

## LB 9

### LABORATORY COATER

**Fraunhofer Institute for  
Organic Electronics, Electron Beam  
and Plasma Technology FEP**

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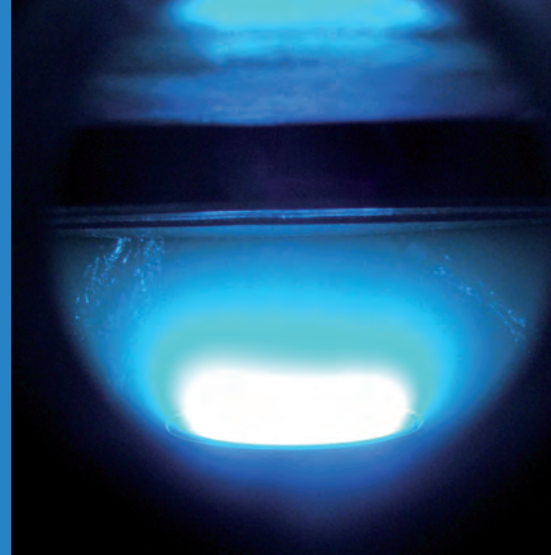
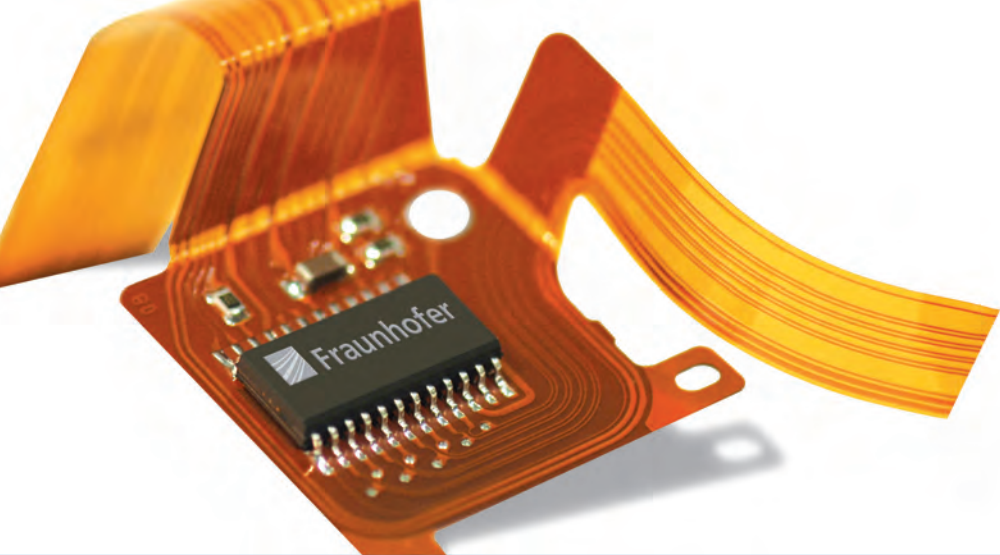
The surface treatment and coating give polymer films and other flexible substrates very valuable properties. Such modifications allow these materials to be used for a wide variety of innovative products.

The Fraunhofer FEP possesses a large number of pilot-scale plants. Equally important, however, is our small-scale experimental equipment for carrying out initial feasibility studies and technology development work.

The special feature of the LB 9 experimental equipment is the ability to combine key vacuum process technologies on a small scale. For example, the LB 9 has an evaporation unit, a hollow cathode for plasma activated

evaporation, and a dual magnetron system which allows metals and dielectric materials to be sputtered onto substrates. This flexibility of processing means that a wide variety of layers can be applied to the substrates. The substrates can also be heated. Both glasses and polymer films are suitable substrate materials.

The LB 9 allows the compatibility of new layers to be tested on different substrates, and also the quality of new sputter-targets or other process components can be evaluated, for example using plasma diagnostics.



## Technical specifications

base vacuum lower than  $10^{-4}$  Pa

substrate holder with heating capabilities up to  $450^{\circ}\text{C}$

substrate size  $110 \times 48 \text{ mm}^2$

different coating modules installable

dual magnetron system

- with circular targets  $\varnothing 100 \text{ mm}$
- target cooling, direct and indirect

boat evaporator, resistance-heated

crucible evaporator, radiation-heated

combination of evaporation and plasma-activated evaporation with ion densities up to  $10^{20} \text{ m}^{-3}$

plasma diagnostics using an ion energy analyzer

## Technologies

### Plasma-activated high-rate deposition

- boat evaporator
- radiation-heated evaporation
- plasma-activated evaporation using hollow cathode arc discharge

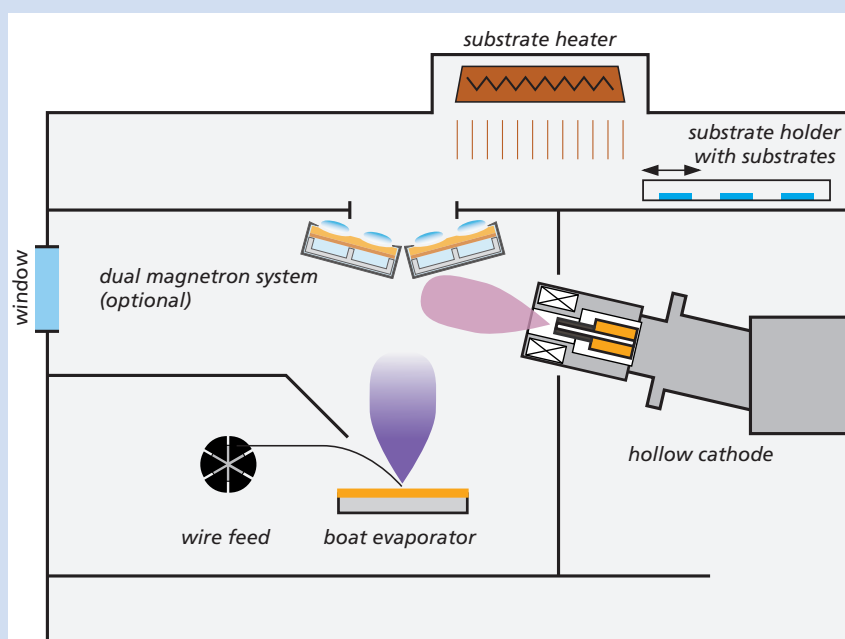
### Pulse magnetron sputtering

- dual magnetron system
- power supply for pulsed DC and RF
- metallic and reactive process management

### Magnetron PECVD

- monomer inlet for liquids and gases
- dual magnetron system as plasma source

## Scheme



## Our offer

- feasibility studies
- process development



*We focus on quality  
and the ISO 9001.*