Electronic Supplementary Material (ESI) for Dalton Transactions.

Honeycomb-patterned hybrid films of Surfactant-Encapsulated Polyoxometalate by breath figure method and its electrocatalysis for BrO_3^-

Li Zhang,[a,c] Lei Chen, [*a] Shu-xia Liu, [*b] Jian Gong[*b], Qun Tang, [b] and Zhong-min Su[b]

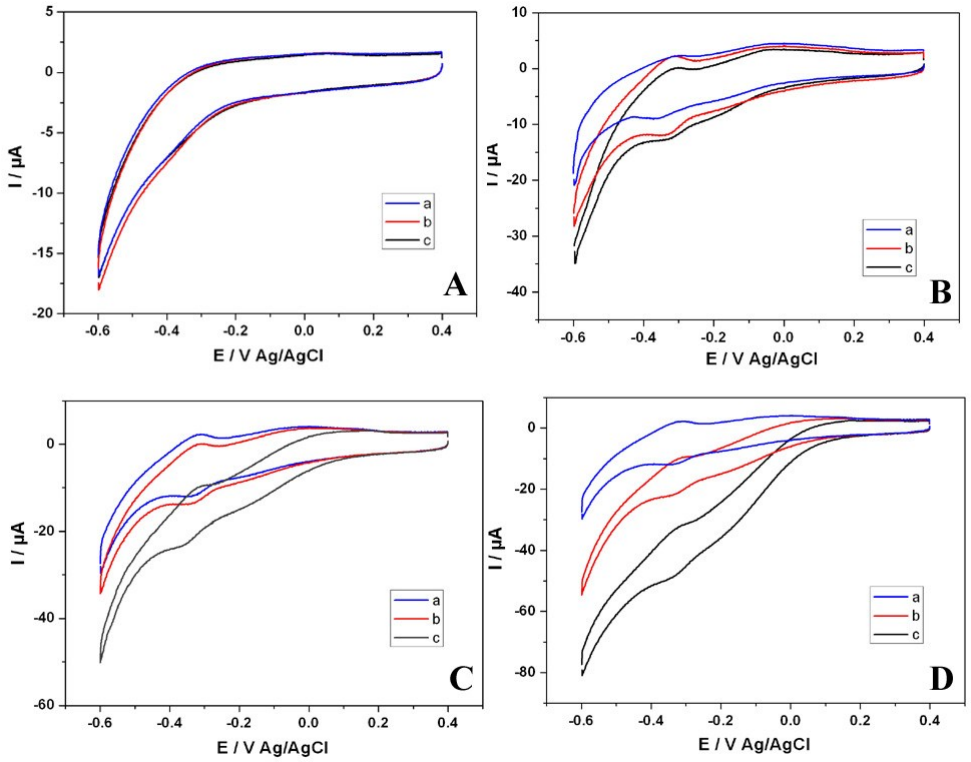

Figure S1. Cyclic voltammograms of catalyzing the reduction of BrO_3^- at ITO electrode modified with different SEP films that obtained under the humidity of 20% (A), 40% (B), 70% (C) and 90% (D), in N_2-saturated Na_2SO_4-H_2SO_4 solution (pH = 2) in the absence of BrO_3^-（a） and after addition of 6 mM, (b) and 12 mM, (c) BrO_3^-. (scan rate of 100 mV s^{-1}, with the same geometrical area of 1 cm^2).

Figure S1 shows the CVs of electrocatalytic reduction of bromate at ITO electrode modified with different SEP films that obtained under the humidity of 20% (A), 40% (B), 70% (C) and 90% (D), in the absence of BrO_3^- and after the addition of different concentrations of BrO_3^- in Na_2SO_4-H_2SO_4 solution (pH = 2). Figure S1A shows the film obtained from the humidity of 20%, as the addition of different concentrations of BrO_3^-, the CV curves almost have no change. We suggest that under the very low humidity of 20%, most of the POM were encapsulated by the surfactant dimethyldioctadecylammonium bromide, there is few bare POM in the surface of the film, which limited the performance of POM. For the other honeycomb films of SEP, it clearly shows that the BrO_3^- is electrocatalytically reduced. The results suggest that the honeycomb film that obtained under the humidity of 90% has the best performance than other films obtained under the humidity of 20%, 40% and 70%.