

Fluorescence Resonance Energy Transfer between Phospholipid-Assembled Conjugated Oligoelectrolytes and Erythrosin B in aqueous solution

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Fluorescence Resonance Energy Transfer(FRET) is phenomena that energy transfer between nearby two fluorescence materials because of resonance. FRET depend on distance between materials and optical properties would change by distance. So it can be used for biosensor or bioimaging field. In this study, we show light sensitizer can be used for FRET and photovoltaic application. We use conjugated oligoelectrolyte DSSN+ for donor, and Erythrosin B for acceptor. We confirm FRET by adding Erythrosin B in DI water solution that contain DSSN+ accumulated lipid vesicle. When we give 435nm light that maximum absorption peak of DSSN+ and drop Erythrosin B in above solution, emission spectrum of DSSN+ quenched and emission spectrum of Erythrosin B was increased. We also check surface modified gold electrode that contain DSSN+ and electrolyte solution with Erythrosin B can make photocurrent by light source. Acknowledgments : This work was funded by the Korea Research Foundation (2013R1A1A2058816) and the Ministry of Science, ICT and Future Planning(2014M2B2A4031389).