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Gas phase of nanoparticle production at large scale

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Nanopowder production is associated with a number of technological challenges. The most common of existing production methods involve chemicals which can be dangerous and environmentally harmful. The gas phase ways provide the most promising perspectives in nanopowder quality and nomenclature. At the heart of our process is a method of obtaining powders by the evaporation of the raw material on industrial electron accelerator with power up to 100 kWt and energy 1.4 MeV followed by cooling the high-temperature vapor and condensation of substance into very small particles (nanoparticles) which then become highly dispersed (nano-size) powders. From fundamental view it can be related with the generation of high-temperature aerosol. The method is universal for a wide range of simple materials, nanopowder is produced in one stage, the technology allows to control the key parameters of finished products and is environmentally friendly. Advantages of the technology result in the advantages of the final products, that suit to the needs of different applications. For some nanopowders the very large volumes had been produced at the semi-industrial installation.

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