

Transmissive dielectric metasurfaces fabricated with high index semiconductors have developed into a powerful platform for wavefront manipulation. These metasurfaces are operated in the transparency windows of their constituent dielectrics enabling low loss control of incident electromagnetic radiation making this class of metasurface a promising candidate towards the development of flat optics. Here we make use of the high quality factor resonance that is present in Fano resonant GaAs metasurfaces. This resonance is the result of bright and dark mode mixing. Typically, the spectral characteristics of the meta-atoms are fixed during fabrication restricting the metasurface's ultimate utility. However, through optical pumping we can overcome this limitation. Here we demonstrate ultrafast spectral shifting of the high-Q Fano resonance through optical pumping at 800 nm at low pump fluences. These results establish the potential of Fano metasurfaces for efficient ultrafast modulation and filtering.