ELTECH ENGINEERS PVT LTD

We treat anything...
Since 1992..

PLASMA SURFACE TREATMENT

FOR IMPROVED

CLEANING | ACTIVATION | ETCHING | COATING

MAKE IN INDIA

WWW.ELTECH.IN

VACUUM PLASMA CLEANER

The **Eltech Vacuum Plasma System** model suitable for Plasma Cleaning, Plasma Activation, Plasma Etching & Plasma Coating.

The plasma cleaner can be used for modifying surfaces of various materials such as Polymers, Glass, Metals & Ceramics. Depending upon the material to be treated recommended gas/gasses, power & power supply should be used for higher efficiency and to achieve required results.

The system is able to work with multiple gasses like Air, Argon, Oxygen, Hydrogen, Nitrogen and many other with the help of rotameters or MFCs.

As with our inbuilt safety interlocks along with the various standard instruments the user can operate the system with ease.

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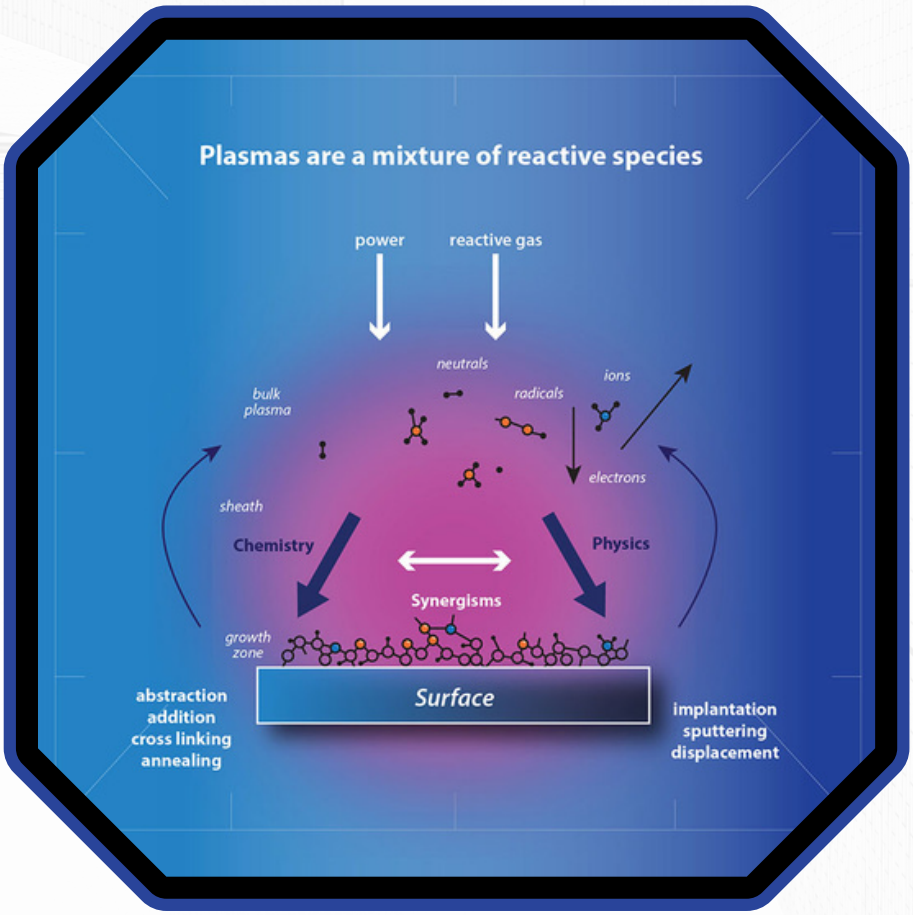
WORKING PRINCLE OF
VACUUM PLASMA

What is Plasma Treatment?

Plasma treatments are used to alter the surface properties of a wide range of materials to make them easier to bond, glue and paint. By treating parts we both clean and activate the surface, improving their adhesion characteristics.

It's useful to start by defining what a plasma is. Solid, liquid and gas are the three states of matter we are all familiar with. We can move between the states by adding or removing energy (e.g. heating/cooling). If we continue to add enough energy, gas molecules will become ionised (lose one or more electrons) and so carry a net positive charge. If enough molecules are ionised to affect the overall electrical characteristics of the gas the result is called a plasma. Plasmas are, therefore, quite rightly, often referred to as the fourth state of matter.

