

Atmospheric pressure plasmas for pre-treatment and functional coatings

Transfer offering

Atmospheric plasmas offer a wide application spectrum and can be used universally for almost all material classes. Starting from plasma activation and fine cleaning, e.g. of plastics, glass or metal surfaces, the developments have progressed also towards biological systems (disinfection, plasma medicine) and the large field of functional coatings (APPCVD).

Approach

INNOVENT possesses an extensive range of plasma technologies to develop customized solutions:

Spot-like plasma sources – Plasma jets, DBD			
No.	System	Supplier	Power
(1)	kINPen	neoplas	ca. 10 W
(2)	Piezobrush PZ2	reylon plasma	ca. 30 W
(3)	Plasma MEF	Tigres	30 – 500 W
(4)	Plasma T-SPOT	Tigres	230 – 500 W
(5)	Plasma CAT	Tigres	60 – 600 W
(6)	Openair Plasma PFW 10	Plasmatreteat	ca. 1-2 kW
(7)	InoCoat 3 (rented)	Inocon	up to 10 kW

Areal plasma sources – Plasma jets, DBD			
No.	System	Supplier	Power
(8)	RPS30 MSDBD (Multi-hollow dielectric barrier discharge) 2 x 2 cm ² plasma area	ROPLASS	6W, 30W
(9)	RPS400 DCSBD (Diffuse coplanar surface barrier discharge) 20 x 8 cm ² plasma area	ROPLASS	up to 400 W
(10)	Plasma MEF, Multi-jet system; 14 nozzles --> 10 cm treatment width	Tigres	up to 2,8 kW
(11)	Panel Treater; 50 cm treatment width	Ahlbrandt	0,6 – 1,6 kW
(12)	Corona Classic (Series 3000), integrated in sol-gel line; 40 cm treatment width for Roll-to-Roll applications	Ahlbrandt	up to 2 kW

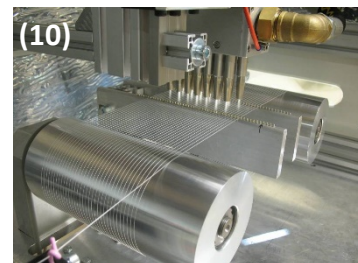
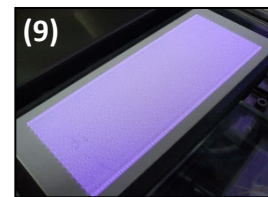
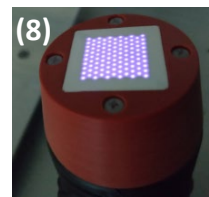


Plasma-laboratory

Sources: INNOVENT, neoplas, Tigres, Inocon, ROPLASS



UR5 3D manipulator



Advantages

- Custom-made process development
- Treatments / coatings applicable local, areal, 3D
- Plasma systems partially usable for mobile on-site experiments
- Tailor-made surface properties by choosing the most effective plasma and optimized parameters
- APPCVD: Oxides, composite layers till polymer coatings

Development status and property rights

Know-how with atmospheric pressure plasmas has been generated in a variety of applications and transferred into treatment / coating processes.

The application of the atmospheric plasma technique for coatings is protected by a number of patents, as well as systems for precursor delivery.