

In the field of preparation of catalytic layers for proton exchange membrane water electrolyzers (PEMWE), the magnetron sputtering seems to be an auspicious new method not yet broadly used. Because of the high cost of materials used as catalysts there is a demand to prepare the catalytic layers using less material while maintaining the efficiency of the layer at the same time; here the magnetron sputtering of catalysts seems to be a promising method. In this bachelor thesis, our task was to prepare samples and examine characteristics of magnetron-sputtered layers of noble metals in dependence on the sputtering power under which the layer had been prepared. We examined the layers in terms of their density, morphology and elemental composition and by measuring their catalytic performance via the rotating disc electrode (RDE) method.