

## **PREPARATION AND SURFACE TREATMENT OF NANOMATERIALS IN PLASMA-LIQUID SYSTEMS**

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This review lecture deals with various plasmas-liquid methods suitable for preparation and surface treatment of organic as well as inorganic nanomaterials. Nanoparticles can be formed using DC or AC discharges operating directly in the liquid or using discharges in gaseous phase in contact with liquids. A special attention is given also to discharges created in liquid by pulsed laser irradiation. Nanoparticles can be formed from inorganic salt water solution as a precursor or from bulk material which can be dissolved/evaporated directly by plasma. Organic solutions can be used for the carbon based nanostructures creation, too. The surface treatment of already existing nanomaterials by the discharges generated directly in the liquid phase can lead to their anti-agglomeration properties. Nanoparticles prepared/treated under various operational conditions can be commonly characterized by ultraviolet-visible spectroscopy (UV-Vis), scanning (SEM) or transmission (TEM) electron microscopies, dynamic laser light scattering (DLSC), etc. Prepared nanoparticles can be used in various applications like material engineering, biomedicine and other advanced technologies.