

24th World Congress on

Analytical and Bioanalytical

The Optical Sensing via Microscopic Single Particle Counting

Na Li

Peking University, China

Single-particle based counting is not only a reasonable approach to achieve high sensitivity without the aid of target amplification, but also impart the method with unbiased quantification of multiple analytes. Based on dark-field microscopic imaging of gold nanoparticles and fluorescence microscopic imaging of fluorescent nanoparticles/microspheres, we have developed microscopic imaging based nanoparticle counting methods for single and multiple analytes in one test volume. Using colocalized fluorescence nanoparticle counting, we can achieve the six DNAs/miRNAs with less than 10 fM limit of detection in one test sample¹, and Endonucleases/DNA Methyltransferases in one test sample². Based on quantum dot doped nanoparticle counting, we can achieve simultaneous detection of proteins and miRNAs in one test sample³. These methods show the potential of applications in biological samples. We will continue to develop single particle counting based method for sensitive and multiplexed assays.

Biography

Na Li has done her Ph.D. in Analytical Chemistry from Peking University, Beijing, China. He is currently working at Professor, College of Chemistry, Peking University. Her research interest is Optical sensing methods and applications. Major interest: Nanoparticle and its composite based spectroscopy (fluorescence, localized surface Plasmon resonance absorption or light-scattering) and the application in biosensing.

lina@pku.edu.cn

Receiving: 5 Jan 2022 | Accepted: 1 Feb 2022 | Published: 10 March 2022