

ND-SP Ultrasonic spray coater

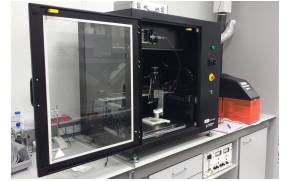
<https://search.researchequipment.wur.nl/SearchDetail.aspx?deviceid=ef654554-e2dd-49fa-a036-1eda6e19d295>

Brand

Nadotech Innovations

Type

ND-SP



Contact

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Organisation

Agrotechnology & Food Sciences Group

Department

Shared Research Facilities

Description

Polymer thin film coatings are of interest for a large number of applications. Their use ranges from photovoltaic cells to chemical and biological sensors to biomedical applications. In comparison with other coating techniques, such as drop casting, spin coating, inkjet printing, and screen printing, spray coating has the advantage of being able to coat three dimensional micro structures.

Conventionally, air pressure is used for atomization, i.e. to break up the liquid into tiny droplets. Alternatively, ultrasonic atomization uses high frequency sound vibration to generate a fine mist of droplets. Ultrasonic spray coating is generally preferred for high tech applications, since it generates smaller, more uniform droplets, enabling precise and reproducible conformal coating on planar and (micro)structured surfaces.

This equipment is located at Surfex (Plus Ultra, Bronland 12, Wageningen Campus).

Technical Details

The spray coating system includes a syringe pump, ultrasonic generator and nozzle. It is also equipped with a hotplate (max. 100 oC) and a laser pointer. The system is enclosed by a ventilated cabinet.

- Maximum sample size 250x250 mm²
- Nozzle distance: 5-70 mm
- Nozzle speed: 20-2000 mm/min
- Spray width: 10-80 mm*
- Flow rate: 0.01-20 ml/min*
- Maximum viscosity: 30 cPs
- Droplet size: 15-40 µm

* range depends on nozzle type

More information: Nadotech innovations: <https://www.nadotech.com>

Applications

Ultrasonic spray coating can be used for depositing polymer thin film coatings for various applications, e.g.:

- Energy (fuel cells, solar cells)
- Electronics and MEMS
- Medical devices and sensors