Biosensing applications of quantum emitters in diamond and phosphors

Philip Hemmer

Texas A&M University, 3128 TAMU, College Station, USA

Fluorescent nanoparticles can probe biological processes on the nanoscale. In some systems the potential exists for quantum-enhanced sensing. I will give a brief overview of the field with emphasis on what is still needed. Then I will discuss some particular examples of fluorescent diamond and upconversion phosphor particles that have showed recent promise in these areas.