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## **EXPERIMENTS CONCERNING COMBINED CATALYTIC-COLD PLASMA HYDROGEN PRODUCTION**

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### **Abstract**

In the frame of the new and clean energy technologies, the plasma reactors might occupy an important place in the future. Their high productivity and condensed dimensions are recommending them for both industrial use and for small-scale activities in order to produce hydrogen either at local fuel stations or for combined reformer-fuel cell systems. A gliding arc reactor, combined with a catalytic bed, has been used for the steam reforming of methane. Catalytic thin films of platinum were prepared by means of plasma technologies. The effects of discharge characteristics and of the catalyst were correlated with the chemical parameters (e.g. conversion, selectivity, energy cost). On the other hand the exploitation parameters (i.e. feeding flow and reactants ratio) of the reactor were also taken into account.

*Keywords:* glidarc reactor, electric discharge, syngas, mechanism

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