Coatema research & development centre

21/07/25

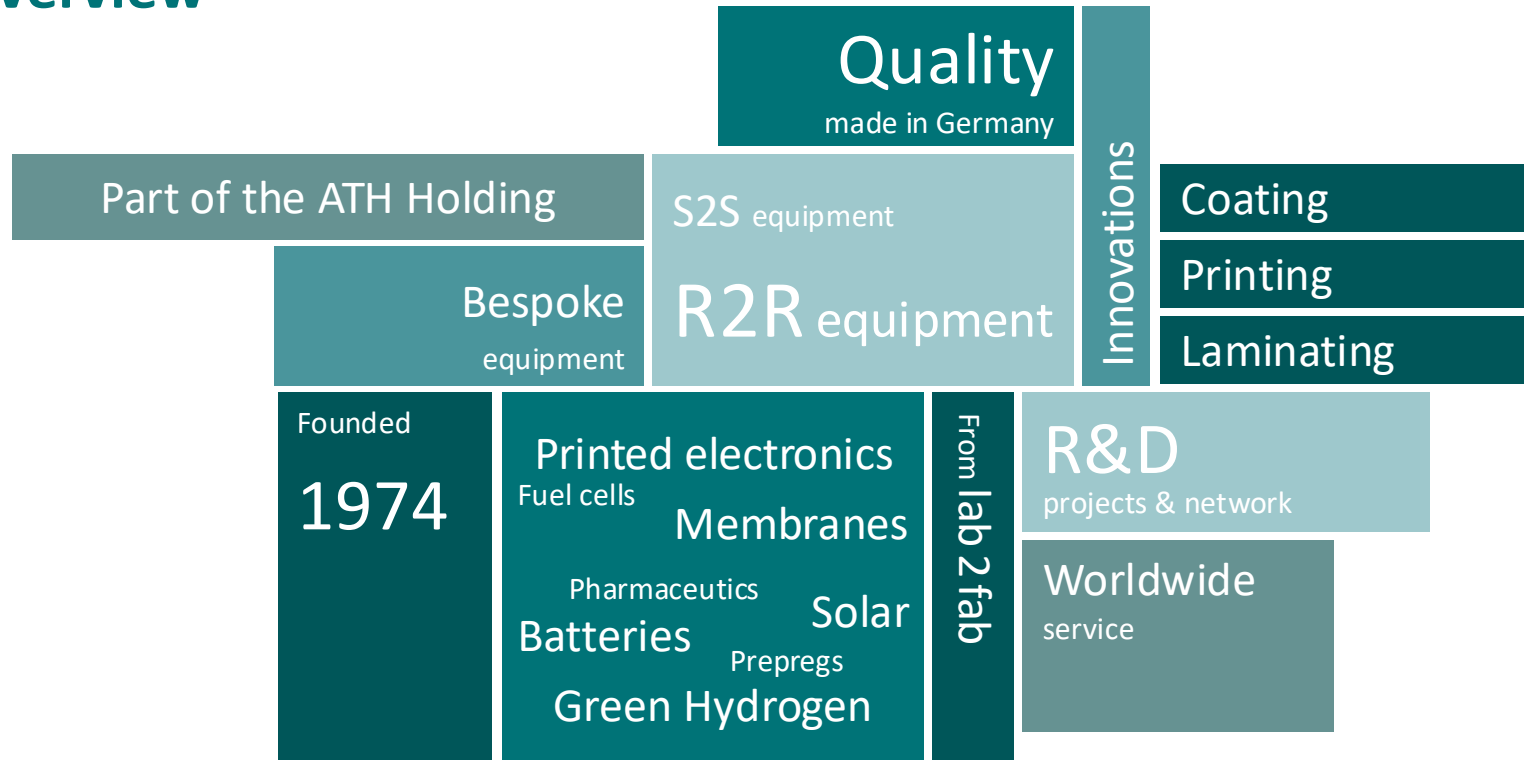
MEMBER OF ATH

Agenda

1. Introduction
2. The Coatema R&D centre
3. R&D centre equipment

Introduction

Overview


Quality
made in Germany
Innovations
Part of the ATH Holding
S2S equipment
R2R equipment
Bespoke
equipment
Coating
Printing
Laminating
Founded
1974
Printed electronics
Fuel cells
Membranes
Pharmaceutics
Solar
Batteries
Prepregs
Green Hydrogen
From lab 2 fab
R&D
projects & network
Worldwide
service

