

# Advanced Coatings and Surface Technology TechVision Opportunity Engine (TechVision)

## Nanocoatings Innovations in Europe



Research trends focusing on toward cost-effective nanocoatings

December 04, 2015

D749-TV



# Contents

Section	Slide Numbers
<a href="#"><u>Nanocoatings in Europe—An Overview</u></a>	3
<a href="#"><u>Recent Innovations</u></a>	5
<a href="#"><u>GXC NuGlass HCPC</u></a>	6
<a href="#"><u>Nanofics®</u></a>	7
<a href="#"><u>Fusco-Technology</u></a>	8
<a href="#"><u>Nanotol</u></a>	9
<a href="#"><u>Strategic Insights</u></a>	10
<a href="#"><u>Key Patents</u></a>	13
<a href="#"><u>Industry Contacts</u></a>	16

# NANOCOATINGS IN EUROPE AN OVERVIEW

# Nanocoatings in Europe

## An Overview

Nanocoatings can be tailored to impart specific properties for different applications, making them suitable for various applications, ranging from aviation to healthcare. European markets have already been profiting from nano-scale surface treatments for several years. ...

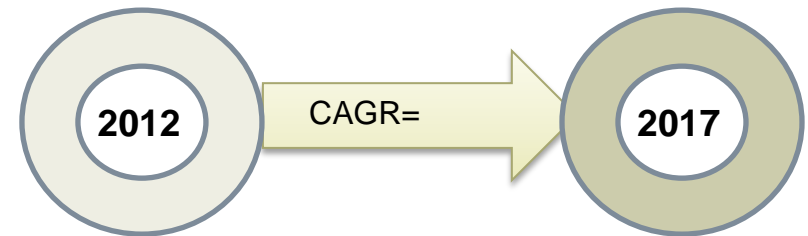
### Key Market Trends

Focus is more on liquid repellent nanocoatings, in the area of electronics and hardware.

Insulating nanocoatings promise significant energy savings, particularly for existing buildings.

Heat absorbing nano films will provide cost effective control of heat and decrease energy loads in buildings and improve efficiency of solar cells

### Nanocoatings Market Potential, Global

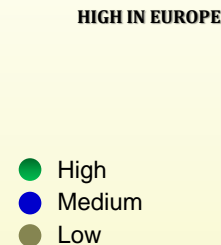


Source: Frost & Sullivan Analysis

### Competitive Landscape

- In Europe, the nanocoatings industry shows sustained growth with the strong participation of prominent corporates and academia
- ...
- ...

### Technology Development and Adoption



Source: Frost & Sullivan Analysis

# RECENT INNOVATIONS

# GXC NuGlass HCPC

*Anti-scratch hard-coatings designed especially for polymers*

## Unmet Needs

- 1 Cost effectiveness of most anti-scratch nanocoatings is less owing to the increasing price of raw materials.
- 2 Anti-scratch coatings offer protection only for a certain period of time. This leads to decreased durability and need for regular maintenance .
- 3 ...

## Innovation Attributes

GXC Coatings' anti-scratch coatings are capable of protecting polymer-based precision parts from degradation.



## Analyst Perspective

With advancements in anti-scratch coatings and the simultaneous need for cost friendly solutions, the nanoparticle-based coatings from GXC Anti-Scratch Coatings GmbH will find good market adoption.

## Technology Profile



**Who**

The nanocoatings have been developed by GXC Anti-Scratch coatings GmbH, Germany, which provides nanotechnology-based solutions.



**Where**

The nanocoatings have been developed in the company's manufacturing facility in Germany.



**What**

- ✓ These anti-scratch coatings have the capability to protect critical and high-end components of transportation vehicles.
- ✓ ...
- ✓ ...

## Accolades

GXC Coatings had participated in the Vision in Paris, France,



## Potential Applications

The nanocoatings can be used in different applications such as ...

