CBD SOT CONFERENCE TODAY'S INNOVATION, TOMORROW'S WARFIGHTER CAPABILITIES

Advances in Fundamental Materials Research

Characteristic Change of Nanoparticle Materials Using Atmospheric Pressure rf Plasma

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Atmospheric pressure plasmas (APPs) have attracted much attention not only for science study but also for technology having various applications in many fields including material engineering, chemical engineering, bioengineering, chemical defense. Due to their unique physical and chemical characteristics, there may be many application fields for actively utilizing them. Especially, radio frequency (13.56 MHz) APP offers many advantages to change the surface chemistry and physical properties using various control parameters such as supplying gases and electrical signals. In this point, rf plasma can be an excellent solution for nanomaterial functionalization. The functionalization of nano particles by the plasma generated in the ambient air using non-reactive gas supply. In addition, various nanoparticles such as metal oxide or catalysts can improve the efficiency of decomposition of chemical agents. Therefore, the APP treated nanoparticles can reduce the levels of toxic material concentration on the various surface.