

A novel approach for determination of size and absolute concentration of liposomes based on Laser Transmission Spectroscopy (LTS) technique.

Simona Sennato

CNR ISC Sede Sapienza, Dipartimento di Fisica, La Sapienza Università di Roma.

Determination of size and absolute number of particles are of paramount importance for a comprehensive physicochemical characterization, pharmacodynamics and quality assurance. Currently there are no validated experimental methods for determining the particle number-concentration of nanoparticle formulations, since theoretical calculation methods rely on several assumptions and other empirical counting methods suffer of different limitations. It is under development an innovative Laser Transmission Spectroscopy (LTS) apparatus that allows to determine the size distribution (and, in principle, the shape and the refractive index) of the particles in a colloidal suspensions in terms of their absolute concentration. Here it will be shown how LTS can be used as a unique and powerful tool for studying the suspensions of lipid vesicles (liposomes), where the true number of particles is particularly relevant for drug delivery application.