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Conductive polymers have received increasing attention and many investigations have been conducted in order to develop the properties of conductive polymers and extend the application field. Poly(3,4-ethylenedioxythiophene) (PEDOT) has been well studied and applied in many different areas such as in biosensors[1], polymer solar cells[2] or organic light emitting electrodes[3].

The recently developed PEDOT-N_3 films can be post polymerization modified through click chemistry with different alkynes, which opens up for a large number of functional groups on the conductive polymer backbone.

In the presented work polymer coatings known to have antifouling properties on gold or silica surfaces have been prepared by introduction of an alkyne functional initiator for ATRP followed by controlled radical polymerizations of different combinations of monomers. The tested monomers have been employed in biofunctional applications to suppress non-specific fouling. “Grafting to” processes have earlier been tested and the presented work is compared to these results [4]. According these investigations of functionalized PEDOT it is possible to retain the conductive properties after surface modification and reduce protein adsorption at the same time.

Scheme 1: Functionalization of PEDOT-N_3 films with initiators, which subsequently was grafted through ATRP.

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