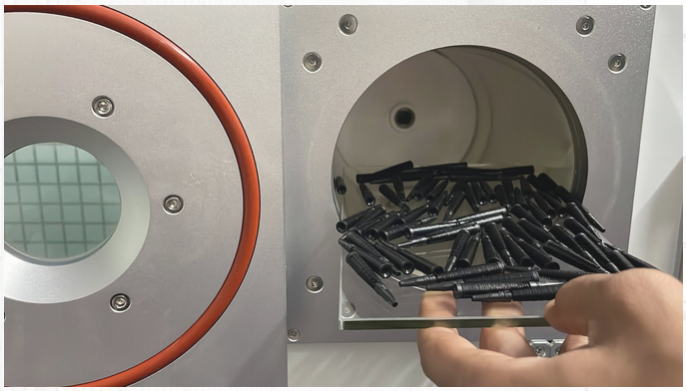


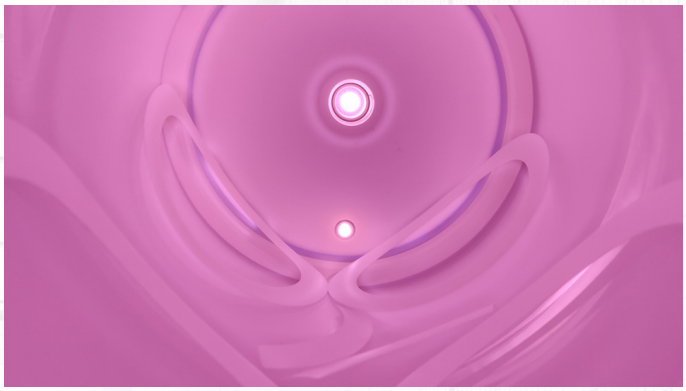
A plasma contains positive ions, electrons, neutral gas atoms or molecules, UV light and also excited gas atoms and molecules, which can carry a large amount of internal energy (plasmas glow because light is emitted as these excited neutral particles relax to a lower energy state). All of these components can interact with the surface during plasma treatment. By choosing the gas mixture, power, pressure etc. we can quite precisely tune, or specify, the effects of the plasma treatment.

