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## Aggregation induced emission (AIE) dye: A novel approach to locate “Ouzo zone” for systematic preparation of polymeric nanoparticles

Eshu Middha and Bin Liu

National University of Singapore, Singapore

Nanoprecipitation has revolutionized the method for synthesis of lipid and polymer based Nanoparticles (NPs). Many drug and dye molecules for biological applications are effectively encapsulated in biocompatible and biodegradable polymers using this process. During the process of nanoprecipitation, finding out the operating zone for solute/solvent/anti-solvent combination for the synthesis of mono-disperse NPs has been so far underestimated. According to Ganachaud and Katz, the operating region in which the process of nanoprecipitation gives stable small size NPs in the range of 50-300 nm with narrow size distribution instantaneously after mixing of solvent and anti-solvent is considered as “Ouzo region”. However, due to limitation of particle size analyzer in terms of NPs count rate, it is difficult to study the ouzo region below and above certain solute concentration. Aggregation Induced Emission (AIE) dyes are known for their high fluorescence emission in aggregate state as compared to dissolved state. AIE dyes are typically small molecules that spontaneously aggregate in aqueous media like most small hydrophobic drug molecules. By using the unique property of AIE dye with high emissive nature in aggregate state as compared to solution state, the ouzo region can easily be located for the systematic preparation of NPs.

### Biography

Eshu Middha is currently pursuing PhD at National University of Singapore, Singapore.

eshu.middha@u.nus.edu

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