**ABSTRACT**

According to Vector diffraction theory, focusing properties of azimuthally polarized annular multi Gaussian beam through dielectric interface is numerically studied. It is observed that the presence of dielectric interface generates focal shift and the inclusion of annular obstruction at the aperture enhances the focal depth and minimized the focal hole size. By properly tuning the annular obstruction, a focal hole of FWHM 0.606 λ having super long focal depth of 3080λ is achieved. The focal depth of the dark channel achieved is found to be much larger than all the previously proposed methods.