

3M Chemist Receives Award

3M Chemist Receives Award for Developing Reflective Films Inspired by Nature

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scientist Andrew J. Ouderkirk was presented an Industrial Innovation Award from the American Chemical Society for inventing reflective films used in everything from computer displays to architectural lighting. Inspired by the vibrant, changing colors of butterfly wings, Ouderkirk led a team that used plastic materials to mimic the reflective surfaces found in nature. The resulting technology is a major advance in optics that challenges perceived limitations of Brewster's Law, a 200-year-old scientific principle that describes restrictions on the reflection of light. Using some of the polymer industry's first computer-driven design, Ouderkirk and his team invented 3M's Multilayer Optical Film technology platform and related products, which use polymer chemistry to manage light. The films are made up of hundreds of layers of two alternating polymers, each with its own ability to refract light. The films, which are flexible and as thin as a sheet of paper, reflect or transmit wavelengths in the ultraviolet, visible or near-infrared portions of the spectrum. They're currently used in applications as diverse as PDA displays, mirrors for electronic applications, telecommunications filters, automotive glass, LCD projection televisions, medical imaging and 3M Prestige Window Films .