

Nano-bio probe design and its application for biochemical analysis

Ye, Bang-Ce, author

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Abstrak

In this volume, Prof. Ye and his coworkers propose and review the concept of nano-bio probe design for biochemical analysis. A unique biochemical analysis technology based on fluorescence polarization enhanced by nanoparticles is described here with successful applications in environmental monitoring, rapid and sensitive sensing protease activity and high-throughput screening of inhibitors. Furthermore, they introduce a versatile molecular beacon (MB)-like probe for the multiplex sensing of targets such as sequence-specific DNA, protein, metal ions and small molecule compounds based on the self-assembled biomolecule-graphene conjugates. Besides, some colorimetric and luminescence probes utilizing metal nanoparticles for biochemical applications are also presented, such as chiral enantiomer discrimination and separation, environmental monitoring, clinic diagnosis and etc.