

Excimer Formation Modulation Through Nucleic Acid-Dye Assembly

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In view of the emerging Semiconductor Synthetic Biology (SemiSynBio) development and IT-BT fusion, intelligent materials based on natural and/or artificial chemically synthesized nucleic acids have been attracted much research attention recently in fields of optoelectronics, information and medicine. In this study, the alignment of dyes were modulated through nucleic acid assembling process, the molecular/excimer ground state and excited state is effectively adjusted. A significant difference of excited states lifetimes between the dye molecule were observed, which also verified by steady-state and transient spectra, attributed to the conformation change of nucleic acid strands regulated E or Y-state exciton formations. This work provided the strategy of using nucleic acid assembled dyes to modulate optical property of thin films suitable for information display.

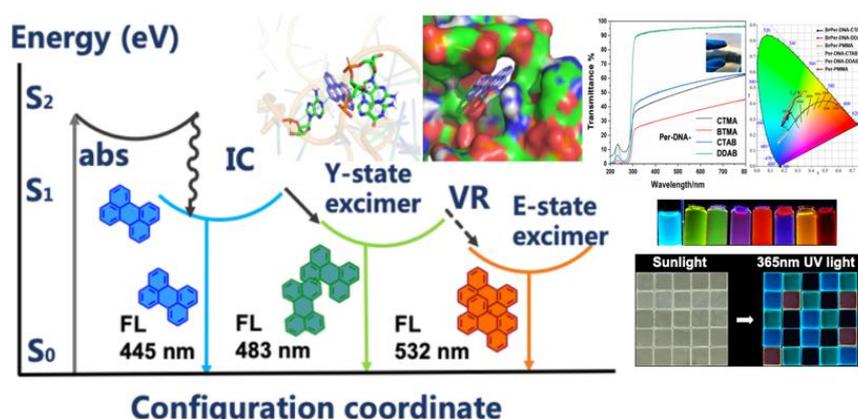


Figure 1. Nucleic acid assembled dyes modulating excimer formation (Unpublished)

References

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