Group of companies

ALTONAER
TECHNOLOGIE
HOLDING

KROENERT

- ✓ Founded 1903
- ✓ Approx. 200 employees
- ✓ Located in Hamburg

DRYTEC

- ✓ Founded 1995
- ✓ Approx. 50 employees
- ✓ Located in Norderstedt

Coatema®
Coating Machinery GmbH

- ✓ Founded 1974
- ✓ Approx. 50 employees
- ✓ Located in Dormagen

Coatema equipment platform strategy for lab2fab

Lab

- ✓ State-of-the-art research and development equipment
- ✓ Sheet-to-sheet to roll-to-roll systems on smale scale & footprint

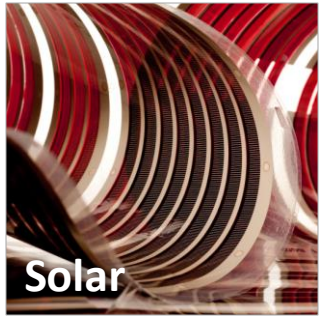
Pilot Production

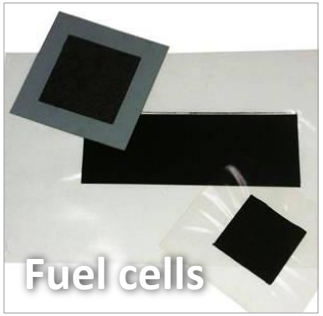
- ✓ Proven processes for printing, coating and laminating equipment
- ✓ Highest-quality pilot lines enable stable pilot production and reduce cost of operation
- ✓ Scaling laboratory equipment to enable pilot production

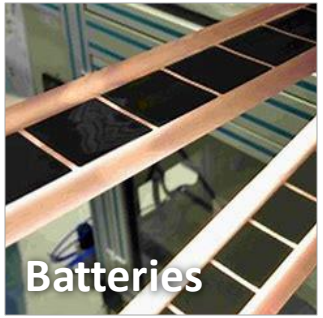
Production

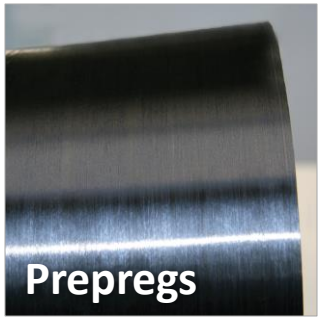
- ✓ Full-scale production lines
- ✓ Optimize the manufacturing process, including streamlining assembly, reducing material waste, and optimizing the carbon footprint

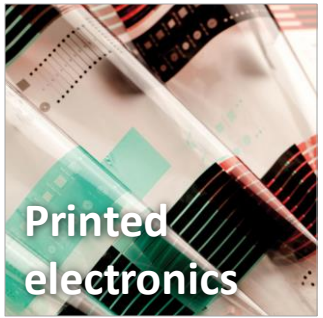
Our markets







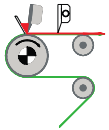




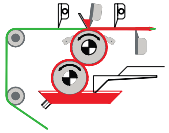
Actual system proven in operational environment

