



Coatema company presentation

15/02/2024

MEMBER OF ATH

Coatema

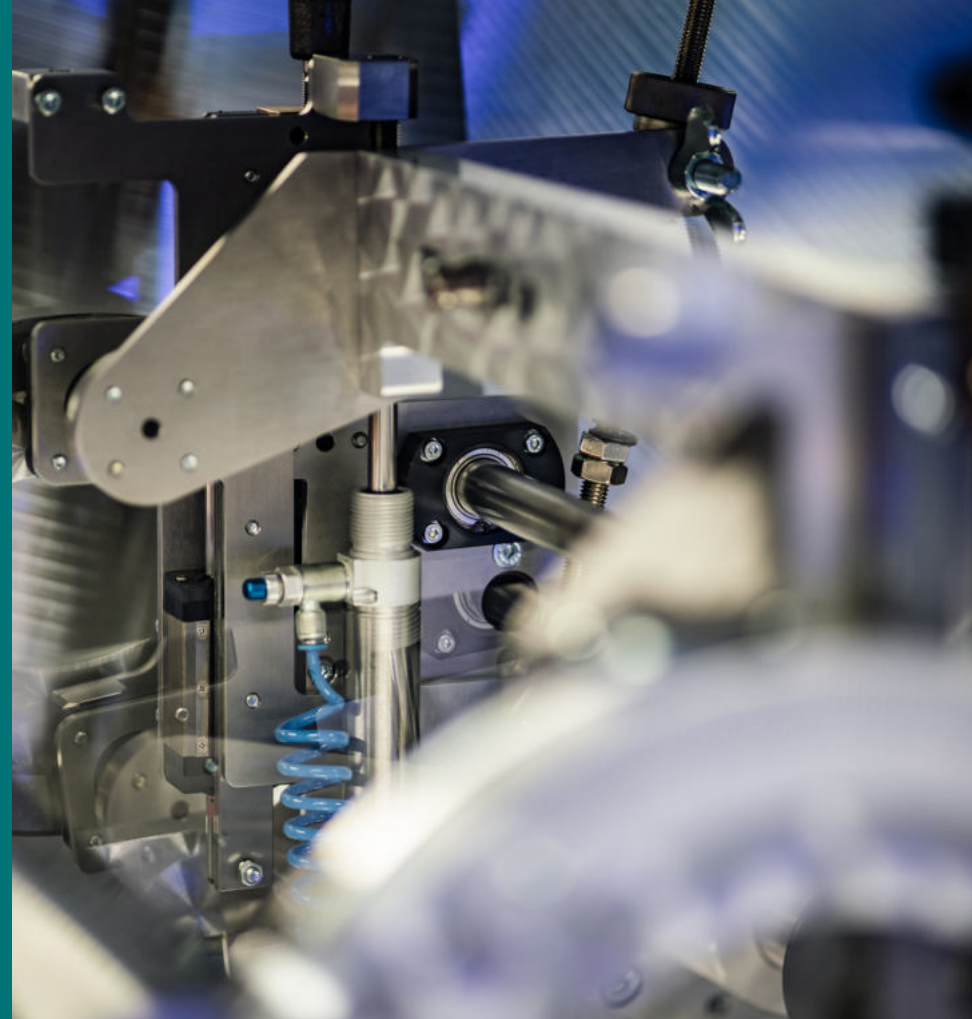
Agenda

1. Introduction
2. Our markets
3. Equipment
4. R&D centre
5. Contact

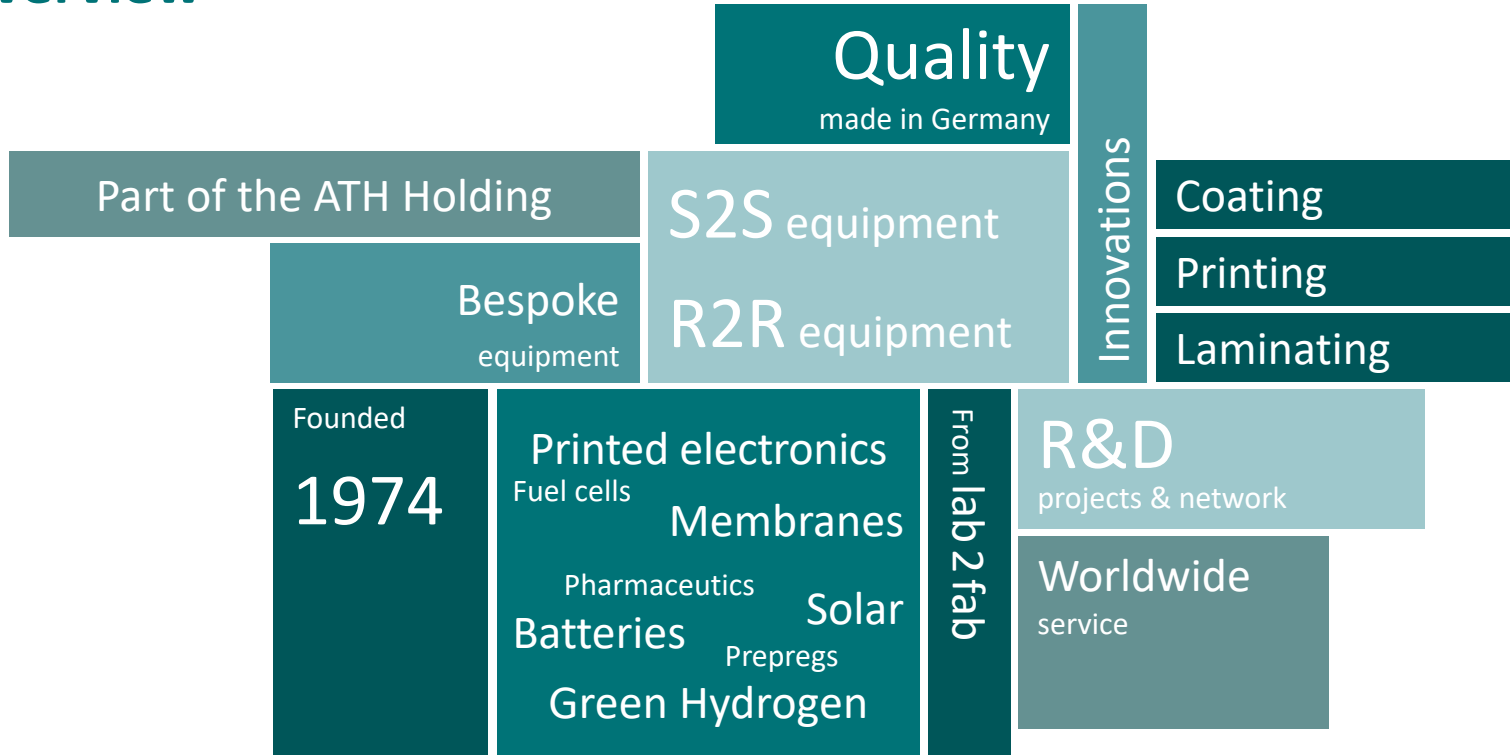


1.

Introduction



Overview



Group of companies

ATH ALTONAER
TECHNOLOGIE
HOLDING



KROENERT

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

DRYTEC

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