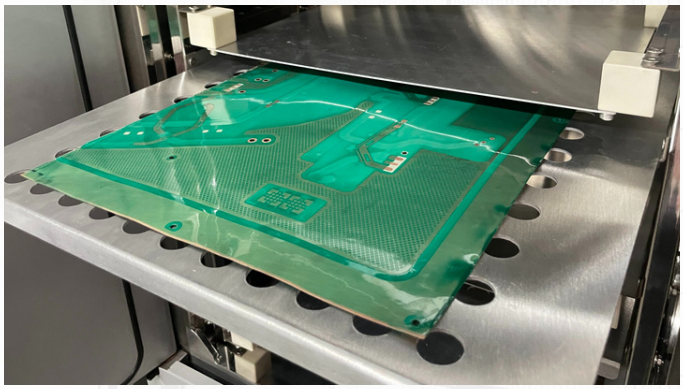
APPLICATIONS

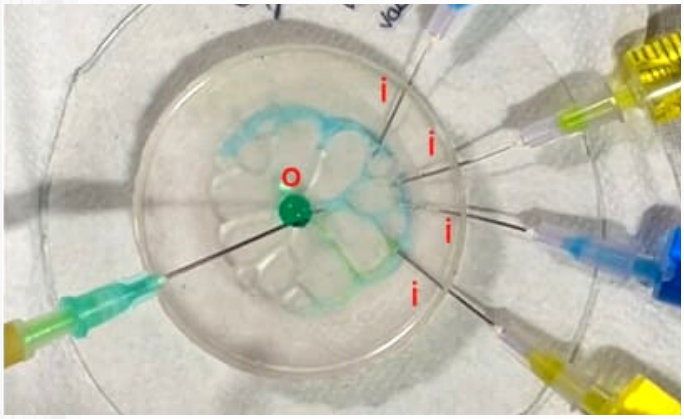
PLASTICS & ENGINEERED POLYMERS

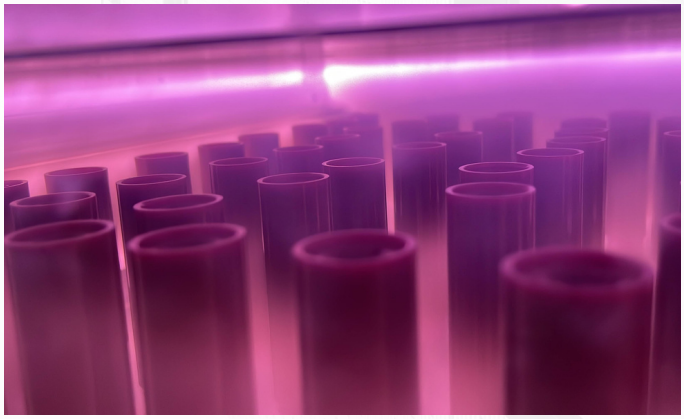
GLASS METALS CERAMICS

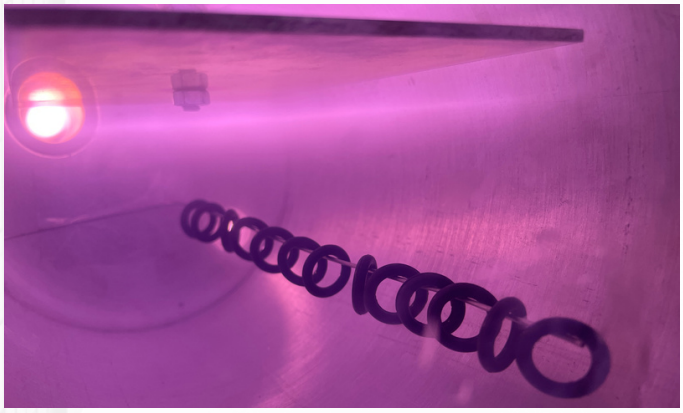


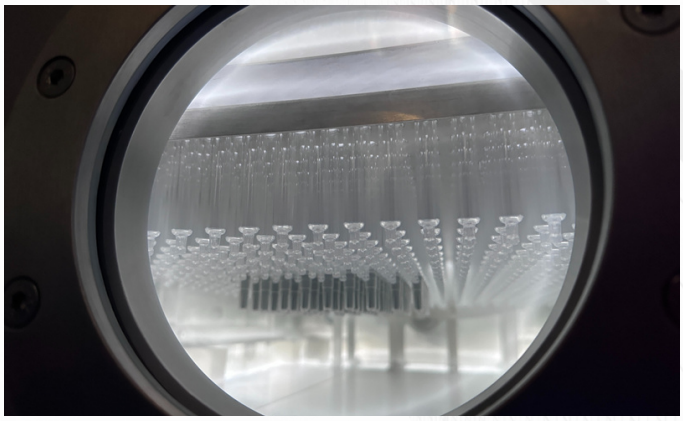








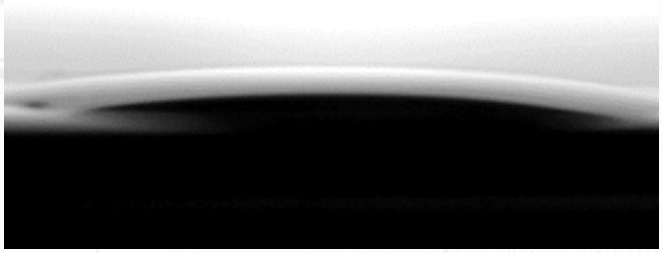


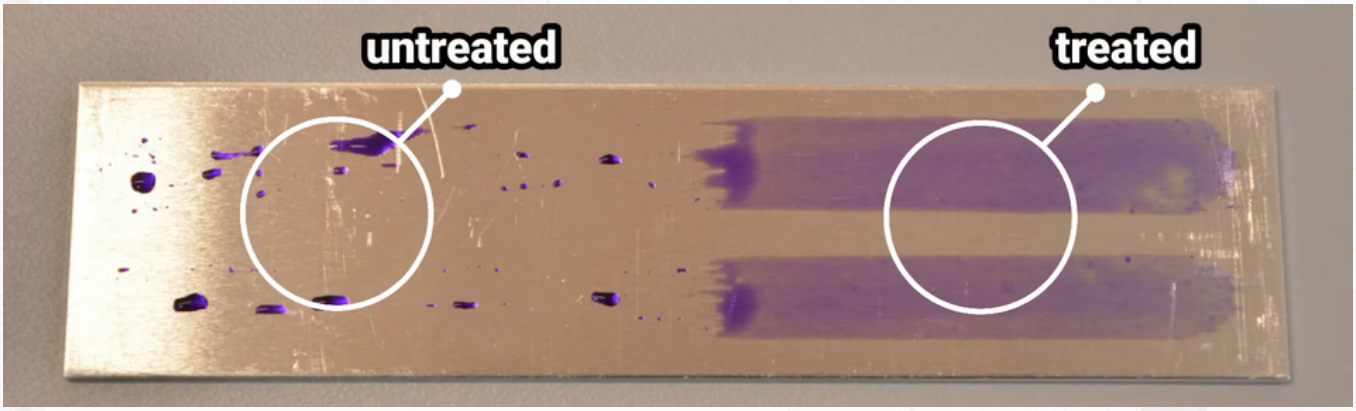


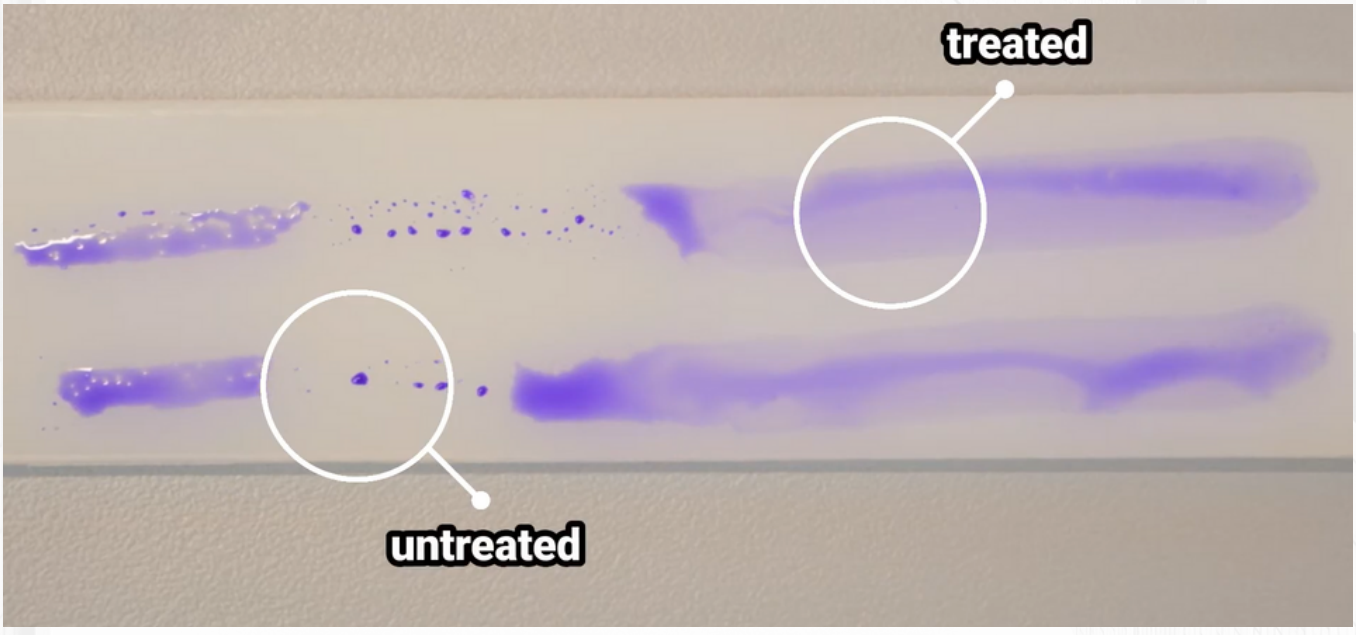
DIFFERENCE BETWEEN PLASMA TREATED & UNTREATED

HYDROPHOBIC

HYDROPHILIC







TECHNICAL SPECIFICATIONS

Electrical Configuration: 440 VAC, Single Phase, 4 Wire, 15A

Process: Automatic, PLC as an option

Generator: LF (Low Frequency, kHz) and RF (Radio Frequency, MHz)

Power: 300, 500, 600, 1000, 2000, 3000, 5000 Watts with Auto Matching Unit

Vacuum Pump: Two Stage Rotary Vane Pump Oil type, Scroll type Dry Pump or Mechanical Booster combined with RVP.

Oil Type - Mineral Oil for Inert Gasses and Fomblin Oil for Oxygen or any other corrosive gasses.

Pressure Gauge: Pirani Sensor

Working Pressure: 0.2 - 0.5 mbar

Chamber Dimensions: Customized depending upon the production.

