

Plasmonic Metamaterials Meet Quantum

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We first review the recent developments and novel applications for space-time-frequency metasurfaces. Then we outline hybrid, plasmonic-photonic meta-structures for quantum information systems and discuss a new unorthodox approach for high-speed quantum photonics operating at THz rates. The use of plasmonics to optimize light-matter coupling and speed-up quantum processes so that they outpace quantum decoherence and losses will be also discussed.