

# **Nanotechnology and Nanomaterials in the Automotive Industry: Applications, Products, World Markets, Companies and Revenues**

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## **Abstracts**

### **SUMMARY**

Automotive companies are using nanotechnology and nanomaterials to improve the performance of automobiles, to meet both consumer needs and regulatory requirements. Nanomaterials are leading to enhancements in the structural, electrical, thermal, optical, magnetic and catalytic capabilities of technologies developed for the automotive industry and offer high performance, but environmentally friendly, alternatives to toxic and/or expensive materials.

Exploitation of nanomaterials covers an entire spectrum of applications from polishes, glass treatments and colour changing paint, nanofilled polymers and resins, and nanostructured ceramics and coatings, offering higher performance and/or additional functionality such as wear and erosion resistance, light-weighting, reduced friction, toughening, UV resistance, corrosion control and aesthetic enhancement, to batteries for electric vehicles and advanced electronics and sensors. Nanomaterials utilized in automotive technologies help to reduce vehicle weight, improve the engine performance, improve fuel economy, improve the exhaust emission control, enhance active and passive safety, reduce the vehicle vibration and enhance active and passive driver safety, increase vehicle control and road handling capabilities, increase vehicle security, and enhance driver comfort.

The conservative estimate for nanotechnology and nanomaterials enabled products in the automotive industry for 2010 was US\$246million. By 2015, estimates are \$888million (conservative) and \$1.852billion (optimistic).

**Report contents include:**

Applications of nanotechnology and nanomaterials in the automotive industry

Segmentation by automotive sub-sectors including Air, Oil and Fuel Filtration, Batteries, Braking and Suspension, Coolants and Lubricants, Exhaust Catalysts, Frames and Parts, Fuel Additives, Fuel Cells, Lighting and Displays, Paints and Coatings, Semiconductors and Sensors and Tires

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90 plus tables and figures

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