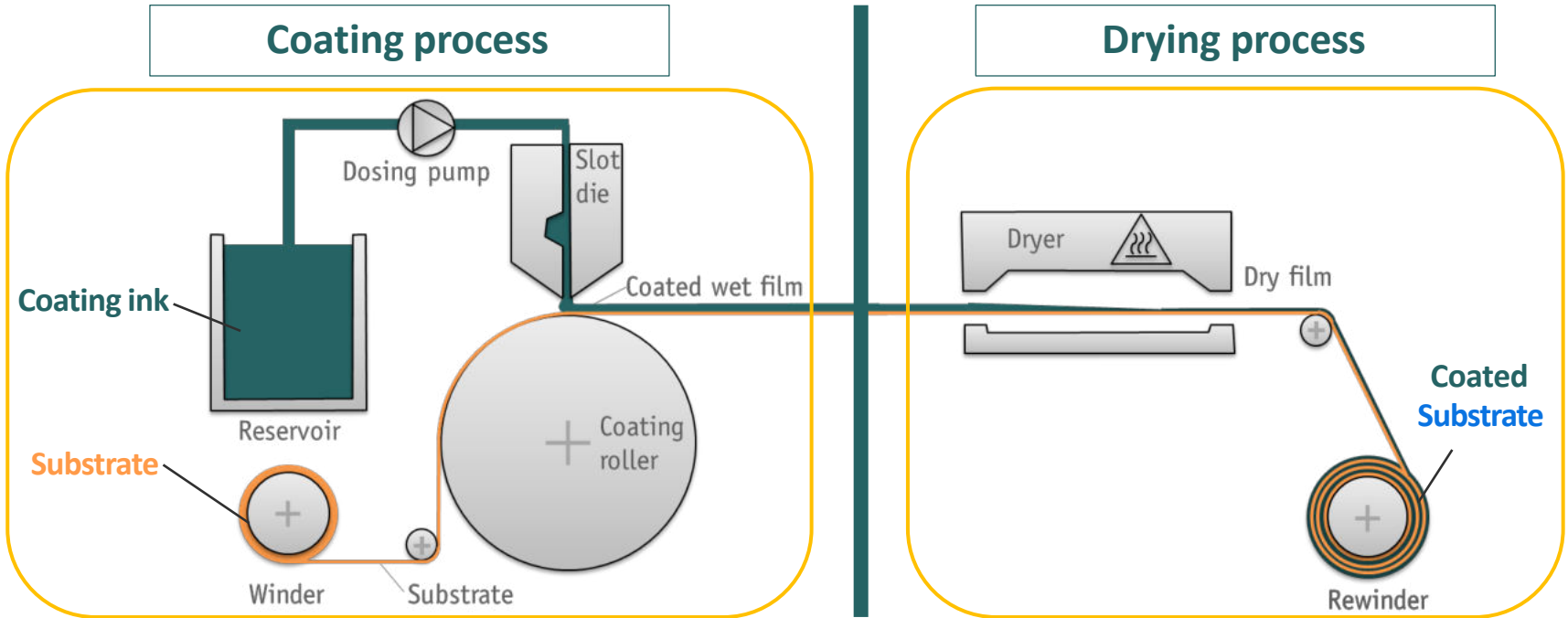
Coatema[®]
Coating Machinery GmbH

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

Represented worldwide



Upscaling – R2R lab scale production into fab



Coatema equipment platform strategy for lab2fab



Lab

- ✓ State-of-the-art research and development equipment
- ✓ Sheet-to-sheet to roll-to-roll systems on small 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



