

NANOPOWDER PRODUCTION SYSTEM

Nanopowder production system

Electrical explosion of wire (EEW) is a method for producing of nanopowders in pilot and mass production scale. The method is based on pulse discharging of stored electrical energy bank (capacitors) into metallic wire. Discharging of high amount of energy in a very short time (micro seconds) into metallic wire results in controlled explosion of wire. Typically, this system consists of pulse power, explosion chamber and collecting system. Continuous feeding of wire into reaction chamber provides possibility for production of considerable amount of nanopowders.

Advantages:

- Simple and accurate process control
- Continuous production process
- High production rate
- The possibility of producing a variety of nanomaterials with a single system
- Safe and secure system
- Compact design

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Application:

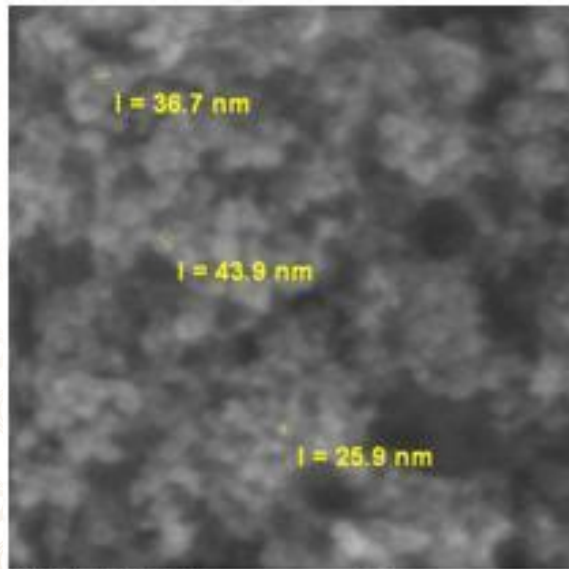
This method can be used to produce a variety of metallic, oxides and nitrides nanopowders. In general, the metals that can be rolled into wire form can be used as input to the system and chemical composition of nanopowders can be controlled by chamber's atmosphere. Nanopowders produced in this way other than research application can also be applied in several industries such as coating, colors, cosmetic and hygiene.

Technical characteristics:

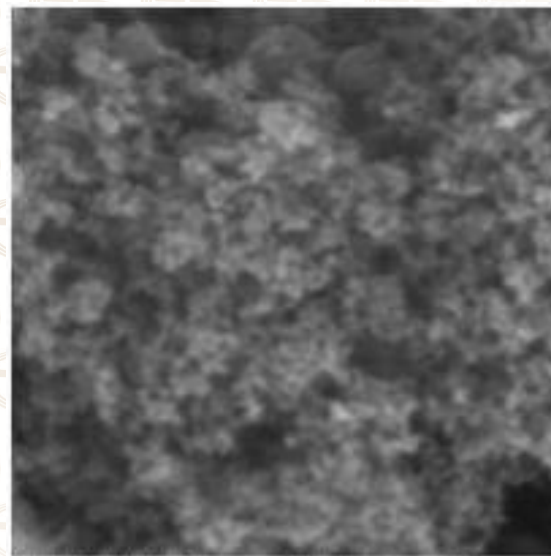
Parameter	Value / Description
Energy	160 – 3000 J
Production rate	5 – 400 g/h
Collecting method	Cascade/ Waterfall
Mean particle size	30 – 50 nm
Nanomaterials	Metal, Metal oxide, Metal nitride
Duty cycle	40 Shot/min
Approximate weight	75-350 Kg

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Picture:



SEM MAG: 900.00 kx DE: 1.85k
HV: 27.0 kV DATE: 03/02/08
WVC: HVAc Device: MV2300
50 nm Vega-DR Series
Oxford Instruments



SEM MAG: 900.00 kx DE: 1.85k
HV: 27.0 kV DATE: 03/02/08
WVC: HVAc Device: MV2300
5 nm Vega-DR Series
Oxford Instruments



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