

From Quantum Optics to Quantum Technologies: A Story of Gemstone and Light

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The technologies of tomorrow emerge from the science of today. This is one of the commonly used phrases to describe how scientific discoveries translate to useful technology. In the development of quantum physics, optics played a critical role from the early days at the birth of disruptive concepts to the modern era of accessing a tangible quantum world. Today, translation of curiosity-driven quantum physics to disruptive technologies is well on its way and many material platforms are under consideration for the physical implementation of useful devices. Diamond is one of many material platforms that offer promising technological roadmaps, particularly in quantum communication networks and in nanoscale sensing applications. This talk will present the journey towards near-term applications of the quantum world from the perspective of this unexpected partnership of gemstone and light.