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ERICA

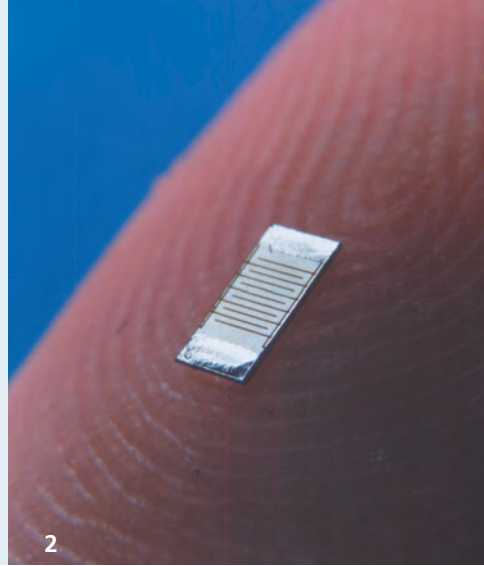
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**Vacuum cluster tool
for complex coating and structuring processes**



1

Solar cell module



2

Electron-beam structured thin-film resistor on finger tip for size comparison



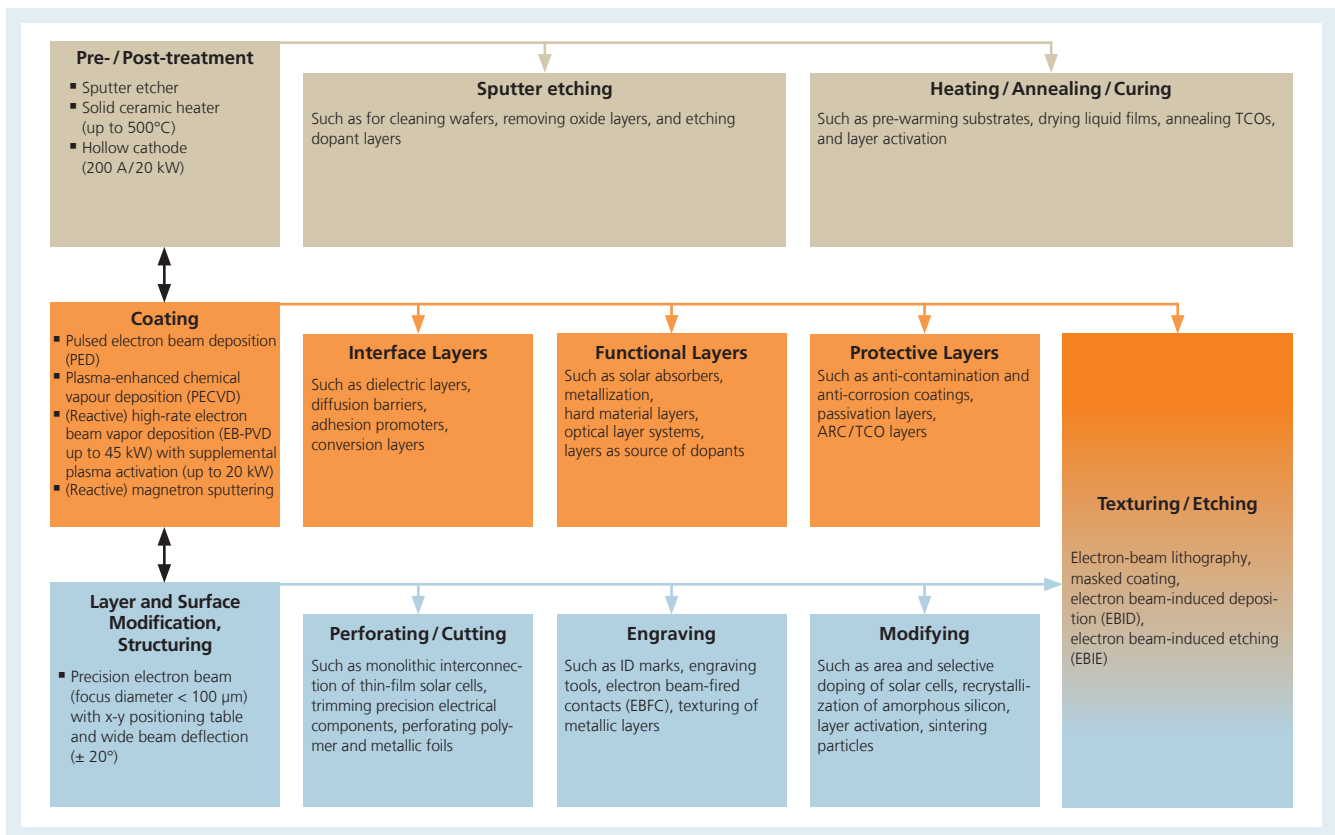
3

Pulsed electron beam for material ablation

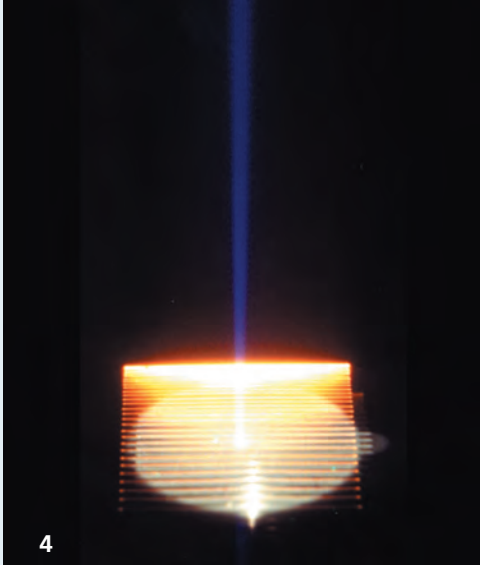
ERICA – Vacuum Cluster Processing System

Complex vacuum process chains can be simulated within the closed ERICA system. This makes it possible to carry out cost-effective technological development and feasibility studies of coating and structuring steps in any desired