**Quantum Emitters in Atomically Thin Materials**

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Engineering solid state quantum systems is amongst grand challenges in realizing integrated quantum photonic circuitry. While several 3D systems (such as diamond, silicon carbide, zinc oxide) have been thoroughly studied, solid state emitters in two dimensional (2D) materials are still in their infancy.

In this talk I will discuss single photon emitters in atomically thin materials. The focus will be on recently emerged transition metal di-chalcogenides and hexagonal boron nitride (hBN). I will highlight several avenues to engineer these emitters on demand in large exfoliated flakes and 2D monolayers as well as discuss their potential atomistic structures supported by density functional theory.

I will then highlight promising avenues to integrate the emitters with plasmonic and photonic cavities to achieve improved collection efficiency and Purcell enhancement. These are fundamental experiments to realize integrated quantum circuitry with 2D materials. I will summarize by outlning challenges and promising directions in the field of quantum emitters and nanophotonics with 2D materials.

