

Poster-Session

Development of manufacturing process sequences for coated metallic bipolar plates used for fuel cells of the highest quality and energy efficiency

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The current use of PEM fuel cells is limited by cost intensive large-scale production. The aim of this project is to develop and test new manufacturing routes of metallic BPP. This includes the combination of two different coating approaches and different forming processes like hollow embossing or hydroforming.

One coating approach are functional carbon layer systems by arc deposition and magnetron sputtering, which retain their high electrical conductivity and corrosion resistance even after forming.

The other approach based on metallic pre-coated plates and functionalized after forming by a plasma diffusion treatment in order to minimize defect caused by forming and avoid corrosion initiation spots.

The supporting companies will contribute coatings and techniques for evaluation. The capability of the different approaches will be investigated in different forming operation, with the aim to develop a cost-effective, efficient and scalable production route for BPP.