sequence. The five interlinked chambers in ERICA are equipped for pre-treating substrates, for vacuum-coating, as well as for modifying and etching these surfaces. The ERICA internal conveyor

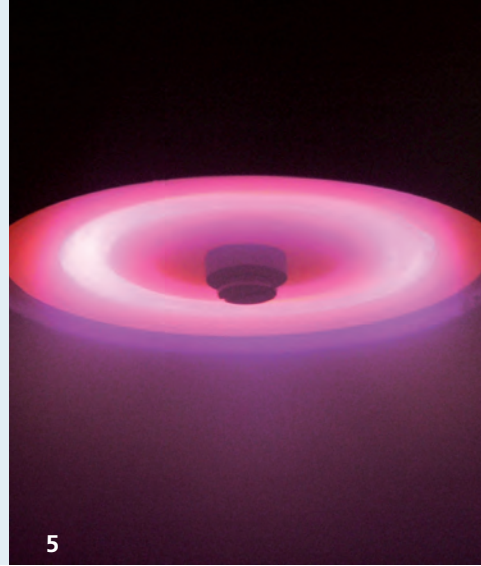
system is designed for flat substrates (silicon wafers, sheet glass, film, etc.) up to a diameter of eight inches and maximum thickness of 3.5 mm. The versatility of this prototyping system makes it ideal for technological development of complex process chains such as solar cell manufacturing, abrasion-resistant and optical coatings, as well as for etching features and modifying surfaces, for example.



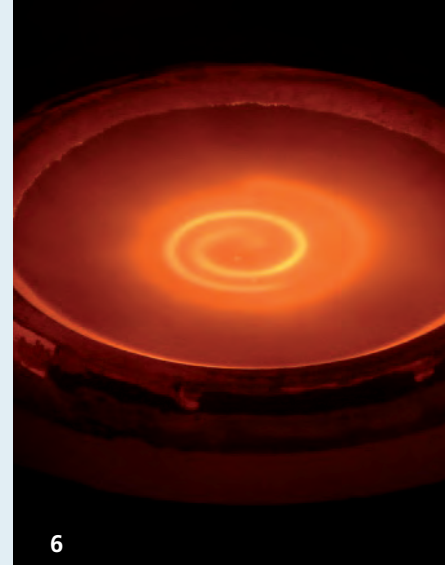
Technological capabilities of the ERICA cluster system



