

e-skin Displays Launches Non-Toxic, Earth Friendly, Passive Cooling Photonic Pigments, Transforming Sustainable Coatings

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EINPresswire.com/ -- e-skin Displays, a pioneering nano-photonics company based in California, today announced the development of revolutionary photonic pigments that promise to transform the coating industry with sustainable, energy-saving solutions. The technology behind the photonic pigments was invented by the co-founder of e-skin Displays, Dr.

Debashis Chanda, at the University of Central Florida and reported as a feature article in the prestigious journal *Science Advances* (D. Chanda et al., "Ultralight Plasmonic Structural Color Paint", *Science Advances*, vol. 9, issue 10, DOI: 10.1126/sciadv.adf7207, 2023).

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In nature, this kind of color effects are perfectly styled, but I guess I mentioned that it was the first time I ever saw artificial real functioning photonic pigments. Really great work!”

Fraunhofer Institute

These innovative structural color pigments, inspired by butterfly wings, offer a non-toxic alternative to traditional paints. Unlike conventional pigments, e-skin's photonic pigments are based on colorless materials, primarily aluminum and aluminum oxide eliminating the need for harmful chemicals and heavy metals in coatings. Structural color is a phenomenon where the color is produced by the physical structure of a material rather than by chemical pigments.

Key features of e-skin's photonic pigments include:

1. Passive cooling capabilities, reducing surface temperatures by up to 30°F
2. Ultralight weight, ideal for automotive and aerospace applications
3. Fade-resistant properties, ensuring long-lasting vibrant colors
4. Versatility across the entire color spectrum using only two base materials
5. Earth-friendly and non-toxic composition

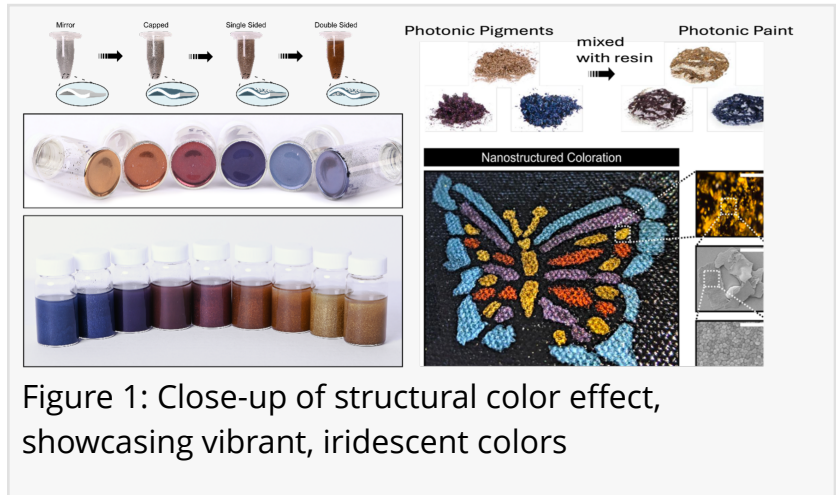


Figure 1: Close-up of structural color effect, showcasing vibrant, iridescent colors

"Our photonic pigments represent a paradigm shift in coating technology," says Dr. Chanda. "We're addressing critical environmental concerns while offering superior performance and aesthetics. This innovation has the potential to significantly reduce energy consumption in buildings and vehicles, contributing to global efforts in combating climate change."

Potential applications span various sectors, including:

- Building materials for energy-efficient architecture
- Automotive finishes for cooler, more fuel-efficient vehicles
- Aerospace coatings for lightweight, temperature-regulated aircraft
- Specialty coatings for electronics and consumer goods



Figure 2: Samples are kept for live demonstration at the Harvard Art Museum

The transformative nature of e-skin's technology has been recognized by industry experts. A representative from the prestigious Fraunhofer Institute stated, "In nature, these kinds of color effects are perfectly styled, but it was the first time I ever saw artificial, real functioning photonic pigments. Really great work!" The photonic pigments are also on display at the Harvard Art Museum and have been included in the Forbes Pigment Collection.

These endorsements from prestigious institutions such as the Fraunhofer Institute, Harvard Art Museum, and Forbes Pigment Collection underscore the potential impact of e-skin's photonic pigments on the coatings industry and beyond. The use of these pigments could significantly reduce the release of toxic chemicals and heavy metals into the environment from the coating industry.

e-skin Displays is committed to advancing sustainable technologies and is in the process of scaling up the production of these photonic pigments, with the intention to start mass production by 2025-2026.

About e-skin Displays:

e-skin Displays is a California-based nanotechnology photonics startup specializing in Advanced Structural Color Solutions, Graphene-based IR Sensors, Graphene-based IR Power, and Bio-Sensors. Founded in 2015, the company is dedicated to developing sustainable, energy-efficient coating technologies for a wide range of industries. Led by a team of experts in nano-photonics, plasmonics, and materials science, e-skin Displays is at the forefront of the next generation of

eco-friendly, high-performance coatings. The company's mission is to create innovative technologies that contribute to a more sustainable future.

For more information about e-skin Displays and its photonic pigment technology, visit www.eskindisplays.com.

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