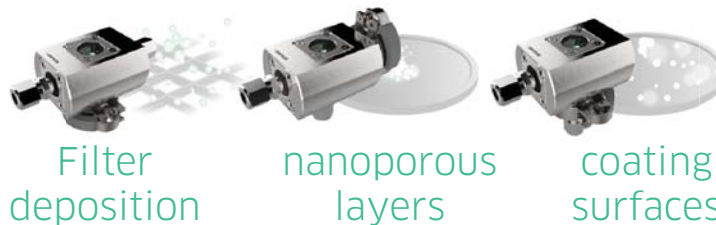


VSP-G1 & deposition accessories

Sample preparation at the push of a button

Reproducible nanoparticle sample preparation for 0-20nm pure (metal, metal oxide, alloy) particles of any (semi-)conductive material.



vsparticle

Fast, reproducible sample preparation

The VSP-G1 is a table-top, user-friendly nanoparticle generator that can be combined with three different deposition accessories. This enables any researcher easy production of nanoparticle samples in a matter of hours, with minimal effort. Typical sample preparation time is 1-60 minutes. Go from hypothesis to result in the same day.

0-20nm pure particles at the push of a button

Research applications including but not limited to: Fundamental spectroscopy studies, Model Catalyst Research, Photocatalysis, Electrocatalysis, Fuel Cells, Batteries, Carbon Nanotube Growth, Materials Science, Reference Materials, Filter Testing, Semiconductors.

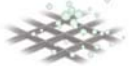


Switch your substrate in a matter of minutes

Deposition results



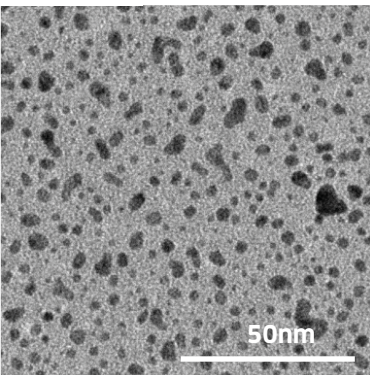
Diffusion



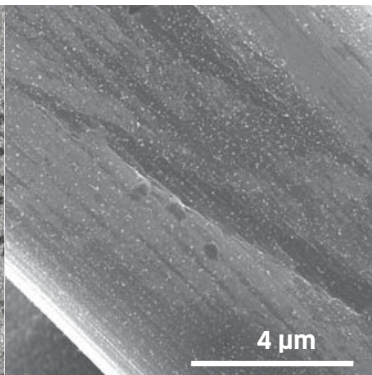
Filtration



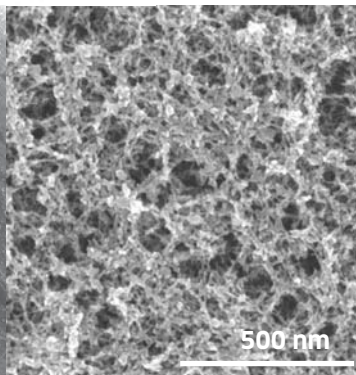
Impaction



TEM Analysis of Au nanoparticles on copper-carbon grid, generated with the VSP-G1 and deposited with the diffusion accessory (A1)



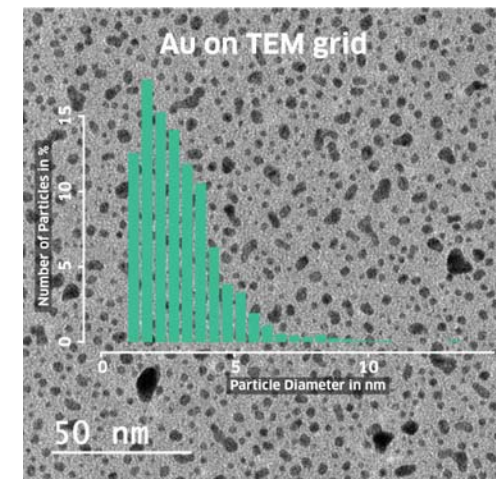
SEM analysis of Ni nanoparticles generated with the VSP-G1 and deposited on carbon fibers with the filtration accessory (A2).



SEM analysis of porous layer of CuO nanoparticles generated with the VSP-G1 and deposited with the impaction accessory (A3).

Compatible with all semi-conductive materials (alloy, non-alloy)

With VSP products any (semi-)conductive material can be processed into nanoparticles of 0-20 nm, including metals, metal oxides, alloys, carbon and semiconductors. The particles are deposited directly on the desired substrate, such as (in-situ) TEM substrates, electrodes, Si chips, filters. Outcome is a sample covered with nanoparticles, ready for analysis.



