Symp C05

Carbon Microtube Electrodes Modified with Dopamine for Glucose Oxidation

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Carbon microtube(inner diameter is ~20 μm) was modified with gold nano particles, which were subsequently modified with mercaptopropionic acid(mpa) and dopamine(dopa). The electrodes had a type of C-μ tube(Au)/-mpa-dopa, where dopa act as electron transfer mediate at glucose oxidation reaction. The modified electrodes employed to additional modification with glucose oxidation(GOx) using polyethylene glycol(PEG)as a fixing agent of GOx. The final feature of modified electrodes had a C-μ tube(Au)/-mpa-dopa:GOx(PEG). These electrodes were employed to oxidize gluocse in 0.1 M phosphate buffer solution. The cyclic voltammetric responses were investigated at each step. The quantity of gluconolactone was determined from oxidation peak area of CV. The quantities of glucose at before and after the reaction were monitored by QCM according to silver mirror reaction of the glucose.