



## Equipment for PV materials

Thin film technologies  
PVD and PECVD coaters  
Contract research

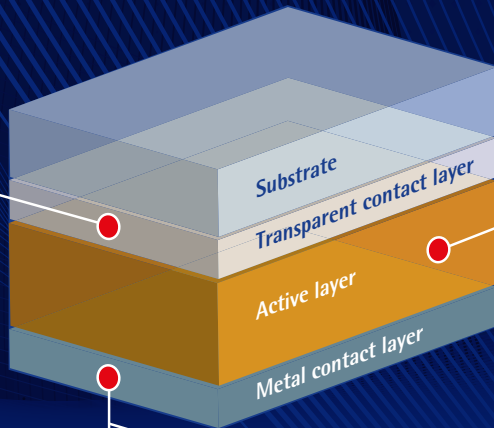


# Equipment for PV materials

Web and Glass coating systems



PECVD and Thermal evaporation coating systems



Web and Glass coating systems





## Capabilities of the technologies

- Transparent conductive coatings – TCO (ITO, ZnO, AZO or SnO<sub>2</sub>) by magnetron sputtering with ceramic target and metal targets in quasi-reactive and reactive processes for transparent coatings
- Metal and alloy coatings (Cu, Ag, In, Ti, Ni, Mo, Cr, NiCr, St.St., NiCo etc.) by magnetron sputtering and thermal evaporation for metal contact and active layers coatings
- Oxides and nitrides (SiO<sub>2</sub>, TiO<sub>2</sub>, TiN, Si<sub>3</sub>N<sub>4</sub> etc.) by magnetron sputtering with ceramic targets and metal targets in quasi-reactive and reactive process for antireflection, moisture-proof, and other protection coatings
- Preliminary drying by heating technique
- Plasma pretreatment by glow discharge and ion sources
- Vacuum lamination of web substrates

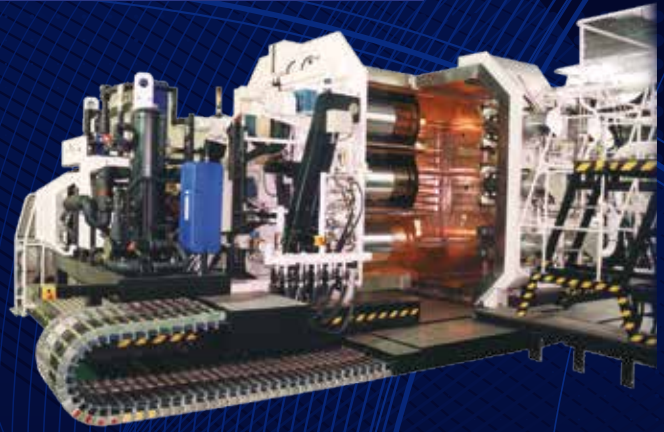
## Capabilities of the equipment

- Roll-to-roll coaters for metal and non-metal webs
- In-line sputtering systems for glass sheet
- PECVD coaters for amorphous silicon deposition
- Drying machines
- Vacuum laminators
- Customized vacuum coating systems

## Substrates

- Polymer materials:
  - width 0.3 to 2.0 m
  - thickness 25 to 300 µm
- Metal foils:
  - width 0.15 to 1.5 m
  - thickness 10 to 100 µm
- Glass: size up to 2.5 m x 3.5 m
- Powder materials: size 30 to 800 µm

Web coater P600MR



PECVD web coater



Glass in-line sputtering coater



Powder coater







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