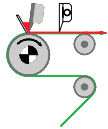
Production

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

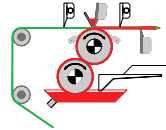
Coating parameters

Coating chemistry	Coating processes	Process control	Drying
<ul style="list-style-type: none"> ✓ Rheology ✓ Viscosity ✓ Viscoelasticity ✓ Type of solvents ✓ Solid content ✓ Van der Waals force ✓ Sheer ratio ✓ Adhesion/Cohesion 	<ul style="list-style-type: none"> ✓ Coating systems ✓ Single or multilayer coatings ✓ Direct coatings ✓ Transfer (indirect) coatings ✓ Substrate speed ✓ Layer thickness ✓ Coating accuracy 	<ul style="list-style-type: none"> ✓ Process layout ✓ Tension control system ✓ Material guiding system ✓ Inline parameter control ✓ Quality control 	<ul style="list-style-type: none"> ✓ Convection drying ✓ Contact drying ✓ Infrared drying ✓ Sintering ✓ NIR ✓ High frequency ✓ UV crosslinking systems
Substrate	Pretreatment	Environment	Finishing
<ul style="list-style-type: none"> ✓ Surface tension ✓ Dimension stability ✓ Surface structure ✓ Contact angle 	<ul style="list-style-type: none"> ✓ Corona ✓ Plasma ✓ Cleaning 	<ul style="list-style-type: none"> ✓ Humidity ✓ Temperature ✓ Inert conditions 	<ul style="list-style-type: none"> ✓ Calendaring ✓ Embossing ✓ Slitting

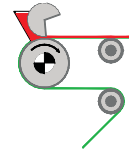
Coating systems



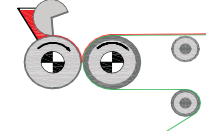
Knife system



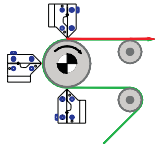
Double side coating system



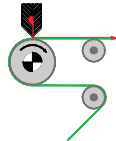
Commabar system



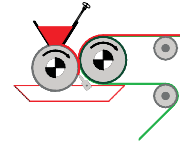
Reverse commabar system



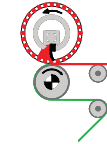
Slot die system



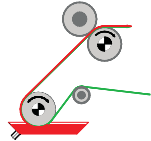
Curtain coating system



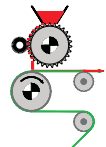
Case knife system



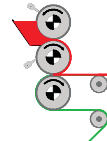
Rotary screen system



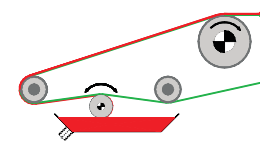
Dipping system (Foulard)



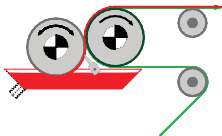
Powder scattering system



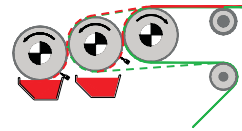
Reverse roll coating system



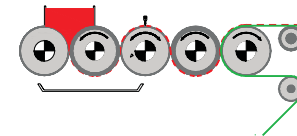
Micro roller coating system



2-roller coating system

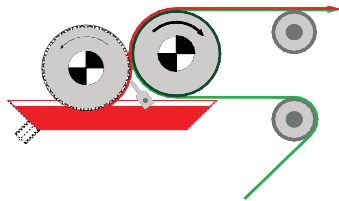


3-roller combi coating system

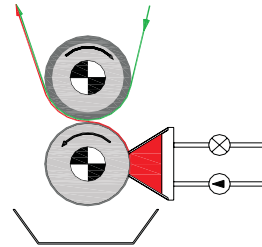


5-roller coating system

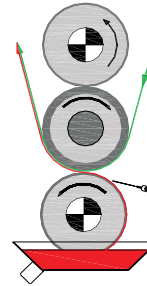
Printing systems



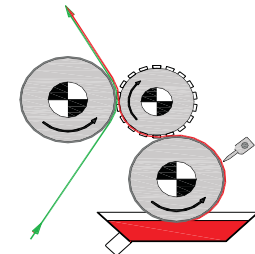
Engraved roller system



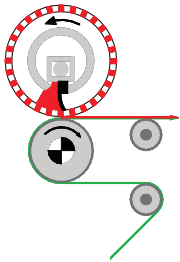
Gravure roller system



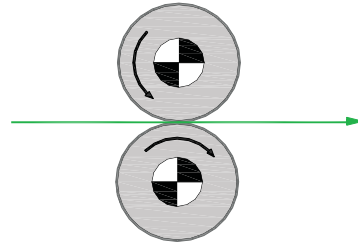
Gravure indirect system



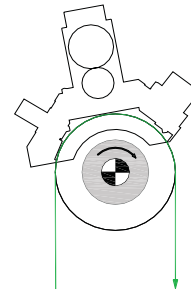
Flexography system



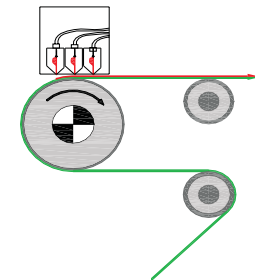
Rotary screen system



Hot embossing system



Nanoimprint system



Inkjet system

2.

