

Abstract Submitted
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Polymeric Nanoelectrodes for Investigating Cellular Adhesion¹

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— Polyethylene dioxythiophene nano-filaments were grown on lithographic electrode arrays by the recently developed directed electrochemical nanowire assembly technique. These filaments are firmly attached to the electrode but are not attached to the glass substrate. Hence, they behave like cantilevered rods (with one free end). Individual cells of the slime mold *Dictyostolium discoideum* initiate contact by extending pseudopods to the nanoelectrodes when cultured on the electrode arrays. Scanning electron micrographs of the interfaces show the contact area to be of the order of $0.1 \mu\text{m}^2$. Confocal images reveal the focal adhesions in the cell-electrode contact region. Deflection of the nanoelectrode by an individual cell can be used to measure the force exerted by the cell. Recent results on this innovative force sensing approach will be discussed.

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