

The Nanocoatings Global Opportunity Report

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Abstracts

Research and development in nanotechnology and nanomaterials is now translating into tangible consumer products, providing new functionalities and opportunities in industries such as electronics, sporting goods, wearable electronics, textiles, construction etc. A recent example is quantum dot TVs, a multi-billion dollar boon for the High-definition TV market. Countless other opportunities exist for exploiting the exceptional properties of nanomaterials and these will increase as costs come down and production technologies improve

The incorporation of nanomaterials into thin films, coatings and surfaces leads to new functionalities, completely innovative characteristics and the possibility to achieve multi-functional coatings and smart coatings. The use of nanomaterials also results in performance enhancements in wear, corrosion-wear, fatigue and corrosion resistant coatings. Nanocoatings demonstrate significant enhancement in outdoor durability and vastly improved hardness and flexibility compared to traditional coatings.

Industries affected include:

§ Oil and gas

§ Corrosion and scaling chemical inhibitors.

§ Self-healing coatings.

§ Smart coatings.

§ Coatings for hydraulic fracturing.

§ Aerospace & aviation

- § Shape memory coatings.
- § Corrosion resistant coatings for aircraft parts.
- § Thermal protection.
- § Novel functional coatings for prevention of ice-accretion and insect-contamination.
- § Renewable energy
- § Anti-fouling protective coatings for offshore marine structures.
- § Anti-reflective solar module coatings.
- § Ice-phobic wind turbines.
- § Coatings for solar heating and cooling.
- § Automotive
- § Anti-fogging nanocoatings and surface treatments.
- § Improved mar and scratch resistance.
- § Flexible glass.
- § Corrosion prevention.
- § Multi-functional glazing.
- § Smart surfaces.
- § Surface texturing technologies with enhanced gloss.
- § New decorative and optical films.
- § Self-healing.
- § Textiles & Apparel

§ Sustainable coatings.

§ High UV protection.

§ Smart textiles.

§ Electrically conductive textiles.

§ Enhanced durability and protection.

§ Anti-bacterial and self-cleaning.

§ Water repellent while maintaining breathability..

§ Medical

§ Hydrophilic lubricious, hemocompatible, and drug delivery coatings.

§ Anti-bacterial coatings to prevent bacterial adhesion and biofilm formation.

§ Hydrophobic and super-hydrophobic coatings.

§ Lubricant coatings.

§ Protective implant coatings.

§ High hardness coatings for medical implants.

§ Infection control.

§ Antimicrobial protection or biocidal activity.

§ Marine

§ Anti-fouling and corrosion control coatings systems.

§ Reduced friction coatings.

§ Underwater hull coatings.

§ Buildings

§ Thermochromic smart windows.

§ Anti-reflection glazing.

§ Self-cleaning surfaces.

§ Passive cooling surfaces.

§ Air-purifying.

§ Consumer electronics

§ Waterproof electronic devices.

§ Anti-fingerprint touchscreens.

Report contents include:

§ Global market size for target markets

§ Addressable markets for nanocoatings, by nanocoatings type and industry

§ Estimated market revenues for nanocoatings to 2025

§ 300 company profiles including products and target markets

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