Our markets



Coatema focus areas

Green Hydrogen

Fuel Cells

Batteries

Solar



Sustainability

Digital fabrication

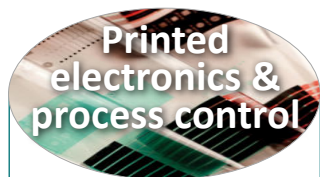
Printed
electronics

The next thing

R&D centre – our customers

TECHNISCHE UNIVERSITÄT DRESDEN
KIT Karlsruhe Institute of Technology
Agency for Science, Technology and Research SINGAPORE
THE UNIVERSITY OF ARIZONA
UNSW SYDNEY
Queen Mary University of London
ARISTOTLE UNIVERSITY OF THESSALONIKI
TTRI Taiwan Textile Research Institute
ITA Institut für Textiltechnik und Lehrstuhl für Textilmaschinenbau
RWTH AACHEN UNIVERSITY
NREL Transforming ENERGY
RUHR UNIVERSITÄT BOCHUM
RUB
TECHNICAL UNIVERSITY OF LIBEREC www.tul.cz
hochschule hof University of Applied Sciences
Deutsches Textilforschungszentrum Nord-West German Textile Research Centre North-West
cea
Fachhochschule Kiel Hochschule für Angewandte Wissenschaften
CENTI Centre for Nanotechnology and Smart Materials
FILK Forschungsinstitut Leder und Kunststoffbahnen
Hochschule Niederrhein University of Applied Sciences
Georgia Institute of Technology
UNIVERSITY OF CAMBRIDGE
Neue Materialien Fürth
JOANNEUM RESEARCH
HERIOT WATT UNIVERSITY
ZSW
DITF DEUTSCHE INSTITUTE FÜR TEXTIL+FASERFORSCHUNG
JÜLICH FORSCHUNGSZENTRUM
NATIONAL UNIVERSITY of MONGOLIA
VTT
TNO innovation for life
eurecat Centre Tecnològic de Catalunya
Fraunhofer IMM
Fraunhofer LBF
KITECH Korea Institute of Industrial Technology
Holst Centre Open Innovation by design and TMO
Hochschule Reutlingen Reutlingen University
Fraunhofer IAP
Fraunhofer IAF
Fraunhofer ILT
Fraunhofer IFAM
Fraunhofer ISC
Fraunhofer FEP
Fraunhofer IVV
Fraunhofer ISE
Fraunhofer ICT
Fraunhofer PYCO
Fraunhofer IPT
Fraunhofer IWM

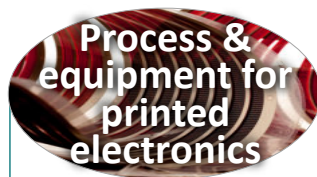
R&D projects overview 2022 – 2024



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

NOUVEAU PROJECT

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



R2R production line for OPV solar with integrated backend



Development of near-field electro hydrodynamic nanowire printing



Implementation of laser drying processes for lithium-ion battery production



R2R process optimization for solid state batteries



Plasmonically enhanced photocatalysis for wastewater treatment

RetroWin

R2R Process and machinery development for retrofit window films for lower production costs

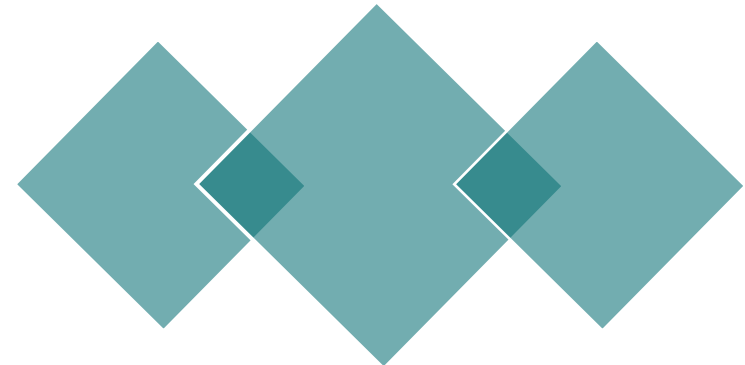


The WaterProof project aims at developing an electrochemical process that converts CO₂ emission



