

**Coatema Coating Center**

The company owned coating center is one of the world's best equipped with more than 1.200 m<sup>2</sup> of floor space. It offers 10 pilot plants and 1 production plant with working widths from 250 mm to 2.000 mm.

Almost all substrates like textiles, film, paper and foil can be processed on the Center's plants. For fuel cell applications all technologies for GDLs, GDEs and CCMs can be used. The experts in our lab will support you during coating trials and from your idea to the finished product.

In addition to our standard plants tailor-made machines and entire automation solutions are offered by Coatema.



Coatema Coating Machinery GmbH



Coatema R&D Center on 1.200 m<sup>2</sup>



Easycoater  
Working width: DIN A 4



Basecoater  
Working width: 250 mm



Deskcoater  
Working width: 500 mm



Support by coating experts in the Coatema Coating Center



Use of the most chemicals and formulation methods



Inert drying system - Floatation Dryer  
Working width: 500 mm



Click&Coat™ - Unit  
Working width: 500 mm



Linecoater  
Working width: 500 mm

**Coatema Fuel Cell Technologies** Coating Solutions for Fuel Cells



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**In-depth knowledge of the industry**

For 30 years now, Coatema Coating Machinery GmbH has been designing and constructing coating and laminating plants for the most different applications. Almost all substrates and chemicals can be processed on Coatema plants; either as sheets or from roll to roll.

You may be sure that Coatema will also offer you the optimal coating technology for the production of fuel cells. Our 10 years' experience in the fuel cell market and the close cooperation with research institutes worldwide make us the competent partner, from the development up to the serial production.

On our plants, you can impregnate gas diffusion layers and apply the micro-porous layer and the platinum catalyst onto the gas diffusion layers. The GDL can consist of paper, non-wovens or fabrics. Systems for the membrane casting and the direct coating of membranes with platinum catalysts are also available.

The application systems that can be used for this purpose are: Knife System, Engraved Roller System, Slot Die System and Micro Roller System. They are available as modular coating heads that can be quickly changed and thus guarantee a high degree of flexibility.



Application of Fuel Cells  
(Source: Forschungszentrum Jülich)



Click&Coat™ coating plant for the fuel cell production  
(Source: Forschungszentrum Jülich)



**The right plant in the scale-up process**

Coatema offers plants for the basic research, lab coating and pilot plants up to production plants for MEA's or other fuel cell components. These solutions are available for the following fuel cell technologies:

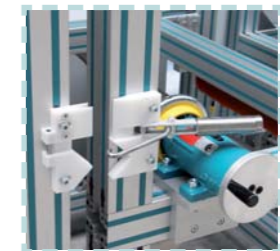
AFC, PEMFC/HTPEMFC/DMFC, MCFC, SOFC

For these different fuel cell technologies, Coatema offers plants with working widths from DIN A 4 size up to material widths of 1.200 mm for roll to roll applications.



**Click&Coat™ - Concept**

Coatema has developed the innovative Click&Coat™ concept for pilot plants to be able to react faster and in a more cost-saving way to the most different requirements. Click&Coat™ permits the flexibility of the individual coating heads but also of the entire plant: The individual plant components are movable and can be brought into the right position by a simple "click" and be connected to the recently developed control system. This is a unique way to combine different processes in modular design.



Click&Coat™: the individual plant components can be brought into the right position by a simple "click"

**Typical modular application systems in the fuel cell industry**

