

The change in **automobile and construction materials requirements** has led industries to the modification of bulk materials with nanoparticulate additives or to the application of later high performance coatings in their materials to obtain better, cleaner, cheaper, faster and smarter products. However, there still exist some barriers to nanotechnology-based products commercialization and use:

- Manufacturing processes make the processes more complex
- High processing costs for nano-materials
- Need for qualified manpower

Modification of low-cost pigments could help to introduce nanomaterials (polymers, paints and concrete) in the market. Manufacturing processes in automotive and construction sector are commonly altered when nano-things are introduced in the materials formulation. With NANOPIGMY modifications, manufacturing processes would not be altered as the pigment gives itself the pursued functionalities and there would be no need of qualified manpower.

High performance pigments are pigments which offer a performance level which allows them to be used in wide variety of applications as they provide new or improved characteristics (pigments with an additional functionality apart from color). The high-performance pigment (HPP) market performed well in 2006 and continued to grow for a number of reasons but many of the raw materials used to manufacture HPPs increased in cost, thereby affecting the selling price of the finished goods to some extent. The price of high-performance pigments is significantly higher than classic pigments, and as a result, there are fewer producers of specialty pigments and higher margins for the products.

The use of modified low-cost pigment will help to reduce the price of HPPs and consequently the price of nano-materials.

NANOPIGMY project seeks to produce cost-efficient multi-functional ceramic pigments **with more functionalities than color to give to the automobile and construction materials (plastic, paint and concrete) the required functionalities through the use of these nanotechnology-based pigments, thus avoiding changes in manufacturing processes.**



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