Basic principles observed

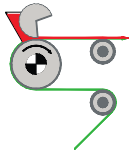
Coating systems



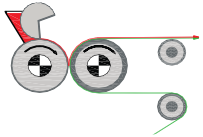
Knife system



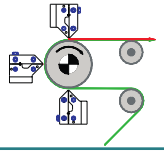
Double side coating system



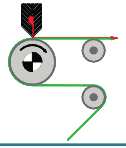
Commabar system



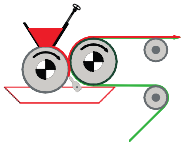
Reverse commabar system



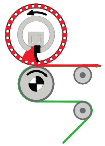
Slot die system



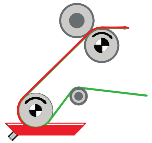
Curtain coating system



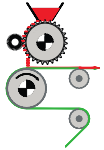
Case knife system



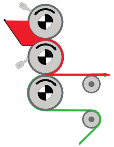
Rotary screen system



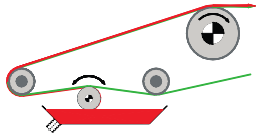
Dipping system (Foulard)



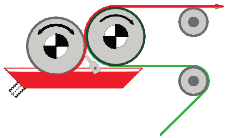
Powder scattering system



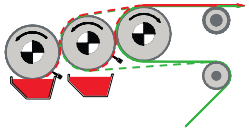
Reverse roll coating system



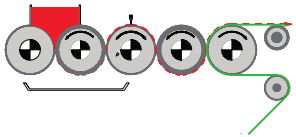
Micro roller coating system



2-roller coating system

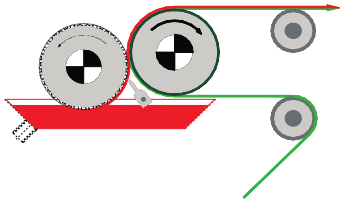


3-roller combi coating system

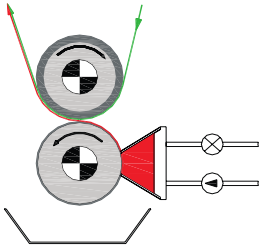


5-roller coating system

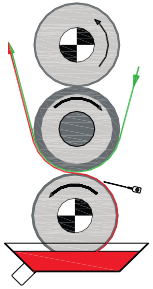
Printing systems



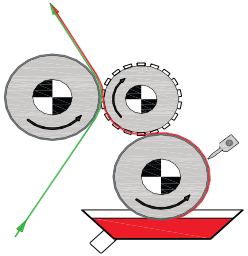
Engraved roller system



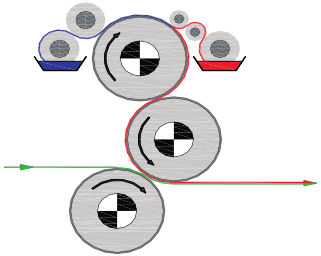
Gravure roller system



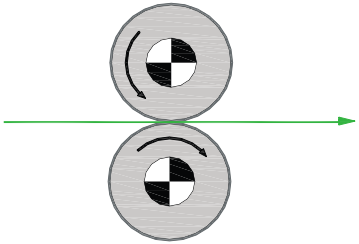
Gravure indirect system



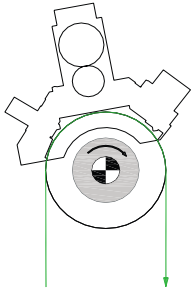
Flexography system



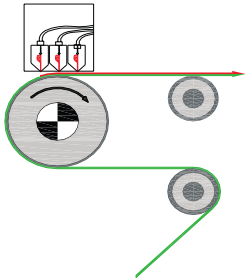
Offset lithography system



Hot embossing system



Nanoimprint system



Inkjet system

Coating parameters

Coating chemistry	Coating processes	Process control	Drying
✓ Rheology ✓ Viscosity ✓ Viscoelasticity ✓ Type of solvents ✓ Solid content ✓ Van der Waals force ✓ Sheer ratio ✓ Adhesion/Cohesion	✓ Coating systems ✓ Single or multilayer coatings ✓ Direct coatings ✓ Transfer (indirect) coatings ✓ Substrate speed ✓ Layer thickness ✓ Coating accuracy	✓ Process layout ✓ Tension control system ✓ Material guiding system ✓ Inline parameter control ✓ Quality control	✓ Convection drying ✓ Contact drying ✓ Infrared drying ✓ Sintering ✓ NIR ✓ High frequency ✓ UV crosslinking systems

