B.M.S. COLLEGE OF ENGINEERING, BENGALURU

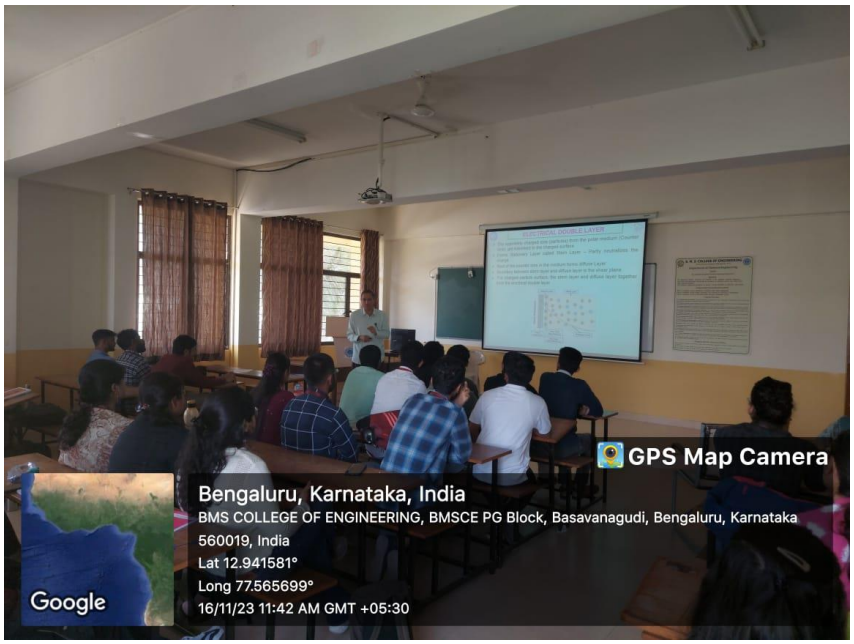
Autonomous Institute, Affiliated to VTU

Department of Chemical Engineering

Guest Lecture Series-106

Topic	The concept of Zeta potential, it's determination and applications
Speaker	**Dr.Ramachandra Rao**
Faculty Co-Ordinator	Dr. Y K Suneetha
Date and timings	16-11-2023 and 11:00 AM

Introduction about Speaker: Dr. R. R Rao is a retired Senior Principal Scientist, Material Science Division, at CSIR-NAL Bengaluru. He is the recipient Sir C.V. Raman Young Scientist Award from the Govt. of Karnataka, Sri Rama Sathyanarayana Memorial Award conferred by the Southern Electricals & Insulators & Indian Ceramic Society, Sri Pavan Nagpal Memorial Award from the Indian Ceramic Society. He is the honorary secretary of Indian Ceramic Society, and also the LM of Society of Biomaterials and Artificial Organs. He has 35 SCI publications under his name, and has attended more than 45 conferences. His areas of interest include development of dense/porous monolithic and composite ceramics, additive manufacturing & 3D printing, and processing of advanced materials.



Lecture Details: The presentation covered a brief overview of the nature of particles dispersed in liquid media with respect to the surface charge development. The formation of electrical double layer and the concept of zeta potential was explained. The lecture covered the different types of stabilization methods achievable through electrostatic repulsion, steric repulsion and electrosteric repulsion mechanisms. The methods of zeta potential measurements and their principles, the phenomenon of dispersion, agglomeration governed by zeta potential are also explained as a function of pH for fine Al_2O_3 ceramic particles dispersed in aqueous media. The effect of the particle size, sedimentation, viscosity and flow behavior as a function of pH are co-related with the zeta potential. A brief note on the various application aspects of zeta potential was enumerated at the end of the lecture.