

EMO

Laboratory coater with electron beam evaporator

Electron beam laboratory coater EMO

Coating of Metal Sheets and Strips, Energy Technologies

We deal with large-area vacuum coating of metallic plates and strips with high deposition rates. In addition to the environmental friendliness of our process, another advantage is the almost

inexhaustible range of layer materials that can be used which far exceeds the materials that can be applied for conventional surface modification.

Coating of Parts

We coat 3-dimensional objects made of metal, ceramics, or glass in order to adapt their surface properties and so improve their functionality and service life. Using vacuum coating technologies such as sputtering technology, plasma-activated high-rate deposition, and high-rate plasma-enhanced chemical vapor deposition

(PECVD), we improve the resistance of tools and components to corrosion, scratching, and abrasion. Decorative features, demanding optical properties, biofunctionality, and biocompatibility can also be achieved by applying suitable layers and multilayer systems.

Contact

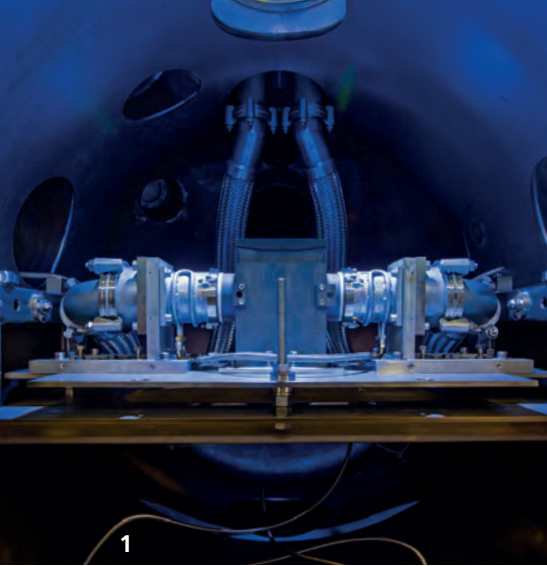
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Technical specifications

Electron gun	120 kW / 40 kV
Plasma activation	Hollow cathode arc sources (HAD process) Spotless arc activated deposition up to 1000 A (SAD process)
Crucibles	Water-cooled copper crucible Hot crucible (graphite, ceramics)
Substrate size (sheets)	max. 100 mm x 200 mm
Substrate speed	up to 0.1 m/s
Additional equipment	Radiation heater max. 4 kW Plasma etcher max. 3 kW DC magnetron max. 5 kW

Technologies

Coating processes:

- High-rate electron beam evaporation
- Thermal evaporation of sublimating materials
- Plasma-activated deposition processes (HAD and SAD process)
- Magnetron sputtering
- Magnetron PECVD process for sheets

Pre-treatment and post-treatment:

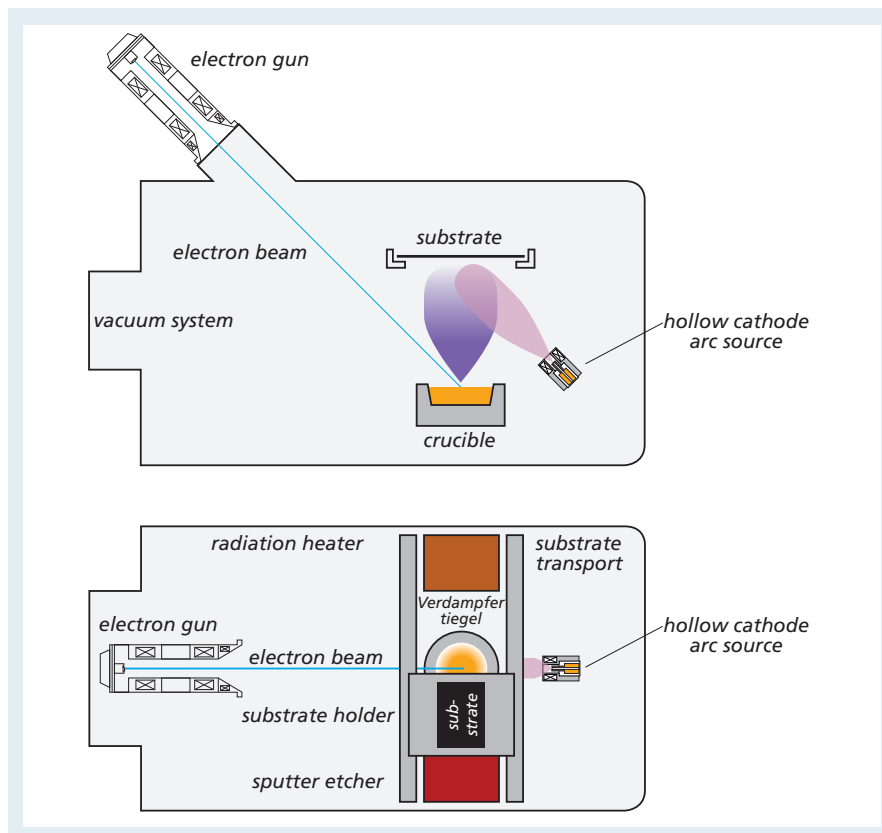
- Heating
- Plasma pre-treatment
 - Magnetron sputter etching
 - Hollow cathode plasma pre-treatment
- Interfacial layers

Electron beam melting

Test of key components for electron beam technology

Process control:

- Substrate temperature measurement
- Computer-based data logging



Scheme

- 1 View into the vacuum chamber
- 2 Transport system and evaporation unit
- 3 Vacuum chamber during a process