Substrate	Pretreatment	Environment	Finishing
✓ Surface tension ✓ Dimension stability ✓ Surface structure ✓ Contact angle	✓ Corona ✓ Plasma ✓ Cleaning	✓ Humidity ✓ Temperature ✓ Inert conditions	✓ Calendaring ✓ Embossing ✓ Slitting

Our work in associations – global networking

oe-a

NMWP.NRW
Cluster NanoMikroWerkstoffePhotonik

HOPE-A
Hellenic Organic & Printed Electronics Association

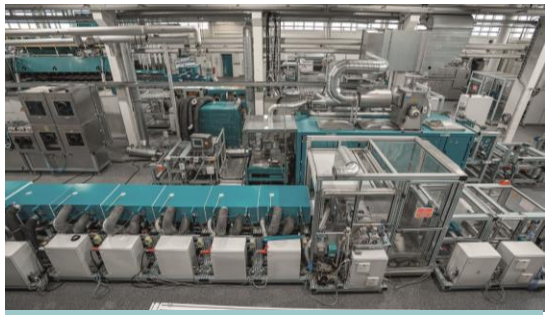
Board Member:
OE-A

Advisory Board:
Fraunhofer ITA

Coatema customers

Coatema services as an overview

The Coatema R&D centre



Accelerate your innovation in our dedicated pilot facility with advanced lab & pilot lines and expert guidance – bridging the gap from #lab2fab.

The Coatema Coating Symposium

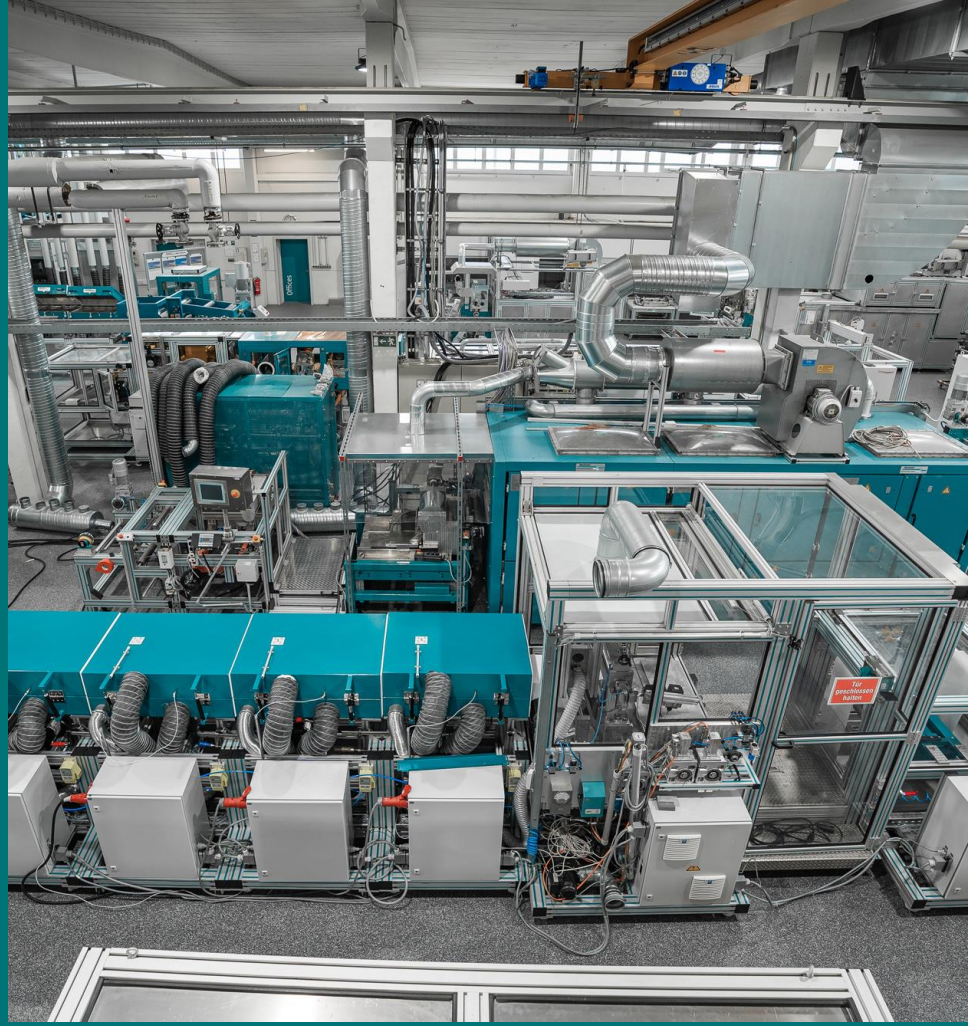
Join the global network of coating experts at our annual event, where cutting-edge developments meet industry collaboration for next-level innovation.

