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Impact of zeta potential on pharmaceuticals

Suhas Narayan Sakarkar

Smt Sharadchandrika Suresh Patil College of Pharmacy, India

Zeta potential is the surface charge of the particle, hence any interaction on the particle surface from external or internal environment leads to changes in surface properties and so the particle properties, which ultimately affects system stability. The zeta potential of the system depends on the adsorption and desorption properties of various drugs and excipients involved in the system. The stability of colloid or emulsion is dependent upon adsorption of ions (or polymers), chelating or complexing agents from the bulk of the suspending agent. Stability depends on the magnitude of zeta potential which depends on type on moiety, hydrocolloid, ionic/non-ionic surfactants. Further, the rate of change of zeta potential of the system with time is the major concern for determining the stability issues. Moreover, electrostatic interaction assists drug adsorption onto porous silicon nanoparticles, which can then be parenterally administered. Parenteral stability specifically depends on the composition of solution which is influenced by pH, ionic strength, types of buffers, protein concentration and the presence of various other additives. Systematic research in zeta potential led India to gain 1000\$ research grant in seventies for cosmetic industries abroad. Investigations, for real time studies between dynamic environments of multicomponent systems by measuring zeta potential distributions of individual components and their mixtures is now on the recent trends. Hence, zeta potential is one of the essential tools for predicting the molecular interactions which assists in formulating more better formulations to meet the needs of global market.

Biography

Suhas Narayan Sakarkar holds MPharm and PhD degrees and has experience of nearly 18 years in industry and academics. He pursued PhD in Pharmacy in 2000. To his credit are many published papers in national and international journals as well granted patent. He attended many conferences of national and international repute. He has guided nearly 55 students in PG course and guiding 3 PhD students. He has been invited as Speaker in many conferences and chaired few sessions. He also is a Reviewer for three to four peer reviewed journals. The area of research is basic sciences in pharmacy, zeta potential, crystallization, using chamber permeation studies. Now, he is working as Professor and Principal in Smt. Sharadchandrika Suresh Patil College of Pharmacy, Chopda, Jalgaon.

s_sakarkar@rediffmail.com

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