



Brochosomes are hollow, soccer ball-shaped spheroids with holes.

Technology Summary

These biologically inspired anti-reflective surfaces mimic soccer ball-like granules with nano-indentations called brochosomes (BC), absorbing a broad range of wavelengths (250-2000 nm) due to their nanoarchitecture. They suppress reflection through plasmon excitation. Electrodeposition creates closely packed BC layers on a conductive substrate, enabling precise engineering of pit size, depth, and placement. This process offers varied final structural geometries, controlled by deposition duration. BC composition and pit parameters can be tailored for optimal reflection suppression, facilitating product differentiation.

Application & Market Utility

Insensitive to the angle of the incident light, the BC's reflectance is less than one percent of this broadband optical window, which is comparable to state-of-the-art antireflective materials. The patented coatings have applications in solar energy harvesting, imaging, and sensing devices. Conversely, BC can be used to camouflage an image or to heighten the contrast with the antireflective coating.

Next Steps

Seeking licensing from relevant industry leads.

TECHNOLOGY READINESS LEVEL

5-7

Seeking

Licensing |

Keywords

- Anti-Reflective Coating
- Broadband, Electromagnetic
- Waves
- Omnidirectional
- Camouflage

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