Creating an open-innovation testbed for sustainable packaging

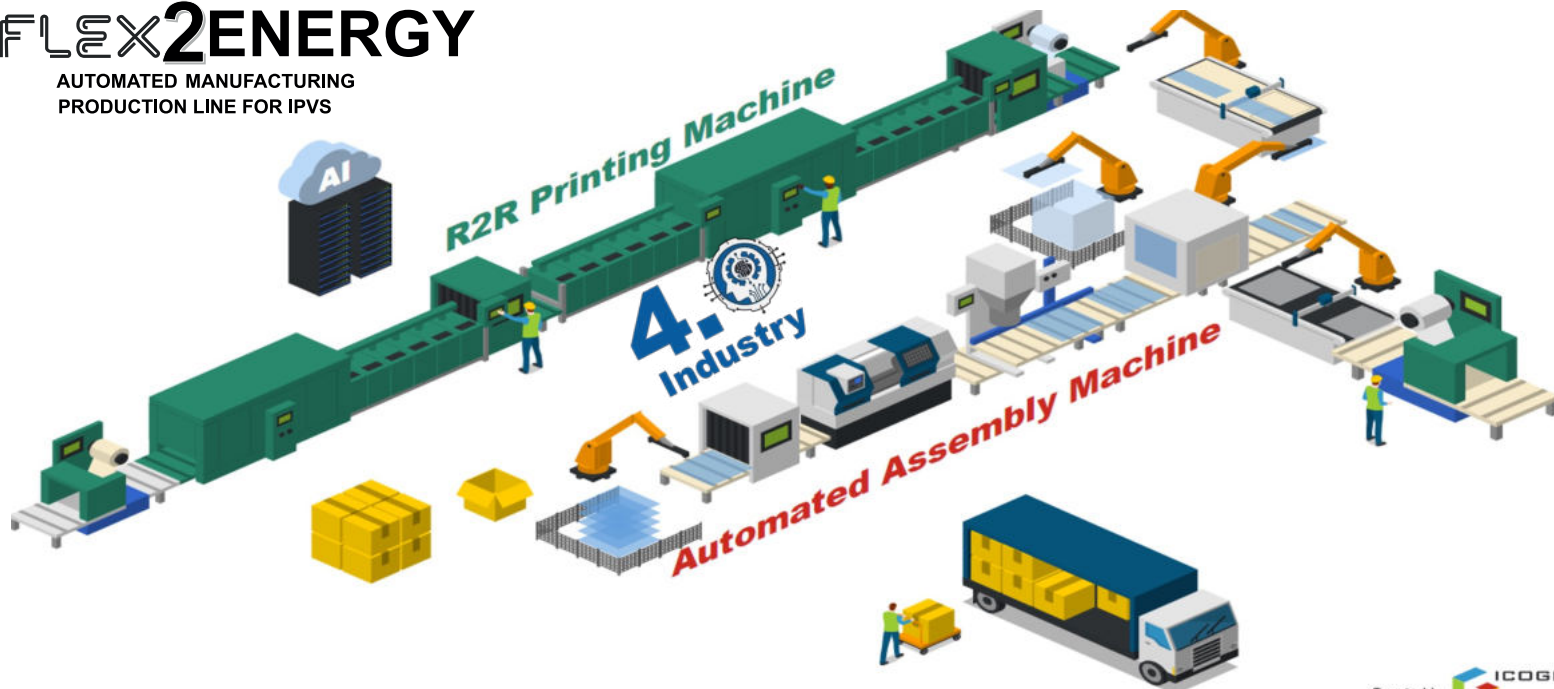
Flex2Energy project



Flex2Energy project – Consortium partners



Flex2Energy project



3.

