henniker plasma

Plasma clean
Improved wettability and adhesion
Functional nano-coatings

Plasma surface treatment.

Nova advanced benchtop plasma system

www.plasmatreatment.co.uk

Nova advanced benchtop plasma systems.

Compact, automated plasma system combining research flexibility with industrial precision.

The **Nova** is Henniker's most versatile benchtop plasma treatment system. Incorporating the same proven architecture as our flagship Nebula range, the **Nova** brings the full power of industry-grade automated plasma processing to the lab and to small scale production facilities.

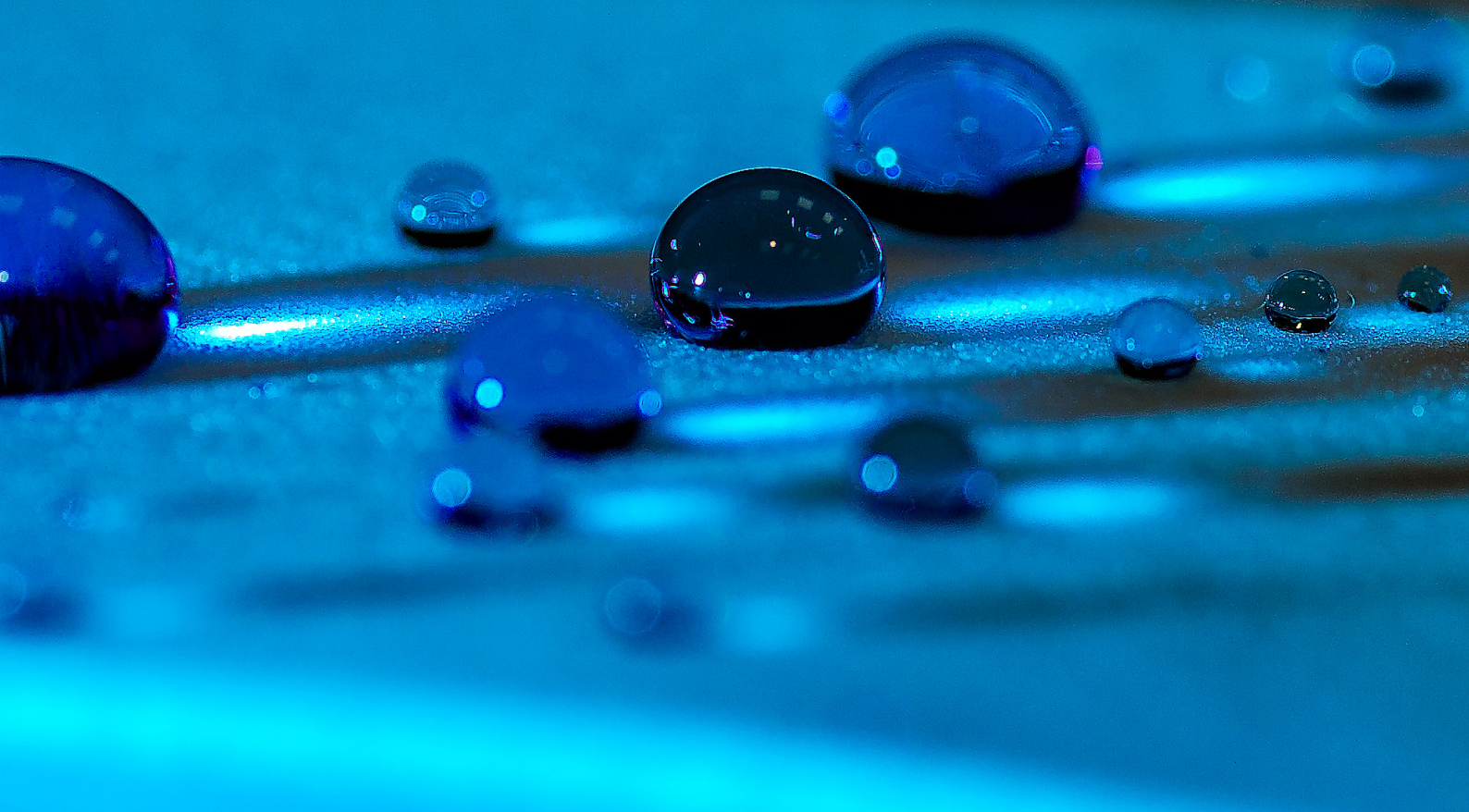
Fully automated, recipe-driven, and compatible with Henniker's optional CoatX® nano-scale coating technology, The **Nova** empowers researchers and small production teams to achieve repeatable, regulated-ready surface cleaning, activation and coating - with seamless scalability to Henniker's higher capacity Nebula systems.

Key Benefits:

- **Compact:** Industry performance on the laboratory scale. Processes and results transfer seamlessly from lab to production.
- **Fully Monitored Processes:** User editable process step library with parameter range monitoring, ensuring the highest standards in surface treatment.
- **Multi-Material Capability:** Treatment of complex geometries including polymers, metals, glass, elastomers, textiles and 3D printed parts.
- **Applications:** Surface preparation for cleaning and reliable bonding & adhesion. Compatible with the CoatX® technology platform for conformal, environmentally friendly nano-scale functional coatings.