The Coatema Slot Die Masterclass

Master precision coating in our hands-on training program, led by industry specialists to optimize slot-die performance and product excellence.

2.

Coatema research & development centre



R&D power houses

KROENERT – Drytec – Coatema

- ✓ R&D space: 2 000 m²
- ✓ R&D units: 15
- ✓ From R2R to S2S
- ✓ Working width: 100 mm to 1 300 mm
- ✓ Operation speed: 0.1 to 1 610 m/min.
- ✓ 15 parallel public funded R&D projects
- ✓ R&D staff: 25

Product portfolio:

- ✓ Basic research, process- and productdevelopment
- ✓ Product improvement
- ✓ Trainings and conferences

R&D centre KROENERT & DRYTEC

R&D centre Coatema

Want to save resources, money and time

- ✓ We offer access to a wide variety of lab, pilot and production tools
- ✓ We offer immediate exposure to process development and machine operation without long training periods
- ✓ We offer our experience and skills to cut down lead times for your product development
- ✓ We offer the full support and participation in funded R&D projects for process and machine related challenges

R&D centre USP

Process development

- ✓ Feasibility study
- ✓ Ink – process study
- ✓ Process analysis
- ✓ Slot die coating simulations
- ✓ Proof of concept
- ✓ Small scale prototype

Test production

- ✓ Prototyping
- ✓ Near to market testing
- ✓ TRL evaluation
- ✓ Training of staff

Education

- ✓ Coating conference
- ✓ Partner trainings
- ✓ Education of students
- ✓ Workforce training

Development of custom-made design for equipment

- ✓ Prototyping
- ✓ Proof of concept

Public funded research projects know-how

- ✓ German funded
- ✓ Horizon 2020
- ✓ Global 2+2 projects
- ✓ B2B projects

Process and technologies

Technologies
Coating, printing, laminating, imprinting, pretreatment, drying, curing, cross linking, cutting

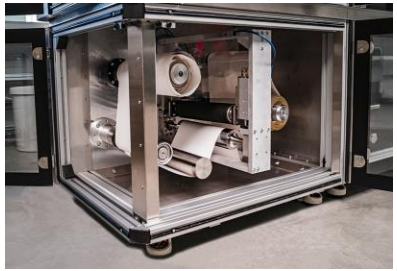
Number of units available
10 – 12 units on 1 200 sqm

Sheet-to-Sheet – S2S
up to 300 mm x 500 mm

Roll-to-Roll – R2R
up to 500 mm width

Operation speed
0.1 to 100 m/min

Benefits

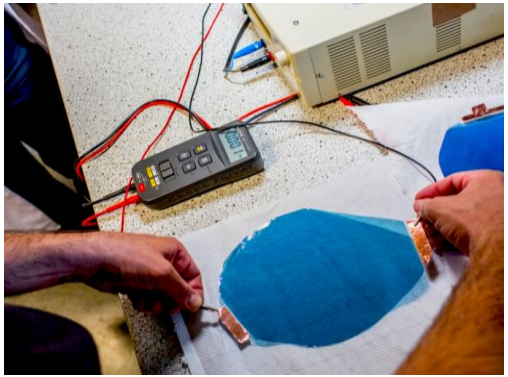


With Coatema application experts and interdisciplinary expertise.