Equipment



S2S

Lab



Test Solution



Easycoater

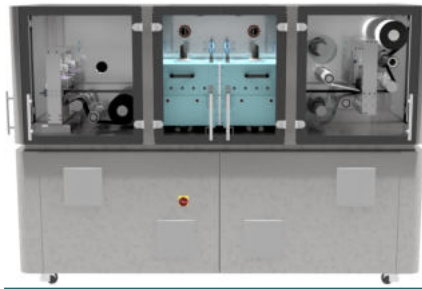


Easycoater Evolution

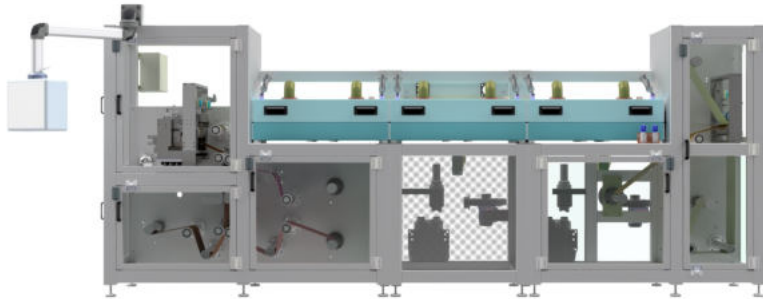
Today's equipment for lab scale R2R

R2R lab systems

Lab



Test Solution R2R



Basecoater R2R

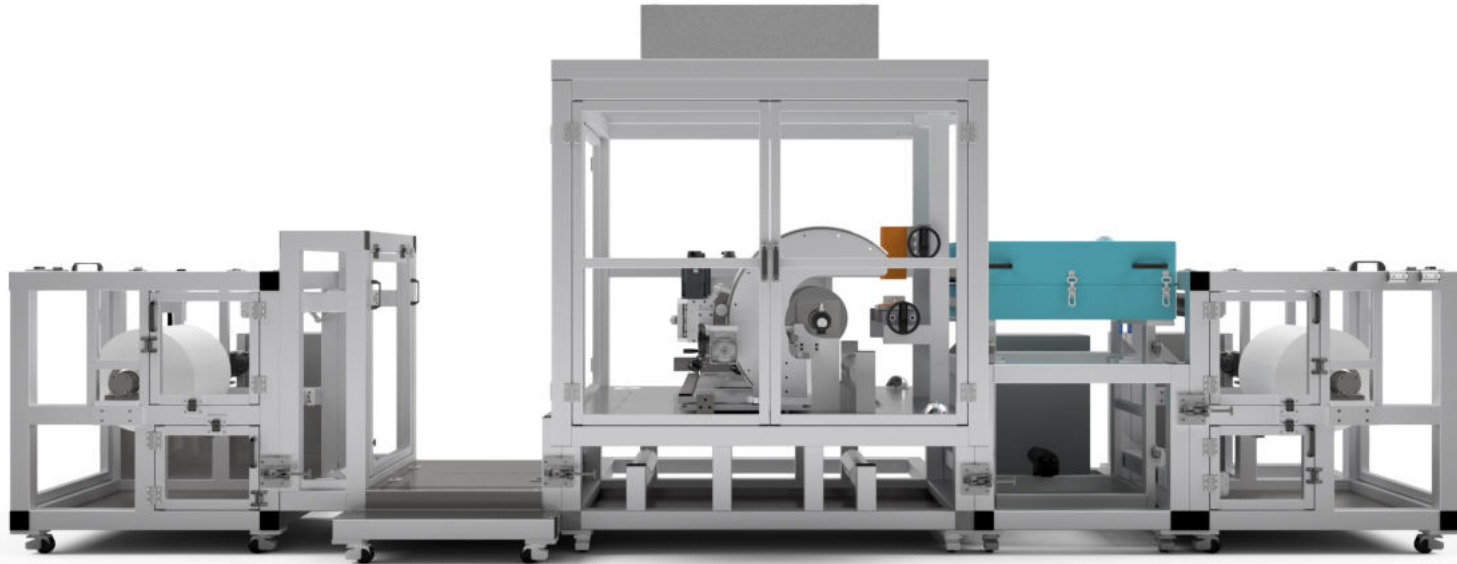


Smartcoater R2R

Today's equipment for pilot scale R2R

The Click&Coat™

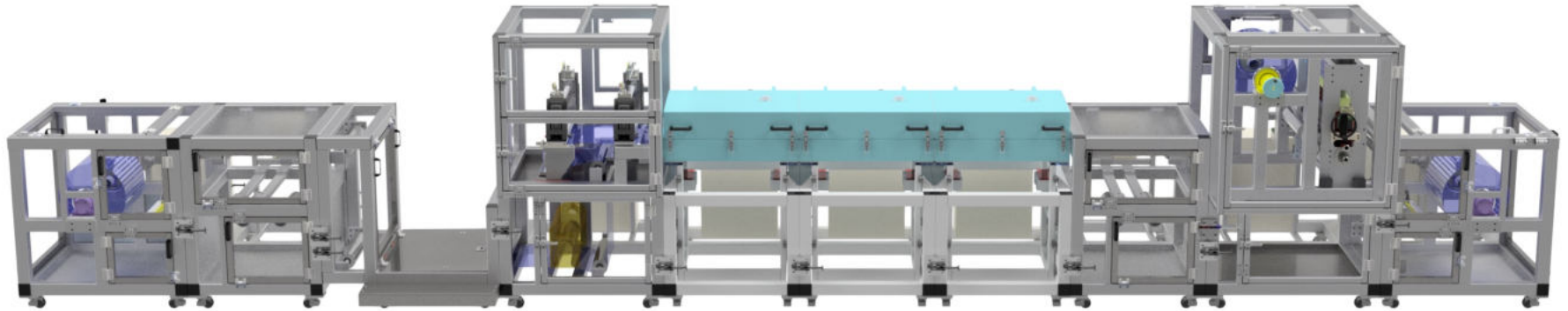
Pilot



Today's equipment for pilot scale R2R

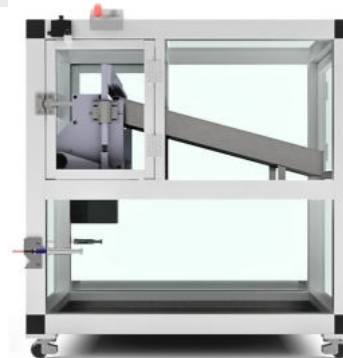
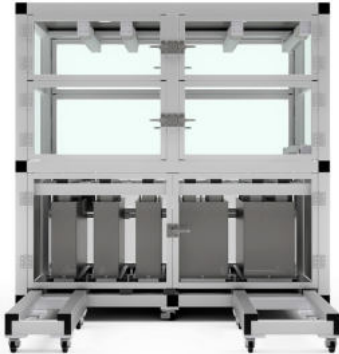
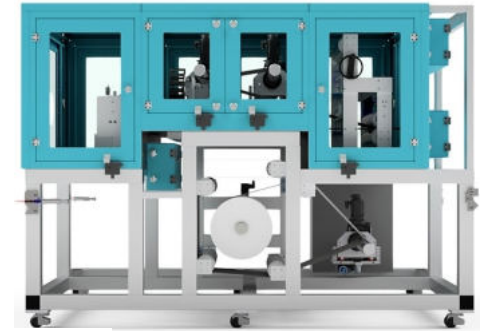
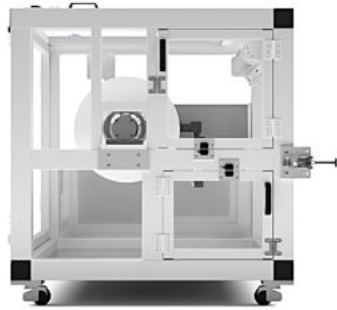
The Click&Coat™