Chamber Material: SS or Quartz

Part Carrier Material: SS, Quartz or Aluminum

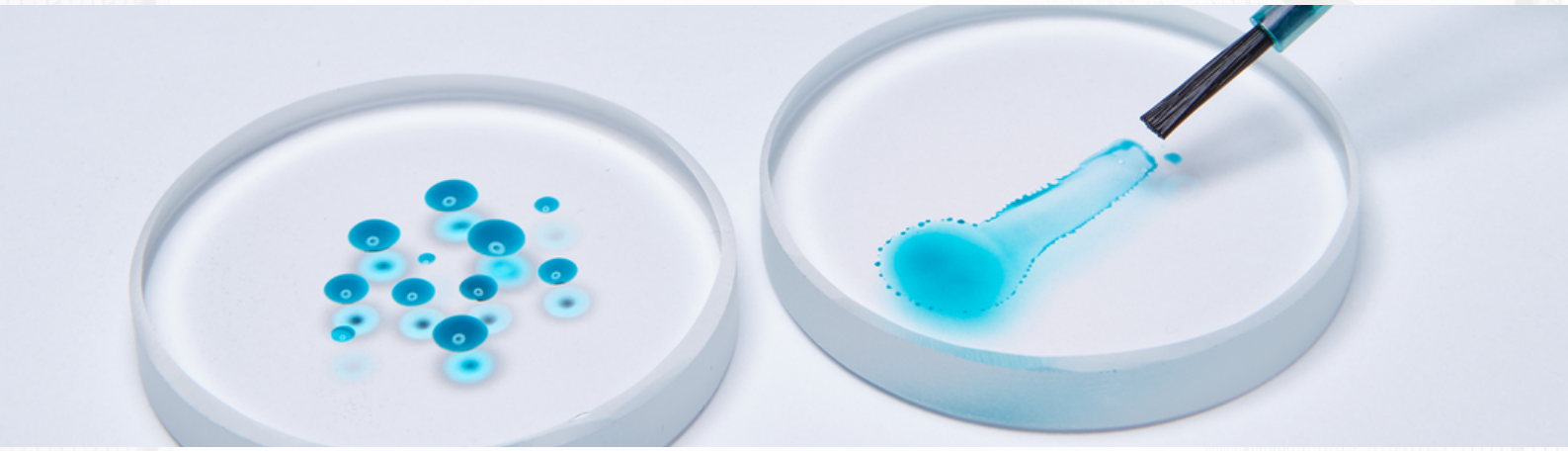
Gas Channels: Rotameters or MFCs (Mass Flow Controller)

Door Configuration: Removable or Fixed

Eltech strives for continuous improvement and specifications are subject to change without notice.

FEATURES & BENEFITS

- COMPACT BENCHTOP UNITS
- USER FRIENDLY
- RECIPE STORE OPTION
- FAST TREATMENT TIME
- PRECISE
- REPEATABLE
- NO HAZARDOUS EMISSIONS
- EASY TO INSTALL AND USE
- STANDARD OR CUSTOMISED SYSTEMS
- MULTIPLE PROCESS GAS OPTION
- CONTROLLED PROCESS
- COST EFFICIENT
- VARIOUS CHAMBER DOOR CONFIGURATION
- HIGHLY EFFICIENT ELECTRODE DESIGN
- HIGH DIELECTRIC INSULATORS
- MULTIPLE TRAY OPTION



FREQUENTLY ASKED QUESTIONS

How long can treated (activated) components be stored before further processing?

The storage time of treated components is dependent on activation time and the material and ranges from a few minutes to several months. Therefore, it is often necessary to carry out tests on site.
Metals, ceramics, glass and elastomers: about 1 hour
Plastics (excluding elastomers): several days, weeks, months

How should treated components be stored?

After plasma treatment, it is advisable not to store the parts in the open, as they attract dust, organic contamination and humidity.
Shrink-wrapped components have a substantially longer shelf life than those left in the open.
Components treated by us in the frame of surface treatment services are packaged in close consultation with the customer e.g. certified silicone-free PE bags, ESD packaging, or the customized packaging material provided to us.

Why should the treated parts only be touched with gloves?

Plasma removes organic but not inorganic impurities. As skin contact from the fingers, for example, contaminates the surface with salts (inorganic contaminants), gloves must always be worn when handling components.

How do you measure a plasma activation?

- Contact Angle / Wetting Angle
- Dyne Test Inks
- Cross-Cut Test

30 YEARS OF EXCELLENCE

GET IN TOUCH WITH US

Eltech Engineers Pvt Ltd

MADE IN INDIA

Mfg's of : Corona Treatment Systems, Plasma Treatment Systems, Static Eliminators & Ionizers, Induction Cap Sealers & Ozone generators.

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