



# Research & Development

Contract research  
Contract coating  
Multifunctional coaters

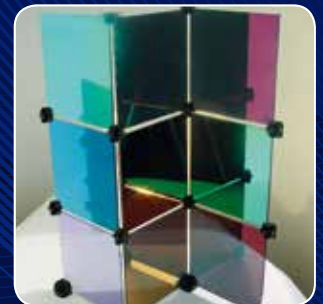
## Technologies

- Oxide and nitride coatings: ITO, AZO, GZO,  $\text{SiO}_2$ ,  $\text{TiO}_2$ ,  $\text{Nb}_2\text{O}_5$ ,  $\text{TiN}$ ,  $\text{Si}_3\text{N}_4$ , etc.
- Metal and alloy coatings: Ti, Cu, Al, Ag, Au, Sn, In, etc.
- Li coating (up to 20  $\mu\text{m}$ )
- Coating of the powders
- Heat removal technique for deposition of thick layers
- Decorative coatings
- Liquid metal feeding
- Coating on high porous (up to 90 %) substrates
- Modelling of optical layers
- Scaling of technologies for industrial applications



## Substrates

- Polymer films: PET, PE, PI, PTFE etc. (up to 600 mm wide and 6 to 200  $\mu\text{m}$  thick)
- Metallic foils and strips (up to 600 mm wide and 10 to 200  $\mu\text{m}$  thick)
- Foam materials (up to 600 mm wide and 1.6 to 2 mm thick)
- Fabrics (up to 600 mm wide and 50 to 250  $\mu\text{m}$  thick)
- Non-woven materials (up to 300 mm wide and 50 to 200  $\mu\text{m}$  thick)
- Glass (size up to 200 mm x 200 mm)
- Powders (diameter 30 to 400  $\mu\text{m}$ )
- 3D parts (size up to 400 mm x 400 mm x 800 mm)



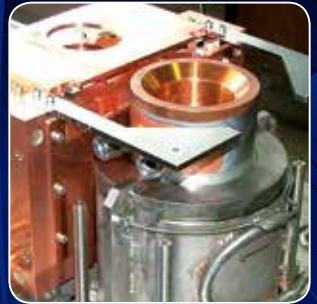
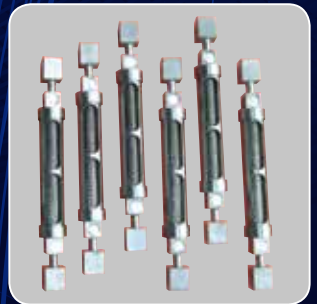
## Pretreatment

- Glow discharge
- Inverse magnetron
- RF discharge
- Ion beam treatment
- Degassing and drying



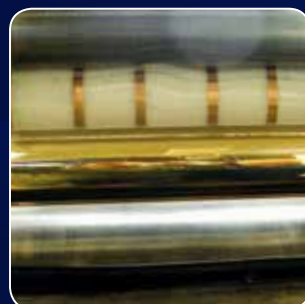
## Deposition methods

- Thermal evaporation:
  - Evaporation boats (our unique boats for Cu, Ag, Sn, In coating)
  - Electron beam gun
- Magnetron sputtering:
  - Reactive mode
  - Quasi-reactive mode
  - Metal mode
- Arc evaporation
- Vapor generator (Mg, Zn, Se, Zn-Mg alloy)



## Instrumentation

- Sheet resistance: in-line, off-line
- Optical measurements
- Mass spectrometry
- Thickness measurements
- Adhesion tests
- Process control by PEM
- Other tests in cooperation with partners





**Contacts:**

17 Krustpils Str.  
Riga, LV1073, LATVIA  
Tel: +371 67249-806  
Fax: +371 67139-506  
E-mail: [sidrabe@sidrabe.eu](mailto:sidrabe@sidrabe.eu)  
<http://www.sidrabe.com>