WHAT IS CLAIMED IS:

1. An ophthalmic lens with embedded label, the ophthalmic lens comprising:
a contact lens; and
one or more embedded structures that are sensitive to the direction of incident light incorporated into the contact lens.

2. The ophthalmic lens according to Claim 1, wherein the one or more embedded structures comprise holographic recordings.

3. The ophthalmic lens according to Claim 2, wherein the holographic recordings are revealed only in transmitted light.

4. The ophthalmic lens according to Claim 2, wherein the holographic recordings comprise polarization holograms.

5. The ophthalmic lens according to Claim 2, wherein the holographic recordings are configured for diffraction in at least one of the vertical plane, the horizontal plane or a combination thereof.

6. The ophthalmic lens according to Claim 4, wherein the polarization holograms comprise diffractive waveplates.

7. The ophthalmic lens according to Claim 6, wherein the diffractive waveplates are spectrally broadband.

8. The ophthalmic lens according to Claim 6, wherein the diffractive waveplates comprise cycloidal diffractive waveplates.

9. An ophthalmic lens with embedded label, the ophthalmic lens comprising:
a contact lens; and
one or more embedded structures that influence the propagation of light incident on the contact lens.

10. A method for fabricating a label for a embedding in a secondary object, the method comprising the steps of:

depositing a photaligning release material onto a substrate;

aligning the photaligning release material with a linearly polarized light to create a homogenous background on the substrate;

arranging a mask on a predetermined position in front of the substrate;

exposing the homogenous background on the substrate to interfering light beams of orthogonal polarization states through the mask;

coating the substrate with a reactive liquid crystal film;

polymerizing the reactive liquid crystal film;

releasing the polymerized liquid crystal polymer film from the substrate; and

transferring at least a portion of the released film to the secondary object.

11. A method for fabricating a label for a secondary object, the method comprising the steps of:

depositing a photaligning release material onto a substrate;

aligning the photaligning release material with a linearly polarized light to create a homogenous background on the substrate;

arranging a masked diffractive waveplate in front of the homogenous background on the substrate;

exposing the homogenous background on the substrate to a single light beam through the masked diffractive waveplate;

coating the homogenous background on the substrate with a reactive liquid crystal film;

polymerizing the reactive liquid crystal film;

releasing the polymerized liquid crystal film from the substrate; and

transferring at least a portion of the related film to the secondary object.

12. A method for fabricating label for embedding in a secondary object, the method comprising the steps of:

depositing a photoaligning release material onto a substrate;

creating diffractive waveplate photoalignment conditions on the photoalinging release material by subjecting it to a predetermined cycliodal polarization pattern;

depositing a reactive liquid crystal film on the photoalignment layer according to the predetermined cycloidal polarization pattern;

polymerizing the reactive liquid crystal film; and

releasing the polymerized liquid crystal film from the substrate; and

transferring at least a portion of the released film to the secondary object.

13. A method for fabricating a label from cycloidal diffractive waveplate flakes for embedding in a secondary object, the method comprising the steps of:

depositing a photoaligning release material onto a substrate;

creating diffractive waveplate photoalignment conditions on the photoaligning release material by subjecting it to a predetermined cycloidal polarization pattern;

depositing a reactive liquid crystal film on the photoalignment layer according to the predetermined cycloidal polarization pattern;

polymerizing the reactive liquid crystal film;

releasing the polymerized liquid crystal film from the substrate;

creating flakes out of the polymerized liquid crystal film; and

transferring at least a portion of the flakes to the secondary object.

CLAIMS

1. An ophthalmic lens with embedded label, the ophthalmic lens comprising:

a contact lens; and

one or more embedded structures that are sensitive to the direction of incident light incorporated into the contact lens wherein the one or more embedded structures comprise holographic recordings and the holographic recordings are revealed only in transmitted light.

2. The ophthalmic lens according to Claim 1, wherein the holographic recordings comprise polarization holograms.

3. The ophthalmic lens according to Claim 1, wherein the holographic recordings are configured for diffraction in at least one of the vertical plane, the horizontal plane or a combination thereof.

4. The ophthalmic lens according to Claim 2, wherein the polarization holograms comprise diffractive waveplates.

5. The ophthalmic lens according to Claim 4, wherein the diffractive waveplates are spectrally broadband.

6. The ophthalmic lens according to Claim 4, wherein the diffractive waveplates comprise cycloidal diffractive waveplates.

7. An ophthalmic lens with embedded label, the ophthalmic lens comprising:

a contact lens; and

one or more embedded structures that influence the propagation of light incident on the contact lens.