Rolic Technologies Ltd.

Management of polarization states in high resolution patterned films

Rolic LCMO - Optical Films

All LCMO - optical films can be manufactured utilizing Rolic LCMO - technology similar to currently produced 3D converter films, because it allows the incorporation of specific patterns in the film. The double refractive properties of the cross-linked liquid crystals thus generate retardation layers, whose optical retardation can be adjusted by modifying the thickness of the layer. For example, an optical retardation of $\lambda/4$ converts linearly polarized light into circularly polarized light and vice versa.

Optically anisotropic films with polarisation and / or retardation are used in a large range of applications in modern technology. These applications extend from optical filters for digital cameras, to retardation layers, up to compensation-, wide angle- and 3D-converter or anti-reflection films for displays.
Rolic Technologies Ltd.

your partner for optical films

Some possible examples for LCMO-optical film retarders:

- Retardation films with various tilt profiles produced by LCMO technology

- Micro-patterning of optical anisotropic effect

- Advantage in R2R production if orientation is not in same direction as the web movement

- Tilt profile tuneable

- Applicable to flat, curved, solid or flexible substrates

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- Rolic has developed complementary materials for different optical layers
  - More than 20 years’ experience in material- & process-development

- Possible optical films can be a combination of different stacks
  - $\lambda/4$ - retarders
  - $\lambda/2$ - retarders
  - Top Coat (TC)
  - On various substrates
  - Patterned or non-patterned

- Rolic develops for you the best material combination for the complete stack
  Correct material combination ensures:
  - Good layer coating quality and uniformity
  - Strong adhesion between all layers of stack
  - Fast cycle time
  - Wide process window

- Optical films up to 490 mm width available