

Allgemeines Physikalisches Kolloquium

Donnerstag, 28.05.2020 um 16 Uhr c.t.
Online-Kolloquium

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2D Materials: from atomistic quantum emitters to many-body physics

We introduce the manifold class of semiconducting 2D materials and their heterostacks, and demonstrate the deterministic generation of single photon emitters in monolayer MoS₂ van der Waals heterostacks. The MoS₂ is site-selectively bombarded with helium ions to generate optically active defects in arrays and lines on demand. We investigate single defects by performing low temperature photoluminescence and scanning tunneling spectroscopy. Moreover, we show first results on a Bose-Einstein condensate of photogenerated interlayer excitons in MoSe₂-WSe₂ van der Waals heterostacks.

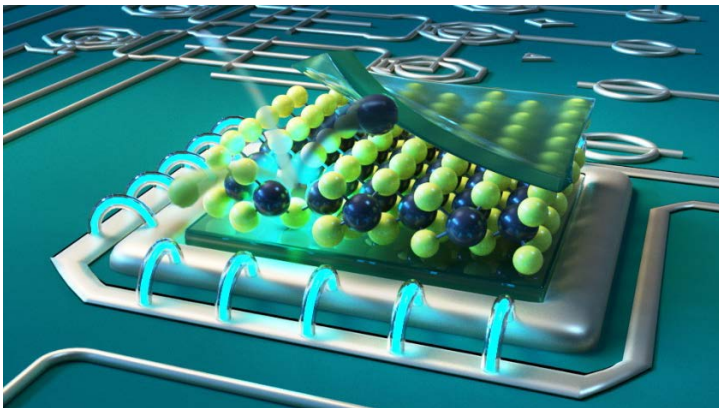


Figure. Schematic of an atomistic defect in a MoS₂-heterostack acting as an on-chip single photon source. Copyright MCQST and WSI, TUM.