

HiPNANO

Optimized for high vacuum systems where an additional source for nanoparticles is

HiPNano

Our nanoparticle cluster source is designed by experts in the field with long experience in nanoparticle production for different applications. With its quick installation using standard tube feedthroughs and easily interchangeable target cathodes, this nanoparticle source is optimized for high vacuum systems where an additional source for nanoparticles is desired. HiPNano is operated in high-power pulsed mode and optimized for our HiPSTER 1 HiPIMS unit.

Features

- + Hollow cathode design for maximized target material ionization and nanoparticle growth
- + Higher nanoparticle growth rates compared to magnetron based sources
- + Easily interchangeable hollow cathode targets
- + Nanoparticle size control through several parameter options
- + Well investigated and documented parameter studies
- + Tested using a range of target materials

Applications

- + Solar cells
- + Energy storage (e.g. batteries)
- + Energy conversion (e.g. catalysis/water splitting)
- + Sensor technology
- + Medical applications (e.g. contrast agents)
- + Smart windows

HiPNANO Specifications*

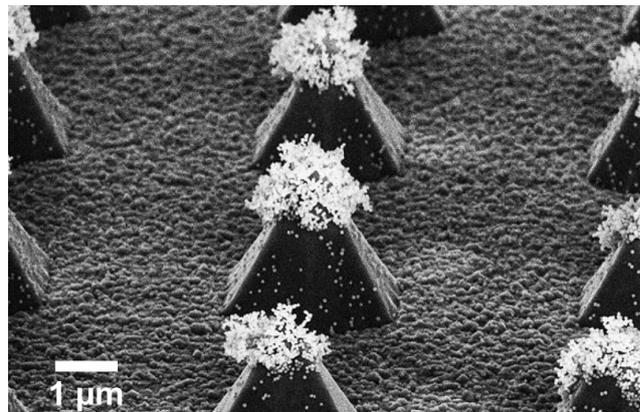
Nanoparticle specifications	
Size:	< 5 nm - > 100 nm
Materials:	"sputterable" materials

Operating specifications	
Average power:	< 100 W
Pulse frequency:	300-2000 Hz
Pulse length:	30-100 μ s

Chamber requirements	
High vacuum	
Operating pressure around 0.8 torr	
Minimum 26 cm in-vacuum length	
Mounting: 1" (25.4 mm) tube feedthrough, e.g. KF 40 flange	

Dimensions	
Size:	580x100x100 mm
Weight:	3 kg

* Preliminary specifications, may be subject to change.



A small positive potential on the top of the pyramids attracts Ag-nanoparticles efficiently.



A thick layer of Zr-particles of homogeneous size.



DANIEL LUNDIN
Professor

Expert in the field of HiPIMS processes and magnetron sputtering with focus on deposition processes and process characterization.



ULF HELMERSSON
Professor

Expert in the field of physical vapor deposition, such as magnetron sputtering and HiPIMS processes with focus on material science.



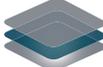
RAFAEL SANCHEZ
Global Sales Manager

In charge of sales and marketing worldwide. 10 years of experience in thin film deposition using magnetron sputtering.

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