

# Smart Coatings and Photovoltaics 2012

<https://marketpublishers.com/r/SB84364146FEN.html>

Date: February 2012

Pages: 67

Price: US\$ 995.00 (Single User License)

ID: SB84364146FEN

## Abstracts

### Summary

This report is part of NanoMarkets' ongoing coverage of materials and markets in photovoltaics (PV). In this report, NanoMarkets examines the emerging opportunities for selling "smart" coatings into the solar panel industry. In this report we examine the potential for self-cleaning, self-healing, electrochromic and thermochromic coatings in the PV applications over the next eight years. It includes an assessment of where revenue generation will occur and which companies are likely to be the winners and losers in this space. The report also includes a detailed eight-year forecast of smart coating usage in the PV space, broken out by coated area and market value.

NanoMarkets has been covering the markets for PV materials for almost seven years and believes strongly that there are now growing opportunities to sell smart coatings into the PV sector. This report considers how smart coatings can create value for the PV industry under the changed circumstances that PV faces today, in which government subsidies are under threat and there are huge pressures to reduce PV costs across the industry.

In this environment, some PV module makers are seeking ways to differentiate themselves in a rapidly commoditizing market, such as through addition of self-cleaning or self-healing coatings to PV panels that improve performance and/or reduce cost-in-use. Others may seek to add new functionality to PV panels, such as by combining BIPV with an electrochromic smart window that enhances the value proposition of PV for end-users. Among firms discussed in this report are, Bayer MaterialScience, Cardinal Glass, Corning, Gentex, Nippon Sheet Glass, Nissan, PPG, Peer, SAGE Electrochromics, Saint-Gobain, and Soladigm.

## Contents

### **EXECUTIVE SUMMARY**

- E.1 “New” Opportunities for Smart Coatings in the PV Industry Since our Last Report
- E.2 Maximizing Performance of PV through Smart Coatings
- E.3 Longer-Term Potential for Added Functionality in Smart Coatings for PV
- E.4 Why Flexible PV and BIPV Glass Matter to the Future of Smart Coatings in PV
- E.5 Summary of Eight-Year Forecasts of Smart Coatings in PV Applications

### **CHAPTER ONE: INTRODUCTION TO SMART COATINGS IN PV APPLICATIONS**

- 1.1 Introduction to this Report
  - 1.1.1 Changes in the PV Market That May Influence the Adoption of Smart Coatings
  - 1.1.2 How Smart Coatings Improve the Value Proposition for PV
  - 1.1.3 Smart Coatings for Better Panel Performance
  - 1.1.4 Smart Coatings and Added Functionality
- 1.2 Objectives and Scope of This Report
- 1.3 Methodology of this Report
- 1.4 Plan of this Report

### **CHAPTER TWO: MARKETS FOR SMART COATINGS THAT ENHANCE PV PERFORMANCE**

- 2.1 Opportunities for Self-Cleaning Coatings in PV
  - 2.1.1 The Value of Self-Cleaning PV
  - 2.1.2 Technologies for Self-Cleaning Coatings
  - 2.1.3 Suppliers of Technologies for Self-Cleaning of PV Panels
- 2.2 Opportunities for Self-Repairing Coatings in PV
  - 2.2.1 The Value Proposition for Self-Repair in PV
  - 2.2.2 Technologies for Self-Repairing Coatings
  - 2.2.3 Suppliers of Technologies for the Self-Repair of PV Panels
- 2.3 How Smart Coatings Fit Into PV Production
  - 2.3.1 Internal vs. External Smart Coatings
  - 2.3.2 Opportunities by PV type
- 2.4 Key Points Made in this Chapter

### **CHAPTER THREE: MARKET OPPORTUNITIES FOR SMART-COATINGS THAT ADD FUNCTIONALITY TO PV**

### 3.1 Adding Electrochromics to PV

3.1.1 Dimmability in BIPV Applications – Multifunctional Windows: Energy, Light, and Shading

3.1.2 Electrochromics in Off-Grid and Portable PV

3.1.3 Electrochromics for Improved Safety in PV Applications

3.1.4 Switchable and Dimmable Technologies

3.1.5 Challenges for Commercialization of Electrochromics in PV

### 3.2 Opportunities for Thermochromic Devices in PV

3.2.1 Improving the Safety of PV Panels and Protecting Investments with Thermochromics

### 3.3 Longer-Term Potential for Adding Functionality to PV

3.3.1 Emerging Smart Coatings Technologies

3.3.2 Adding PV to Displays and Lighting

### 3.4 Key Points Made in this Chapter

## **CHAPTER FOUR: EIGHT-YEAR FORECASTS OF SMART COATINGS FOR PV**

### 4.1 Forecasting Methodology

4.1.1 Methodology

4.1.2 Scope of the Forecast

4.1.3 Data Sources

4.1.4 Alternative Scenarios

4.1.5 Differences from Earlier NanoMarkets Forecasts

### 4.2 Forecasts of Self-Repairing and Self-Cleaning Smart Coatings for PV

4.2.1 Self-Cleaning Smart Coatings

4.2.2 Self-Repairing Smart Coatings

### 4.3 Forecasts of Electrochromic and Thermochromic Smart Coatings for PV

4.3.1 Electrochromic and Switchable Smart Coatings

4.3.2 Thermochromic Smart Coatings

### 4.4 Summary of Forecasts

Abbreviations and Acronyms Used in This Report

About the Author

## List Of Exhibits

### LIST OF EXHIBITS

Exhibit E-1: Selected Smart Coatings Firms with PV Potential

Exhibit E-2: Summary of Forecasts for Smart Coatings in PV Applications 2012-2019

Exhibit 4-1: Forecasts for Self-Cleaning Coatings in PV Applications 2012-2019

Exhibit 4-2: Forecasts for Self-Repairing Coatings in PV Applications 2012-2019

Exhibit 4-3: Forecasts for Electrochromic Coatings in PV Applications 2012-2019

Exhibit 4-4: Forecasts for Thermochromic Coatings in PV Applications 2012-2019

Exhibit 4-5: Summary of Forecasts for Smart Coatings in PV Applications 2012-2019

## I would like to order

Product name: Smart Coatings and Photovoltaics 2012

Product link: <https://marketpublishers.com/r/SB84364146FEN.html>

Price: US\$ 995.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/SB84364146FEN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:  
Last name:  
Email:  
Company:  
Address:  
City:  
Zip code:  
Country:  
Tel:  
Fax:  
Your message:

**\*\*All fields are required**

Customer signature \_\_\_\_\_

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970