

## Modal q-plates

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In our work we show that the optical medium which possesses certain type of phase mask can work as a modal q-plate. This modal q-plate transforms the incident plane wave to a Laguerre-Gaussian mode with radial index  $p$  and azimuthal index  $l$  ( $LG_{p,l}$ ). Experimental and theoretical results of transmitted  $LG_{0,2}$  like beam through common q-plate was compared with modal q-plate transmitted beam which retardation possesses  $l=2$  and  $p=0$  characteristics. The correlation method was used for numerical comparison and it was shown that  $LG_{02}$  mode generated by modal q-plate is better compared with the output of the simple q-plate. Moreover, unlike common q-plate, which generates this certain mode in the case of the impinging Gaussian beam, modal q-plate works in the case of incident plane waves, i.e. there is no need to focus the beam on the sample.

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