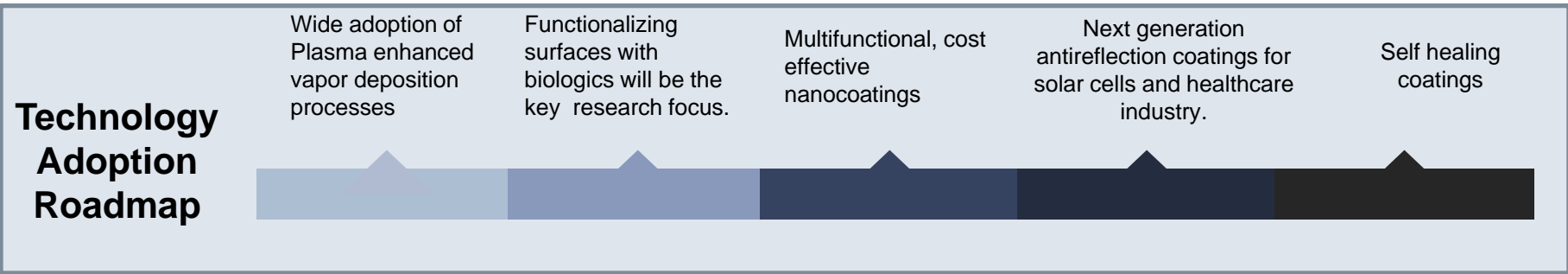
## Commercialization Strategy

Based on the hard-coats, GXC NuGlass is available in three main series:

- ...

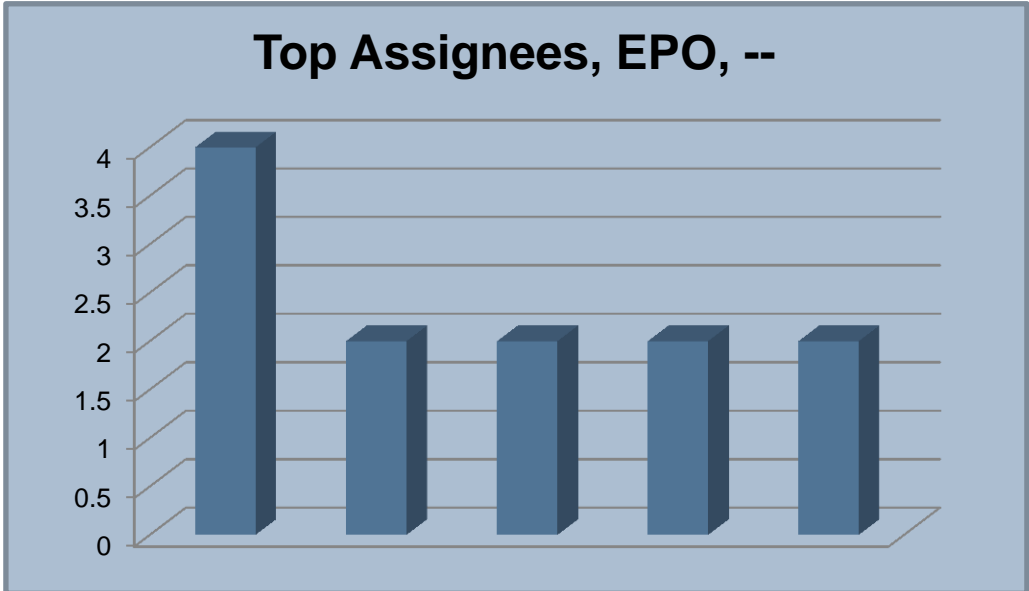
# STRATEGIC INSIGHTS

# Strategic Insights



## Intellectual Property (IP)

- Around -- patents in the last -- years have been granted in the European Patent Office alone.
- The key assignees include Alphagen NV, Battelle Memorial Institute, ...
- Key focus areas include developing nanocoatings for the automotive and aviation sectors along with electronics and healthcare.
- Germany and UK have the highest number of patent applications.





# KEY PATENTS, INDUSTRY CONTACTS

# INDUSTRY CONTACTS