DYNAMIC OPTICAL MEMS METASURFACES

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Plasmonic metasurfaces have attracted increasing attention due to their unprecedented capabilities of manipulating optical fields at subwavelength spatial resolutions [1]. Despite significant progress, most metadevices demonstrated to date are passive and lack dynamic modulation post-fabrication. Therefore, it is highly desirable to realize tunable metasurfaces with functionalities actively controlled by external stimuli. In this talk, I will discuss a MEMS-integrated tunable metasurface platform for active wavefront shaping by integrating MEMS mirrors and optical metasurfaces (OMSs) with the mirror-OMS separation being electrically controlled. Recent experimental demonstrations of electrically controlled full-range phase retarders [2] and polarizers [3,4] are presented.

References

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