TECHNOLOGY DESCRIPTION

Hybrid polymer-nanooptical coatings are a platform technology in the field of multilayered films, and are seen in a variety of consumer products. The methods current used to manufacture and apply these coatings are complicated and require expense techniques, such as sputter deposition and chemical vapor deposition, which both require the use of a vacuum for application.

The hybrid polymer nanoparticle coating designed at Sandia National Labs employs nanotechnology, which involves the self-assembly of polymers to form stable, nanostructured coatings with tailored optical and physical properties. For the first time the optical and chemical properties of hydrophilic coatings can be independently controlled during manufacture. These tailored properties include porosity, refractive index, hydrophobicity, and surface geometry. This unique capability of Sandia’s multifunctional coating expands the potential applications into a variety of new markets.

TECHNOLOGICAL BENEFITS

- Easy application (spray, dip, spin-on, reel-to-reel)
- Can be applied at ambient temperature and pressure
- Based on commercially available materials
- Can be used on large or irregular surfaces
- Does not require complicated synthetic chemistry, stabilizing surfactants, or annealing procedures
- Scalable production

POTENTIAL APPLICATIONS

- Hydrophilic coatings
- Consumer electronics
- High performance glass & ceramics
- Microelectronics
- Sensors
- Semiconductors
- Precision & optical coating

CONTACT US

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