

Fuel cell / Electrolyzer



# Coating solutions for fuel cell & electrolyzer products market brochure

# Coatema coating solutions for fuel cell

## State-of-the-art coating equipment

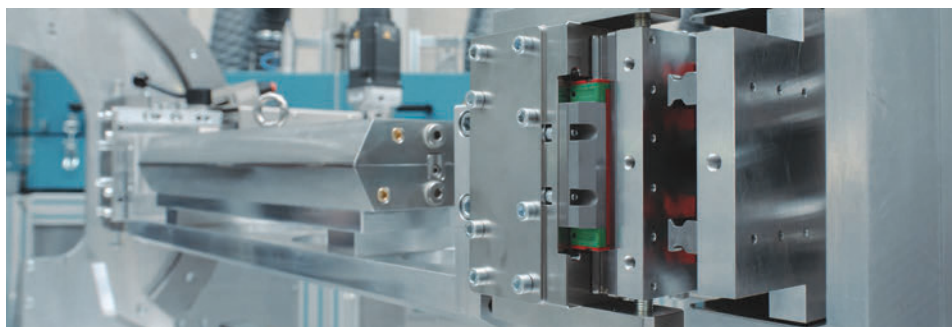
Coating solutions for fuel cells and electrolyzers are essential for efficient and reliable operation of green hydrogen systems.

At Coatema, we bring over twenty years of experience to the fuel cells and electrolyzer market, and have developed close partnerships with leading research institutions around the world. This has allowed us to become a trusted and competent partner for the entire process of fuel cell and electrolyzer development, from initial R&D and pilot runs, to serial production.

Our main area of expertise is the 7-layer membrane electrode assembly area, where we offer a range of concepts, from A4 S2S systems to integrated R2R production solutions with working widths of up to 1,200 mm.

We focus on the coating and printing processes like slot die, doctor blade and comma bar coating to rotary screen printing and engraved roller printing. We combine this with highly energy efficient drying systems which can be roller supported, flotation dryers and alternative systems like infrared, NIR and laser. All of these techniques can also be operated under inert gas atmosphere. The overall process control is designed for high accuracy and precise tension control for different procedures, like using very low tension in wet lamination processes or reinforcement for PEM electrolyzer membranes.

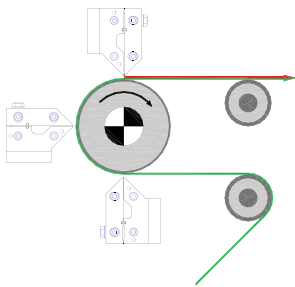
Theoretical simulation for our slot dies combined with Coatema's patents on intermittent slot die coating technology and the experience to hot press several coated films using the decal method, provide the ultimate process solutions for our customers' products.



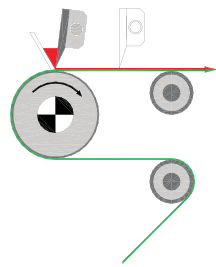
Slot die coating

# and electrolyzer technologies

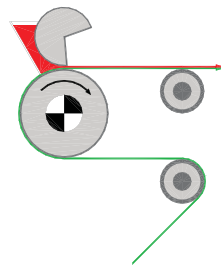
## Fuel cell and electrolyzer coating & printing systems