Pilot



Today's equipment for pilot scale R2R

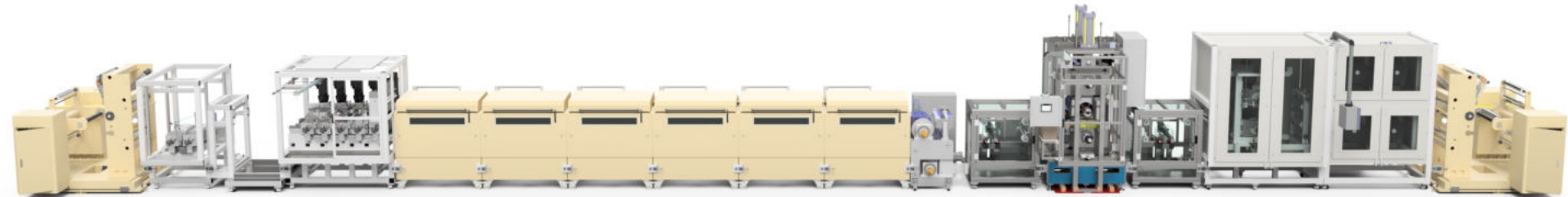
The Click&Coat™ single modules



Today's equipment for production

The Click&Coat™ in production scale in the R&D centre

Production



Today's equipment for production

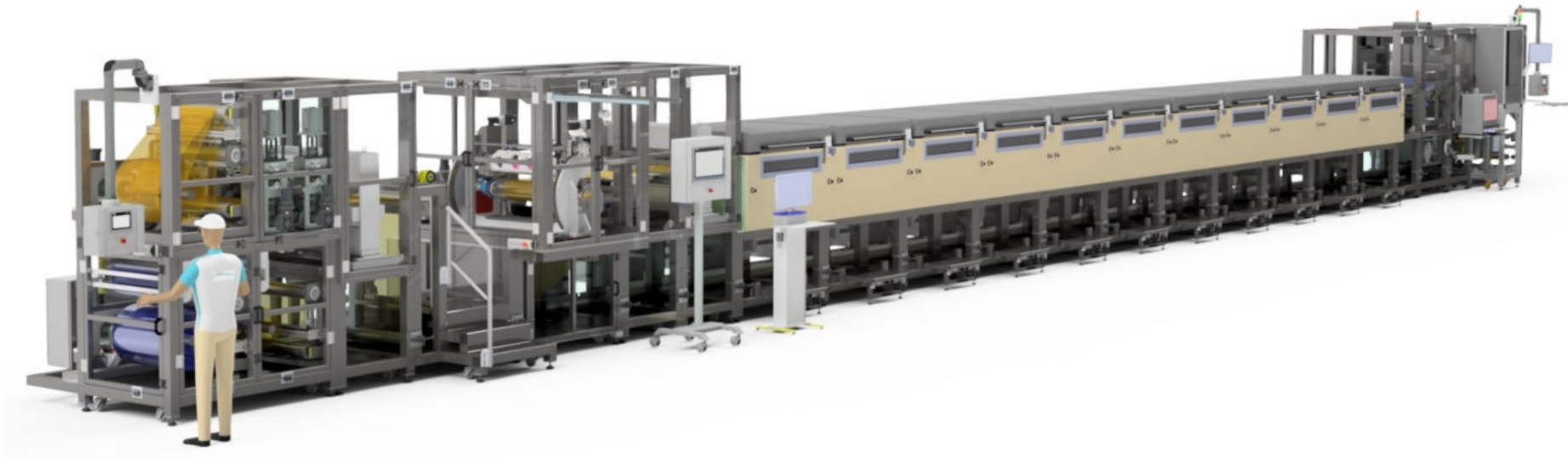
The Click&Coat™ in production scale



Today's equipment for production

The Click&Coat™ in production scale

Production

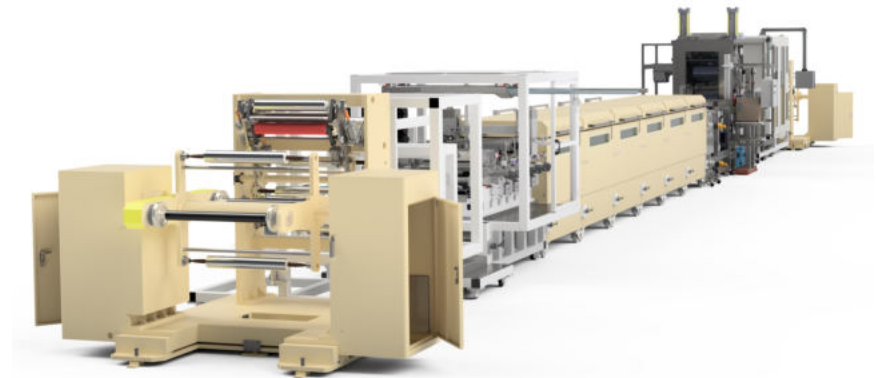


Production lines

Production



Production lines



Production lines

Bespoke equipments

Custom
made