You will be able to:

- ✓ Validate your process
- ✓ Check your line layout
- ✓ Run your R&D trials in lab2fab environment
- ✓ Scale up your process
- ✓ Run your products

R&D services



Services include:

- ✓ Technical briefing & brainstorming
- ✓ Trial planning & preperation
- ✓ Choice of unit & layout
- ✓ Support in logistics
- ✓ Training programs for staff

Cutting edge technology

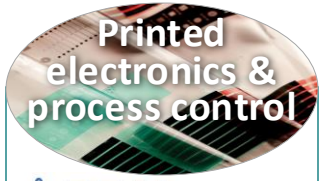
Services include:

- ✓ Technical briefing & brainstorming
- ✓ Trial planning & preperation
- ✓ Choice of unit & layout
- ✓ Support in logistics
- ✓ Training programs for staff

Coatema®
Coating Machinery GmbH

R&D customers

R&D projects overview 2022 – 2025



REAL NANO

In-line and real-time digital nano-characterization for flexible organic electronics

NOUVEAU

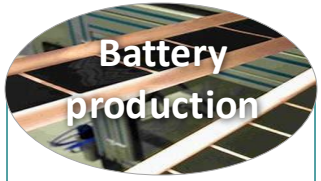
The NOUVEAU project will develop solid oxide cells (SOCs) with innovative La- and PMG-free electrode materials

FLEX2ENERGY
AUTOMATED MANUFACTURING PRODUCTION LINE FOR IPVS

R2R production line for OPV solar with integrated backend

FLEX-G 4.0

Upscaling and development of EC based switchable films to decrease energy use in buildings



IDEEL

Implementation of laser drying processes for lithium-ion battery production

SOLiD

R2R process optimization for solid state batteries

pepLAT

Plasmonically enhanced photocatalysis for wastewater treatment

ROLL 2 SOL

R2R nanostructuring of functional films

WATER PROOF

The WaterProof project aims at developing an electrochemical process that converts CO_2 emission

FLEX FUNCTION 2 SUSTAIN

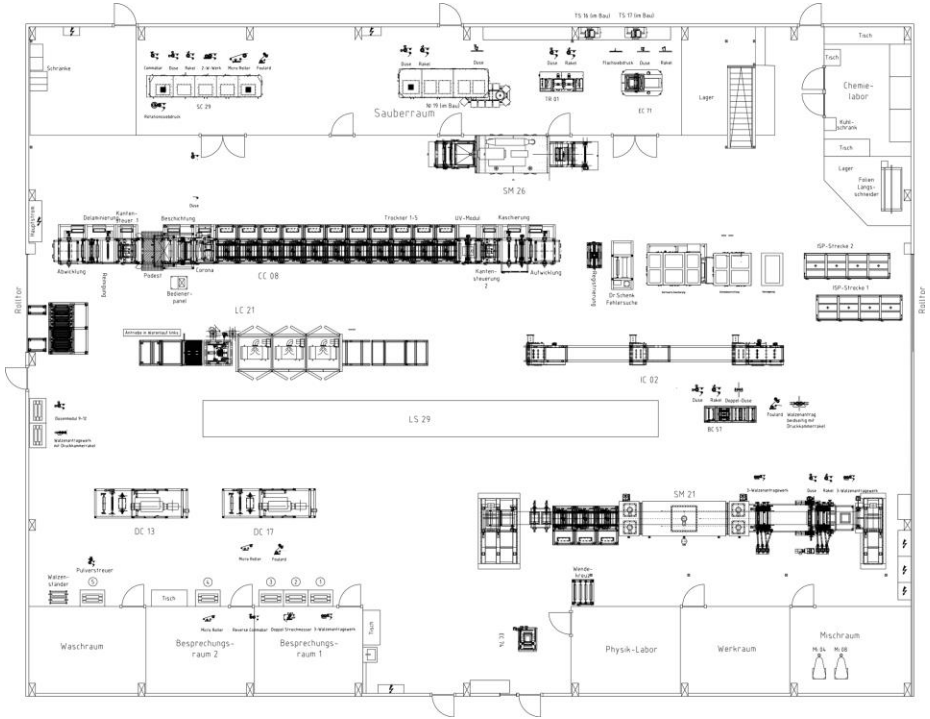
Creating an open-innovation testbed for sustainable packaging