Example Applications:

- **Medical & Biotech:** Cleaning, activation, and functional coatings for biotech and medical devices.
- **Automotive:** Cleaning of metals and alloys. Improving bond reliability and joining of dissimilar materials.
- **Electronics:** Cleaning and activation of metal pads prior to soldering, wire bonding, and encapsulation. Barrier coatings for consumer and industrial electronics.
- **Aerospace:** Ultrafine, precise cleaning of critical parts where total quality management is key.



CoatX® Technology.

Extend plasma capability into nano-scale functional coatings.

Nova can be configured with Henniker's CoatX® technology platform, enabling controlled plasma polymerisation for the creation of thin, functionalised surface layers. CoatX® allows researchers to deposit hydrophobic, hydrophilic, or chemically tailored films that deliver specific surface properties without affecting the bulk material.

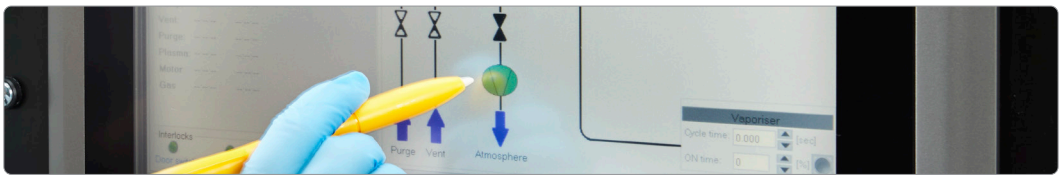
Applications include:

- **Microfluidics and biomedical coatings**
- **MEMS device functionalisation**
- **Barrier and adhesion layers** for advanced materials
- **Optical and electronic interfaces**

This powerful platform transforms **Nova** from a cleaning and activation tool into a full surface engineering workstation, bridging the gap between conventional plasma treatment and advanced plasma coating R&D.

In control.

Nova plasma systems operate under full PLC control via the Portals™ HMI, a dedicated user-friendly software interface featuring both simple recipe selection with user privilege access levels, and custom configuration options which address both research and production requirements. Integrated chart and MIMIC diagrams show each process stage in real time, with alarms, interlock status, and automatic data archiving in .CSV and .PDF formats.



Powerful Recipe Editor & Library

The built-in recipe editor lets you define complete processes with unlimited steps, each with unique parameters and adjustable limits. Up to three gases can be selected from the gas library, with fully controllable mixing ratios.

A stable plasma power supply and PID-controlled pressure system ensure highly reproducible results.

Automatic/Manual Operating Modes

Operators with appropriate access privileges can operate the system in fully manual mode, allowing for rapid testing of new process steps and aiding in detailed system diagnostics.

The full user process library is also available for execution in automatic operation mode, ensuring consistent and repeatable performance.

Batch Traceability

All process data is time and date stamped and stored along with operator details for instant recall and display or for export for offline record keeping and analysis.

An optional barcode scanner can be used for further batch traceability in conjunction with plasma process indicator labels for hard copy evidence of successful processing.

Key features.

Modular design: Uses proven Nebula sub-assemblies adapted to a compact chassis.

Pre-set and custom recipes: Store and recall coating parameters for repeat experiments.

Integrated vacuum system: Supports stable, controlled process environments.

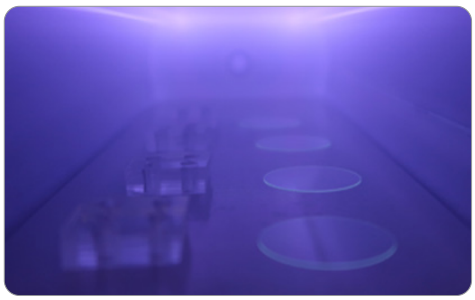
Compatible with a wide-range of precursor chemistries: Closed-loop inlet design for handling vapour-phase chemistries.

Multi-material capability: Compatible with polymers, metals, glass, elastomers, textiles, and 3D printed substrates.

Proof in practice.

Francis Crick Institute
Microfluidics Research

Henniker plasma systems are trusted by leading research institutions such as the Francis Crick Institute, where plasma cleaning and activation underpin PDMS bonding in microfluidic device fabrication. The same process precision is now available in Nova, enabling reliable R&D results and direct scalability to Nebula production systems.



The Making Lab - PDMS and glass cover slips

Our clients.

epigem
porvair filtration group
Imperial College London
THE FRANCIS CRICK INSTITUTE
MERCK
ELECTROSPINNING COMPANY
ULTRA PHARMA
AUROLAB SEE NEW POSSIBILITIES
Pneuma Respiratory
micronit microtechnologies

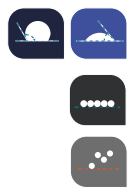
Nova Specifications.

