

In this thesis, we present the investigation of influence of methanol crossover, which significantly decreases the performance of DMFC (Direct Methanol Fuel Cell). Additionally the poisoning effect occurs on the cathode side. The durability of cathode catalyst exposed by methanol vapor is studied. Moreover, the regenerative behavior after exposition has been found. The comparison of commercial catalyst with our own sputtered Pt and PtCo and PtRu thin layers as catalyst is presented. Obtained results have shown that PtCo is reasonable compromise between pure Pt, which has high performance, and PtRu, which is tolerant to methanol poisoning. Future research should further evaluate the advantages of PtCo cathode catalyst prepared by standard procedures and its market potential in comparison with PtRu.