Devotion to advance coating and drying of fluid films is our ambition.

FMP Technology
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FMP Technology GmbH is a medium-sized company that sees itself as an innovation driver in the areas of coating and drying technology. A well-founded process know-how serves as a basis for developing and realizing of processes together with the customer and for designing and manufacturing the necessary equipment. With the supply of complete systems, such as the delivery of slot dies with coating station and feeding system, as well as industrial dryers, FMP offers its customers a pleasant turn-key experience. Depending on requirements and scope, FMP supplies the appropriate equipment for laboratory, pilot plant or production scale. FMP’s customers include manufacturing companies as well as suppliers of coating and drying machinery.
HEADQUARTERS IN ERLANGEN

MADE IN GERMANY, MANUFACTURED FOR THE WORLD.
“From my perspective, the market needs companies that bring new momentum with innovations based on a solid foundation of knowledge. This is what makes me enjoy coming to FMP every morning, to work with my employees on challenging processes and to implement them with solid machine technology. The sustainable creation of value for our customers in the field of coating and drying technology is our top priority at FMP Technology.”
Our USPs for your lasting success

1. Systematic Process Development and Design
2. Customized Slot Die Solutions
3. Unique Drying Solutions

Do you operate in one of these industries?

- Electronics
- Chemical Industry
- Aeronautics
- Food Industry
- Packaging
- Construction
- Adhesives
- Membranes
- Optical Films
- Electronic Films
- Batteries
- Automotive
- Medicine
- Textiles/Non-woven fabrics
- Pharmaceuticals
- Paper
- Printing
- Furniture
- Fuel Cells
- Decorative Films
- Printed Electronics
- Coil Coating

Then we are the right partner for you!
Air flow simulation of dryers
In general, engineering offers many tools for process development in the fields of analytics, numerics and empiricism. As a service provider, FMP utilizes these tools efficiently for new developments and the optimization of processes in the field of coating and drying technology. FMP's customers include both equipment operators and manufacturers in the scientific and industrial environment.

\[
\rho \left( \frac{\partial u_j}{\partial t} + u_i \frac{\partial u_j}{\partial x_i} \right) = \rho g_j - \frac{\partial P}{\partial x_i} - \frac{\partial \tau_{ij}}{\partial x_i}
\]
Design and optimization of drying processes:
- Energetic consumption analysis
- Analytical calculation of drying processes
- Design and process validation of existing dryers
- Numerical flow visualization inside the dryer and heat transfer determination
- Potential determination of the impingement-free convection technology in comparison to the conventional drying technology
- Determination of required drying lengths
- Performance of drying tests
- Heat transfer measurements

Design of slot die processes:
- Rheological investigation
- Analytical calculation of coating windows
- Performance of coating trials
- Design of peripheral equipment
- Numerical flow and structural analysis of slot dies

You can boost your drying capacity

Unsure about introducing slot die coating? Let’s do it together.
Trials and measurements substantiate your investment in slot die and drying technology

Technology Center at FMP Technology

- **Roll to roll coating line:**
  - Substrate width: 150 - 250mm
  - Machine velocity: 0.5 - 15 m/min
  - Dryer length: 3 m
  - Max. drying temperature: 160°C
  - Coating technology: Slot die
  - Other equipment: UV drying unit

- **Drying plant:**
  - Potential determination of the impingement-free convection technology
  - Substrate width: 150 - 250 mm
  - Machine velocity: 0.2 - 20 m/min
  - Dryer length: 1 m
  - Air outlet velocity: 0.3 - 4.7 m/s
  - Floating operation possible
  - Arrangement of the nozzles: either SenDry or PureDry
  - Max. drying temperature: 180°C

- **Sheet to sheet curtain coating line:**
  - Coating type: Curtain coating
  - Machine velocity: 20 - 125 m/min
  - Substrate size: DIN A4 sheets

- **Lab equipment:**
  - Rotational viscometer
  - Surface & contact angle measuring instruments

- **Several partners for large scale trials**
Slot die, coating station and feeding system work together perfectly
Starting with the core component – the slot die – to peripheral equipment, the FMP can offer everything needed for an optimal coating result. Depending on customer requirements, a slot die can be supplemented by a suitable feeding system, a coating station or a complete coating line.

- Width: 10 mm - 2500 mm
- Cross web distribution accuracy: ±1%, ±3% and ±5%.
- Chamber design:
  - Infinity
  - Flexcon, Flexcon²
  - Fan
  - Ring
  - Customer-specific special solutions
- Application: Extrusion, Bead, Web-tension and Curtain Coating Mode
- Options:
  - Liquid and electrical heating system
  - Special design of highly filled media
  - Fixed or flexible lips
  - Automatic or manual slot gaps adjustment
  - Different body materials and surface coatings
- Peripheral equipment:
  - Coating station for laboratory and industrial applications
  - Fluid delivery system
  - Flushing system
  - Assembly trolley

Fully customized slot dies fulfill all your customer needs
Fully automated coating and drying solutions
S2S plant: N4S

System length: 3 - 7 m depending on the drying equipment

Line velocity: 0 - 250 m/min

Slot die:
- Type: Infinity
- Width: up to 500 mm
- Cross web distribution accuracy up to ±1

Method: Curtain Coating

Medium: Water or solvent based liquids

Substrate: Sheets of all materials

Coating surface: up to 500 mm x 1000 mm

Options:
- Feeding system
- Mixing system
- Degassing unit
- Layer thickness measurement

Drying:
- Electrical heating
- Patentend impingement-free convection drying
- Conventional convection drying
- IR drying

High speed coating and drying in the smallest of space
High precision nano coating
S2S Plant: Nano

System length: 2 - 3 m
Line velocity: 0 - 3 m/min

Slot die:
- Type: Infinity Nano
- Width: up to 500mm
- Cross web distribution accuracy up to ±1

Method: Extrusion or Bead Coating Mode

Medium: Water or solvent based liquids

Feeding technology: Syringe pump

Height adjustment: Accuracy less than 1µm (motorized adjustment, manual)

Drying:
- Heatable plate
- Convection drying without impingement jet

Optional:
- Heatable feeding system
- Heatable slot die
- Additional measurement technology (layer thickness measurement, etc.)
- Additional laminar, purified air flow (FFU)
- UV curing

SHEET TO SHEET NANO COATING LINE
Perfectly suitable for high precision nano coatings

Highly sophisticated machinery guarantees perfect coatings
Unique impingement-free flotation dryer
Drying processes are an essential part of coating processes when solids are dissolved in any kind of solvent. The main criteria are drying velocity, drying quality and energy consumption. FMP offers solutions for both laboratory and industrial applications which can be integrated as stand-alone units in existing or new coating lines. The processes are individually designed, from which customized dryers are manufactured.

In addition to conventional drying methods, FMP's portfolio includes the patented impingement-free convection technology for sensitive or thick and thus highly diffusion-limited layers.
Drying solutions for continuous and discontinuous drying processes
## INDUSTRIAL AND LABSCALE DRYING SOLUTIONS

<table>
<thead>
<tr>
<th>Technical data:</th>
<th>SenDry</th>
<th>PureDry</th>
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<tr>
<td>Length: 0.5 - 50m</td>
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<tr>
<td>• Continuous</td>
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<tr>
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<tr>
<td>• Convective</td>
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<td>Outlet velocity</td>
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<tr>
<td>• Suction belt</td>
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<td>• Impingement nozzles</td>
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</table>

**Industrial realization has proven an increase of drying rates by a factor 4**

**Skin effects and the entrapment of solvents are prevented**