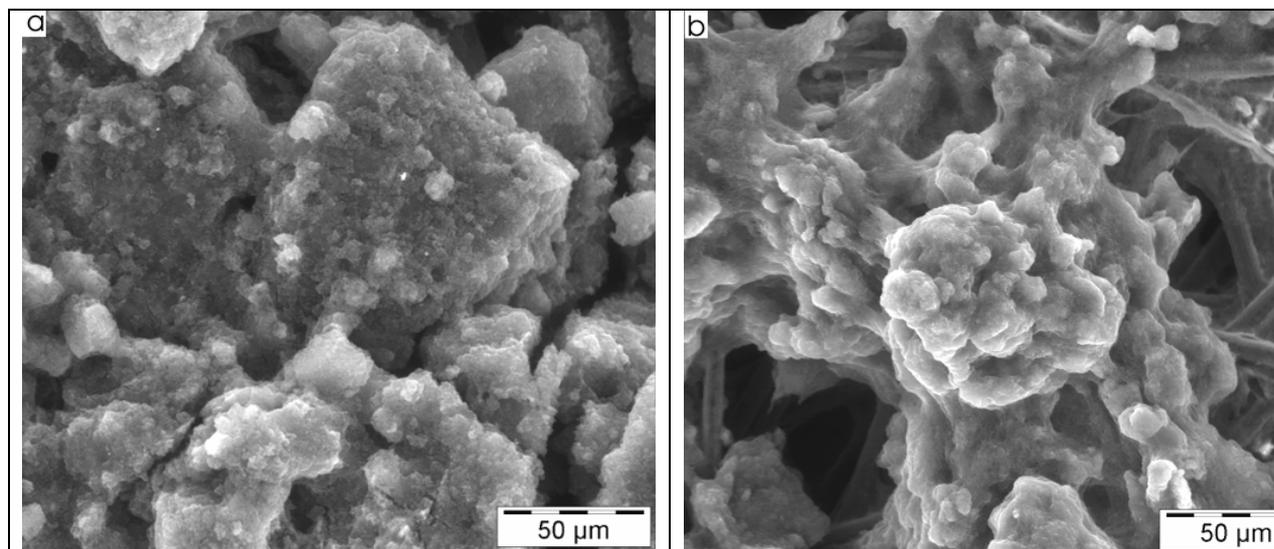


Figure1. Scanning electron microscopy images of biofilm growth on: a) carbon aerogel and b) MWNT