

Abstract:

This diploma thesis is interested in usage of Electron Beam lithography process as an instrument of transport of contacts and catalytic layers to micro-channels of the micro monolithic planar fuel cell. Experimental part includes optimization of the PMMA resist deposition method on the 3D topography – spray coating – is performed with alternative spray coating system. The optimal spin speed resist, molecular weight and concentration is chosen during the optimization. Parameters of the exposition, developing and lift-off are also modified and three EBL processes are performed. The first ensures deposition of Au contacts to the channels; the second is for application of Pt layer to the cathode channel and the last aimed to cover the anode channel with CeO/CN_x layer. All layers are deposited by magnetron sputtering.