Printed oleds



Optical film



Composite fibres

4.

R&D centre



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

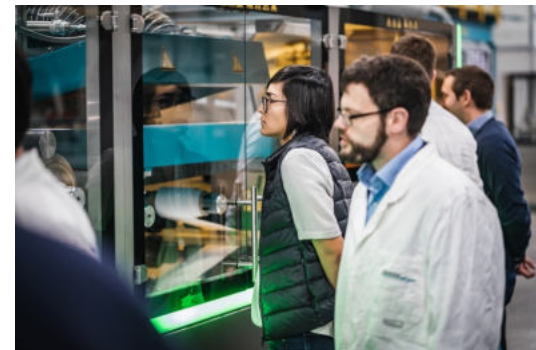
- ✓ Prototyping
- ✓ Proof of concept



Public funded research projects know-how

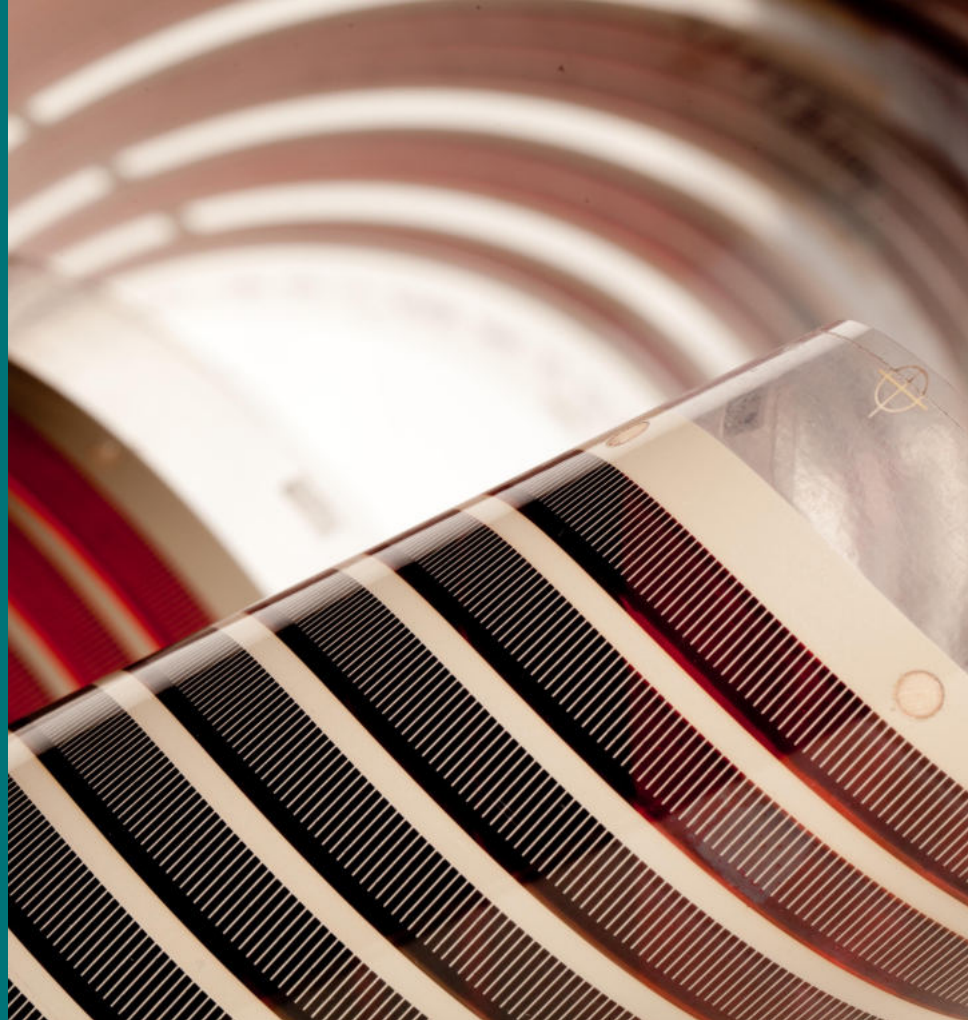
- ✓ German funded
- ✓ Horizon 2020
- ✓ Global 2+2 projects
- ✓ B2B projects

Coatema coating symposium for 23 years



5.

Contact



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 brochures & presentations



Coatema

Thank you

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