Enhanced Photoluminescence Emission from Monolayer MoS$_2$ Using Single Plasmonic Antenna

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Two-dimensional materials have been receiving wide attention for applications in semiconductor optoelectronics, however monolayer thickness limits the light-matter interactions resulting in poor light emission and absorption. Aydin group recently demonstrated enhanced light emission from plasmonic nanodisk arrays due to localized surface plasmon resonances. In a collaborative effort between Aydin and Lauhon groups, single dipole and bowtie gold nanoantennas with sub-20nm gaps have been shown to increase photoluminescence emission from a monolayer MoS$_2$.