

ATTO low pressure plasma system

<https://search.researchequipment.wur.nl/SearchDetail.aspx?deviceid=95bd8130-379d-4242-bd74-7f1f2760f723>

Brand

Sinvacon bvba

Type

Contact

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Organisation

Agrotechnology & Food Sciences Group

Department

Shared Research Facilities

Description

In the low-pressure plasma technology, gas is excited in a vacuum by supplying electrical energy. This results in energetic ions and electrons, as well as other reactive particles, which constitute the plasma. Surfaces can then be effectively altered.

There are three plasma effects:

- physical removal of material by ion bombardment;
- chemical reaction of the ionized gas with the surface;
- UV radiation breaks down long-chain carbon compounds.

The effect of the plasma changes by varying the process parameters such as pressure, power, process time, gas flow and composition.

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

Technical Details

Generator: 13.56 MHz / 50 W fixed matching

Chamber

- material: glass
- volume: 10.5 litres (diameter 211 mm, length 300 mm)

Vacuum pump: scroll pump (Edwards nXDS)

Gas supply

- 2 gas channels via needle valves
 - process gases: air, oxygen, argon, nitrogen
- Control: manual, process time via analogue timer

Applications

Plasma is used in areas where it matters to change the surface properties of materials. It is possible to modify virtually any surface with this technology. The main applications of plasma treatment are:

- Cleaning;
- Activation;
- Etching;
- Deposition.