Coatema research & development centre

3.

R&D centre equipment

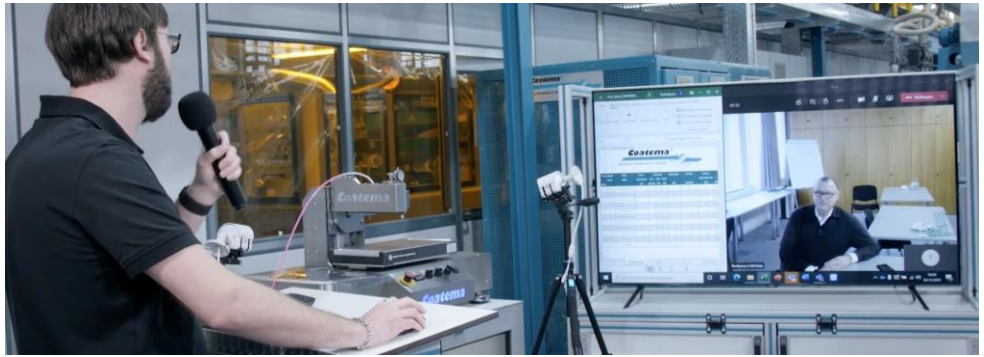
R&D centre layout equipment

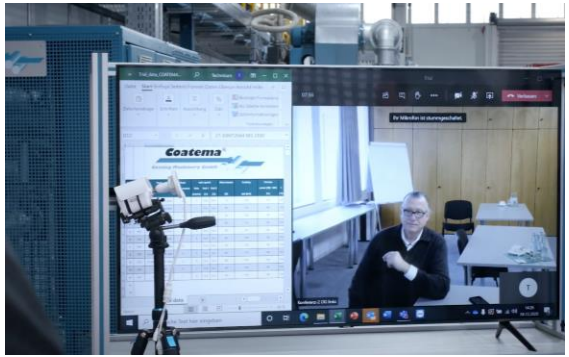


Systems in the R&D centre

Coating	Curing	Processes	Printing
Doctor blade	Hot air	Lamination / delamination	Rotary and flat screen
Slot die	Infrared	Cross cutting	Gravure / engraved roller
Double side	UV	Web direction cutting	Flexo roller
Micro roller	UV LED	In line rinsing / reaction containers	Inkjet
3 Roller	NIR	In line reaction zones	
Engraved roller	Photonic sintering	Corona	
Powder scattering		Nitrogen environment	
Reverse roll coater		Quality control systems	

Virtual trials





R&D centre equipment

Do not hesitate to contact us!

Anything missing?

Let us know and we will make it happen!

Our R&D centre is worldwide the most versatile centre for coating, printing and laminating.

Sales department:
sales@coatema.de

Download
broschures & presentations

Coatema

Thank you

Roseller Straße 4 ▪ 41539 Dormagen ▪ Germany
T +49 21 33 97 84 - 0 ▪ info@coatema.de

www.coatema.com

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