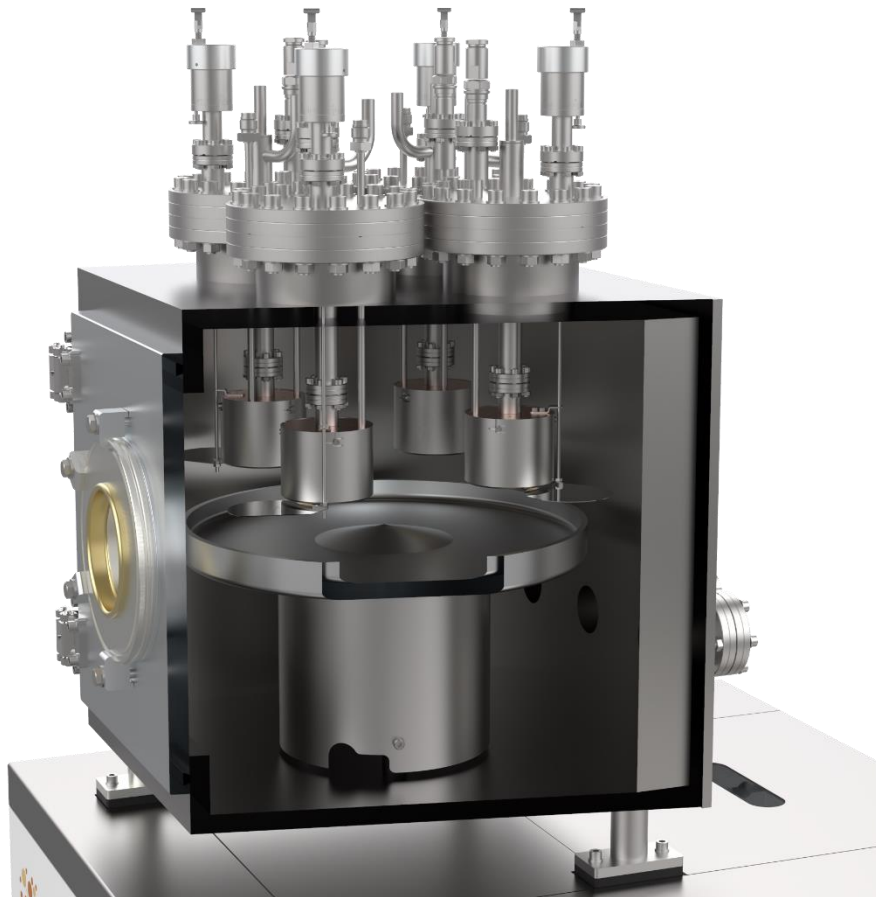




Powder Coating System



Compact footprint

PVD powder and pellet coating (up to 2 Litres)

Uniform and repeatable coverage

Green process (no wastage, chemical free)

Custom designs available



The **NL-Powder Coating System** is a compact and flexible Plasma Vapour Deposition (PVD) system for the coating of powders and pellets. There are three models: PCS100, PCS250 and PCS400, with capacities ranging from 0.15 to 2 litres, and from one to five deposition sources. Inorganic coatings are deposited using magnetron sputtering of thin films. Additionally, our nanoparticle source can be added to allow direct generation and deposition of nanoparticles onto any powder or pellets. The powder can also be plasma treated via a glow discharge plasma.

PVD offers a more **environmentally friendly** and efficient alternative to chemical coating techniques, such as sol gel, spray coatings and CVD. PVD is a chemical-free technique that uses high-purity metals and gases to generate high purity inorganic coatings, with **no chemical waste** and minimal residues, that are easily recycled. The line-of-sight deposition method includes in situ-measurement of the loading using a quartz crystal microbalance, to ensure **precise control over mass loading**. Multiple material coatings can be deposited in parallel or sequentially in one run. The system is ideal for coating inorganic and organic powders and pellets, for example **silica, titania, carbon, and plastic** with metals and metal alloys including CuO, Ir, Ir₂O₃, Pt, Ru, Ni, NiO and many others.

The chamber is manufactured in the UK using high quality 304 stainless steel with a lightweight Aluminium door. It is mounted on a system chassis which contains the control systems and power supplies. The entire system is mounted on lockable wheels and feet for easy location.

The integrated PC and versatile Spectrum software is easy to use and customizable, allowing the customer to control the system remotely and run complex recipes.



Figure 1 PVD Powder coating system

Specifications

	PCS100	PCS250	PCS400
Size of Deposition chamber	150 x 150 x 300mm	300 x 300 x 400mm	450 x 450 x 450mm
Bowl Diameter	Ø100mm	Ø250mm	Ø400mm
Max bowl weight	0.34kg	1.5kg	3.8kg
Orientation	Sputter down		
Capacity	0.15 litre	0.5 litres	2 litres
Pumping	Oil pump or turbo pump backed by oil pump. Including soft start pumping and slow venting.		
Control Software	Recipe driven processes, power supply control and data logging. Optional automated pumping sequencing (with pneumatic valves)		
In-situ monitoring	Quartz Crystal Microbalance for process monitoring and end point detection		
Source ports	2 deposition sources	Up to 4 deposition sources	Up to 5 deposition sources
Source Types	Nanoparticle source, Magnetron sputter sources, Ion source, RF Atom source		

