

Unique Polymer Coatings Enhance High-Performance Display Panels

University of Akron



Polymer films are used in flat-panel liquid crystal displays to improve off-angle viewability. Optical devices also rely on polymer films to maintain the integrity of transmitted light signals. An advanced polymer film invented at the University of Akron in Ohio now makes images on high-performance screens sharper and brighter than ever before.

“The polymer films prevent the distortion of light, which results in greater sharpness and clarity, as well as a greater range of distortion-free viewing angles.”

After 10 years of research, University of Akron professors Frank Harris and Stephen Cheng developed “Negative Birefringent Polymer Films for Liquid Crystal Displays.” Initial funding consisted of a National Science Foundation Advanced Liquid Crystalline Optical Materials (ALCOM) grant for \$500,000.

The technology consists of unique polymers that are applied as ultra-thin coatings to high-performance displays, such

as high-definition television screens and cockpit instrument panels. The polymer films prevent the distortion of light, which results in greater sharpness and clarity, as well as a greater range of distortion-free viewing angles.

With assistance from the University of Akron Research Foundation (UARF), Akron Polymer Systems was established in 2002 to further develop and commercialize high-performance polymers for aerospace, optical and photonic applications. UARF transferred the technology to the startup company, which also uses UARF's polymerization pilot plant to formulate and test different polyimide resins. Akron Polymer System's economic impact to the area recently led to a \$1.5 million award from the state of Ohio for promoting job growth.

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