

METHOD AND APPARATUS FOR OPHTHALMIC DEVICES INCLUDING HYBRID ALIGNMENT LAYERS AND SHAPED LIQUID CRYSTAL LAYERS

ABSTRACT

The present invention discloses methods and apparatus for providing a variable optic insert into an ophthalmic lens. The variable optic insert may have surfaces within that have differing radii of curvature. A liquid crystal layer may be used to provide a variable optic function and in some embodiments, an alignment layer for the liquid crystal layer may be patterned in a hybrid manner. The patterning may allow for the lowering of the minimum electrical potential required to cause a shift in orientation of liquid crystal molecules within the ophthalmic device. An energy source is capable of powering the variable optic insert included within the ophthalmic lens. In some embodiments, an ophthalmic lens is cast-molded from a silicone hydrogel. The various ophthalmic lens entities may include electroactive liquid crystal layers to electrically control optical characteristics.

Fig. 7