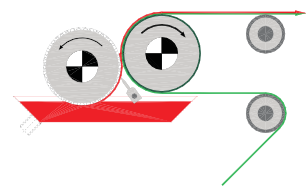
Slot die system



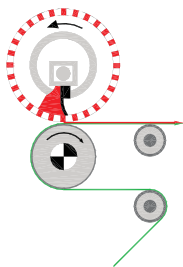
Doctor blade system



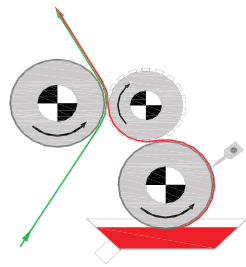
Commabar system



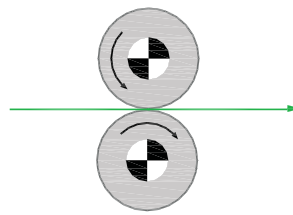
Engraved roller system



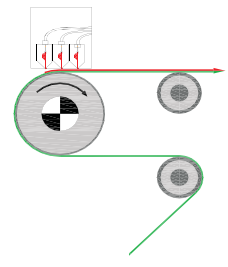
Rotary screen system



Flexoprinting system



Hot embossing system



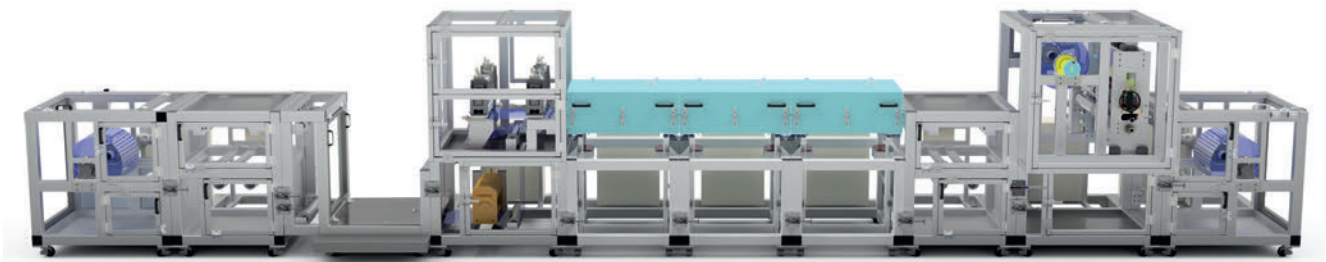
Inkjet system



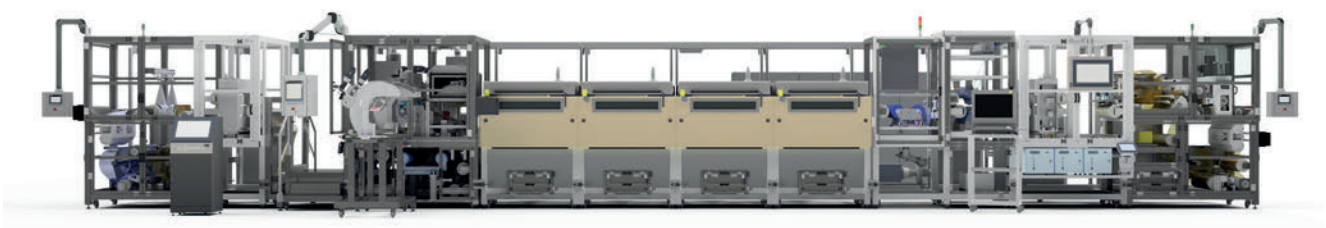
## Coatema lab, pilot, and production solutions



Easycoater Evolution



Extended configuration of a Click&Coat™ coating line



Click&Coat™ pilot line



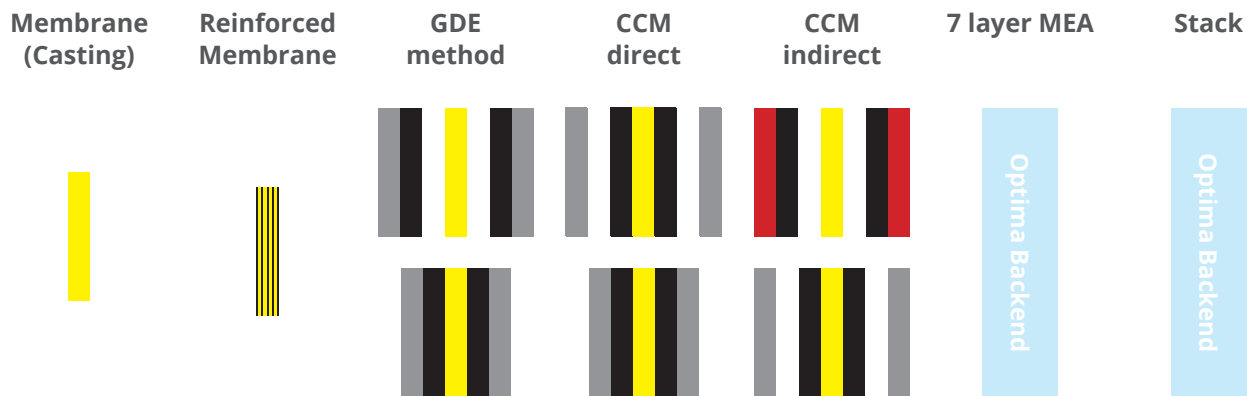
# Slot die coating solutions

## Fuel cell and electrolyzer technologies by Coatema

Coatema is a leading provider of coating systems for fuel cell technologies, offering solutions for fundamental research, pilot plants, and industrial production. Our laboratory coater machines, such as the Easycoater, are designed for use in research settings, and can be customized with modified drying concepts to suit specific requirements.

Our pilot plants feature a number of dedicated processes like direct catalyst coated membrane (CCM), Decal hot pressing method (indirect CCM), and our industrial production plants are designed for the production of MEAs for fuel cells and electrolyzer and other of these components with integrated quality control systems and industry 4.0 solutions. From GDL, Membrane, CCM and MEA we offer the right fit of equipment solutions for R&D and Industry.

In addition to our production facilities, we also have a range of equipment at our R&D centre that can be used for process and product development. This allows us to work closely with our clients to develop customized solutions that meet their specific needs. We offer solutions for a variety of fuel cell technologies including AFC, PEMFC/HTPEMFC/DMFC, and SOFC. Our systems have working widths that range from DIN A4 to material widths of 1,200 mm in the industrial application field. In electrolyzers we are focusing on PEMEC and AEC.





## Coatema R&D solutions

At Coatema Coating Machinery GmbH in Dormagen, Germany you have the opportunity to work in the world's largest and most versatile R&D centre for coating, printing, and laminating.

- ✓ Equipped with S2S and R2R coaters, pilot lines for coating & printing, versatile and modular Click&Coat™ systems
- ✓ Over 10 pilot lines with working widths from 100 mm up to 500 mm in operation, also available in virtual trial runs
- ✓ Experienced technical and executive staff, well equipped chemical labs & meeting rooms
- ✓ Needs based analysis and measured, actionable results before, during, and after process trials
- ✓ From idea to process to product, the Coatema R&D centre with the R&D projects team is the place to be for everyone in fuel cells, electrolyzers, batteries, membranes, solar, printed electronics and more

**If you like to run trials please contact:**  
**sales@coatema.de or call: +49 21 33 97 84 - 0**



**Visit our  
R&D website**



**Visit our virtual  
R&D centre**



# Research & development centre at Coatema