4
Surface modification using precision electron beam with large angular deflection



5
Sputtering process using ring magnetron



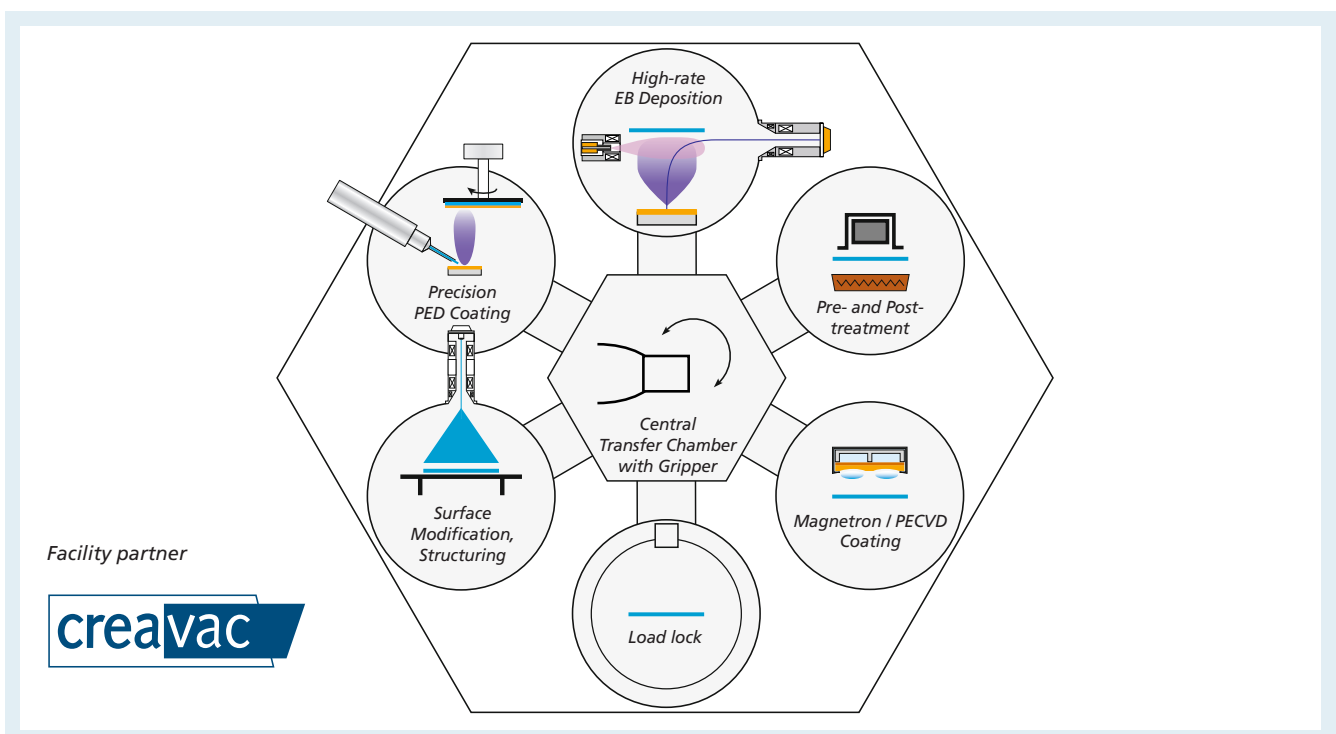
6
High-rate electron-beam evaporation

Applications

- Coating, etching and structuring steps in manufacturing solar cells and sensors, such as producing contact, barrier, and passivation layers, anti-reflection and transparent conductive oxide layers (TCOs), as well as monolithic electrical connections
- Coating and engraving of tools and small parts (such as sacrificial or enhancement layers)
- Metallization of plastics for decorative and electro-magnetic-compliance (EMC) applications
- Multilayer polymer cross-linking for printed conductors

Our offer

- Development of technology and feasibility studies for complex vacuum process chains at low entry-level pricing
- Diverse pre-treatment and post-treatment processes as well as various coating and layering technologies together in a single, synergistic facility
- Broad technological range and adaptability to meet your process requirements
- Physical and chemical pre-cleaning with ultrasound cleaning installation
- Analytical monitoring capability
- Pilot runs



Schematic of ERICA cluster system

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