Active metasurfaces

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We present our recent results related to active metasurfaces. Several mechanisms for implementing active devices will be discussed. We will describe the demonstration of tunability in dielectric and metallic metasurfaces for diverse applications using tunability mechanism such as MEMS technology integrated with metasurfaces and the electro optic effect in lithium niobate integrated with metasurfaces, as well as the tunability of a metasurface by controlling an external medium. We also discuss the role of nanoscale structures in enhancing functionalities such as light emission and light detection.