

Plamonic Nanoparticle-based Hybrid Interfaces for Biological and Chemical Sensing

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Recent progress in plasmonic nanosensors has greatly overcome the limitations of conventional optical sensors, in terms of sensitivity, tunability, photostability, and in vivo applicability, by employing nano-structured plasmonic materials (i.e., metallic nanoparticles and nanostructured metallic substrates). In this presentation, notable approaches for new types of nanoparticle-based hybrid interfaces and their potential applications to biological sensing and imaging would be introduced. Our recent achievements including, nanoparticle-protein interface, nanoparticle-graphene nanopore interface and nanoparticle-3D polymeric interface, provide new opportunities toward ultrasensitive biological and chemical analyses. In this respect, the nanoparticle-based hybrid interfaces would contribute to develop innovative biomedical and environmental sensing platforms.