Unique features of the VSP-G1



At the push of a button

- Particle size from single atom up to 20 nm
- Tunable size distribution
- Only inputs needed are power, electrodes and carrier gas
- Sample preparation time <1 hour



Material versatility

- Any kind of (semi-)conductive material: pure, alloys, mixed, oxides and other combinations
- Mix (immiscible) materials at the nanoscale with 2 target electrodes (e.g. Au & Al)
- Pure, model particles: No surfactants or precursors

Unique features of the Deposition Accessories



Diffusion deposition VSP-A1

- Dispersed, unagglomerated particles
- Sample ready in 1-10 minutes
- From hypothesis to particle sample in less than one hour



Filtration deposition VSP-A2

- Bottom-up catalyst fabrication
- Mix & match oxides and metallic nanoparticles
- Or collect particles with in-line filter



Impaction deposition VSP-A3

- Grow a nanoporous oxide layer
- Useful as catalyst support/sensitive material

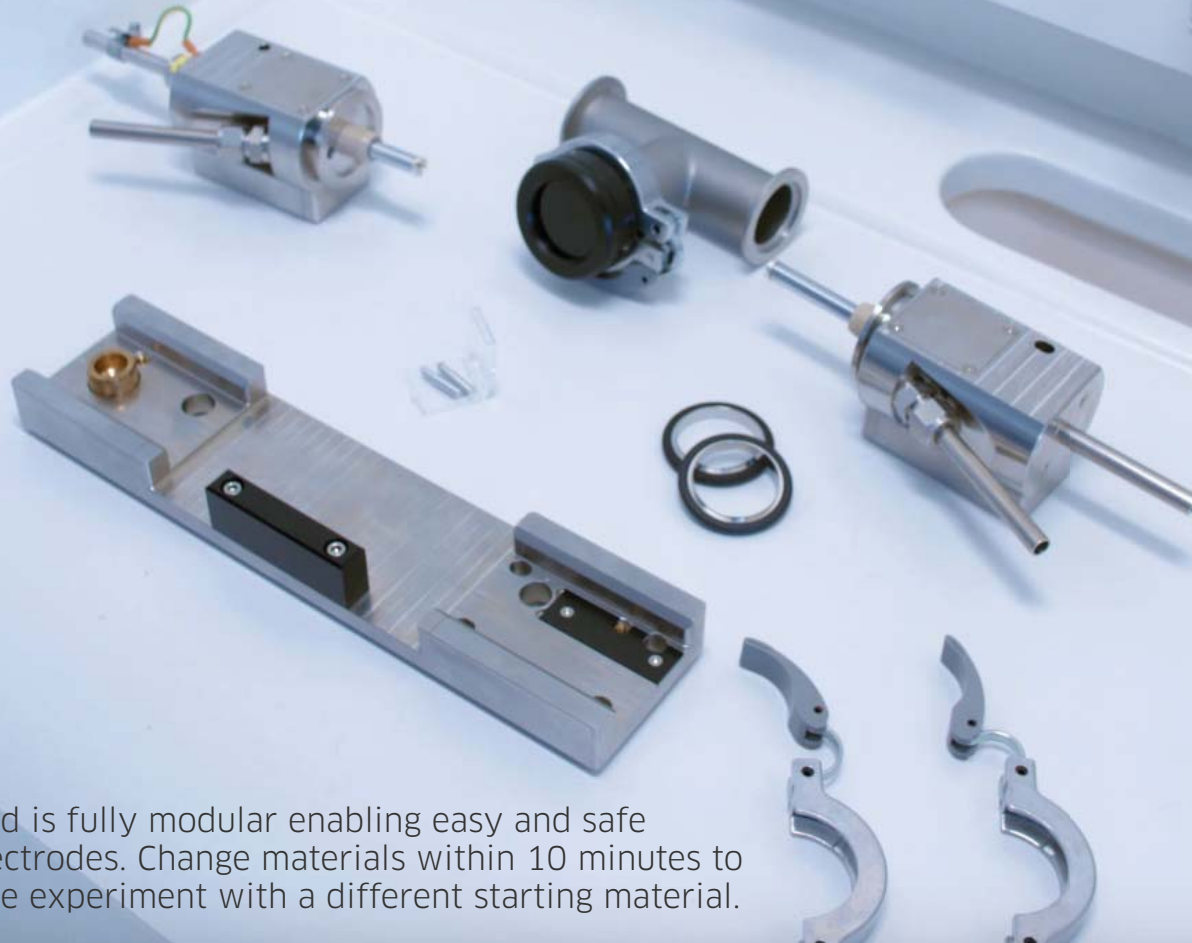
Operating Window

Target Electrode material	metals, metal oxides, alloys, semiconductors, carbon
Particle size	1-10 nanometer
Max deposited area	VSP-A1: 10x10mm, VSP-A2: ø47mm, VSP-A3: ø3 mm
Substrate types	e.g. (in-situ) TEM chips , Electrodes, (doped) Si chips
Production rate	1-10mg per hour
Total sample prep. time	30-60 minutes
Carrier gas	Ar, N2, Ar + O2, Ar + H2

Technical Specifications

Power	110-240V AC
Dimensions	Casing ca. 52x45x20 cm
Weight	ca. 15 kg
Display	16x2 characters
Digital output	RS232
Room temperature	
Standard pressure	
Desktop size	

Nanoparticles at the push of a button.



The reactorhead is fully modular enabling easy and safe changing of electrodes. Change materials within 10 minutes to repeat the same experiment with a different starting material.

Distribution in the UK & Ireland



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