	BASE MODEL	OPTIONS
ENCLOSURE		
Dimensions	W 555mm x H 770mm x L 600mm (+200mm on rear for cables) (+80mm on side for monomer inlet)	
Weight	~55kg depending on model	
CHAMBER		
Material	Stainless Steel	
Form	Rectangular	
Dimensions	240mm W x 240mm H x 405mm L	
REMOVABLE PARTS CARRIER		
Material	Aluminium / Stainless Steel	
Form	Flat tray (200mm W x 370mm L) / Multi-level shelf electrode optional, others to suit application.	
PLASMA POWER SUPPLY		
Power	0-1000W, continuously variable output	
PROCESS CONTROL		
Interface	15" Colour TFT, Windows11, PLC control	unlimited steps/recipes with user access privileges
Gas channels	1 - 3 Digital Mass Flow Controllers	monomer dosing inlet
Vent inlet	x1	soft ventilation option
Purge inlet	x1	
Connections	6mm compression	1/4" compression
Pressure gauge	Pirani sensor	Baratron gauge
Vacuum pump	8 to 15 m3/hr pumping speed	
Vacuum pump options	2-stage rotary pump (air/inert gas), PFPE rotary pump (oxygen compatible), dry pumps. All pumps include exhaust filter and connections	
SERVICES		
Electrical	90-120 VAC/1.6kVA **or,** 220-240VAC/1.6KVA Frequency - 50-60Hz	
Compliance	CE – UKCA - ROHS - WEEE	

Henniker strive for continuous improvement and specifications are subject to change without notice

CoatX® **Technology.**

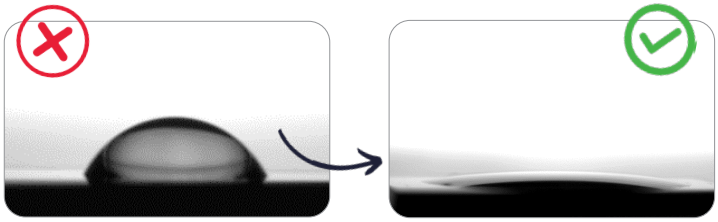
Henniker's CoatX® technology is available in the **Nova** platform and uses highly scalable, environmentally friendly plasma processes to deliver a range of active surface properties. These include permanent surface energy modification through either the CoatX® **SFE** Hydrophobic or the CoatX® **SFE** Hydrophilic coatings, covalent binding of biomolecules with CoatX® **Covabind**, and the creation of smooth low friction surfaces with CoatX® **Lubril** for medical device and high performance applications.



CoatX® **SFE.**

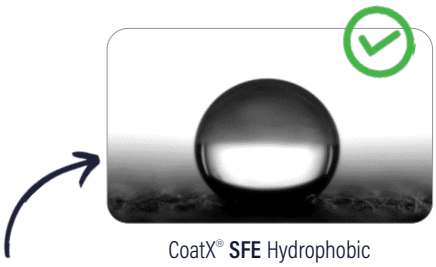
CoatX® **Covabind.**

CoatX® **Lubril.**



Untreated

CoatX® **SFE** Hydrophilic



CoatX® **SFE** Hydrophobic

About Henniker.

Henniker Plasma are an international leader in the design, development and manufacture of plasma surface treatment systems & advanced plasma processes.

Our products are installed worldwide and trusted to deliver consistent, reliable results in both leading research institutes and in critical manufacturing steps.

We are experts in plasma technology and surface science. We are trusted partners, valued for our courtesy, professionalism and dedication to delivering the correct solution for our clients.

Services.

Contract plasma treatment

Our technical staff will be happy to discuss contract treatments, from small one-off batches to regular, large throughput requirements.

Proof of concept treatment

Let's discuss your application and then we will provide a quick, no-nonsense feasibility study.

Surface testing laboratory

With a comprehensive suite of surface analysis equipment, we are able to conduct a wide range of surface property tests, both before and after plasma treatment, in order to provide you with the whole picture.

After sales support

We are proud of our reputation for being approachable, thorough and easy to work with.

"Henniker's after sales support is first class. They have always been extremely responsive if we have ever had need to call on them."

Steve Rackham, Teledyne

Rental plasma systems

We carry a wide range of our standard equipment in stock and available for short or long term hire. This is particularly useful for in-house proof of concept trials or to satisfy short term contract work.

"The low risk option of hiring a plasma unit for evaluation was a key reason that we chose to work with Henniker and one that enabled us to proceed with confidence."

Dr. Chris Nicklin, Reinnervate

Method development

We have invested significantly in laboratory facilities to assess, test and investigate all aspects of plasma surface modification on a wide range of materials. Coupled with extensive in-house and real-world knowledge, we can usually deliver a tailored treatment quickly and efficiently to suit your individual product or production needs.

"The technical team at Henniker are very knowledgeable and supportive and always approachable. I have found it a pleasure to work with them."

Simon Baxter, BAE Systems, AI

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