

Electrochromic Glass and Film Markets 2016-2023

<https://marketpublishers.com/r/EE180ACB914EN.html>

Date: December 2015

Pages: 0

Price: US\$ 3,495.00 (Single User License)

ID: EE180ACB914EN

Abstracts

Electrochromic (EC) glass has built up an established niche market for automotive mirrors, but n-tech Research's latest analysis underscores the attractive revenue opportunities for EC glass in smart windows in both architecture and transportation.

Customers are becoming more receptive to messaging beyond energy efficiency, into more holistic cost comparisons tied to alternative glass systems with investments in shading, lighting, and heating and cooling. More customers also are 'getting it' about connecting the dots from daylighting and interior building comfort to occupant productivity. Supporting these observations, project pipelines at Sage and View have doubled in the past year, which also provides more reference points and de-risking for future customers of EC glass.

Meanwhile, EC technology and production continues to incrementally improve as companies learn more about how to better work with and scale up familiar processes and technologies. One area of emphasis has been in system controls for the glass itself, which invokes favorable ties to the Internet-of-Things (IoT) meme, which we see as a needed future direction for smart materials in general.

n-tech has covered smart glass across various sectors for more than seven years, through which we have acquired a deep understanding of the dynamics of the various markets and technologies, including how the EC glass sector operates. We believe this report will be valuable for business strategists, market planners, and product management in the glass and specialty chemical industries, as well as at smart glass start-ups.

Applications and Markets

This report identifying and quantifying existing and evolving opportunities over the

coming eight-year period in the following sectors:

Residential windows

Commercial windows

Automotive windows

Automotive mirrors

Aerospace

Eight-Year Forecasts for EC Glass and Film

This includes granular eight-year forecasts in both volume and value terms, with breakouts by:

End applications

Technology platforms, glass and film-based

We also discuss changing manufacturing patterns within the EC glass business, and why we continue to anticipate changes at the manufacturing level that eventually should prove critical to the commercial future of EC glass.

Profiles of Key Players

This report also evaluates the strategies of leading firms marketing EC glass and film, and shows how novel EC materials play into the total smart windows value chain.

Companies discussed in this report include:

Asahi Glass

Boeing

Chromogenics

Continental Automotive Systems

Corning

E-Chromic Technologies

EControl-Glas

Fuyao

Gentex

Gesimat

Guardian

HelioTrobe Technologies

Magna International

Merck

Next Energy

NexTint

NSG/Pilkington

PPG

Sage Electrochromics

Saint-Gobain

SunPartner

Switch Materials

Tesla

View

Contents

EXECUTIVE SUMMARY

- E.1 Electrochromic Glass: Changes in End Markets
 - E.1.1 Automotive Mirrors: Preserving the Legacy
 - E.1.2 Smart Windows: What's Resonating with Customers
 - E.1.3 Bigger Project Pipelines: Two Reasons Why This Matters
- E.2 Self-Dimming Options: Why EC is Still Winning
 - E.2.1 Searching for the Perfect Window
 - E.2.2 EC Technology Update: Still Sticking with What Works
- E.3 Companies to Watch in Electrochromic Glass and Film
 - E.3.1 Sage Electrochromics (U.S.)
 - E.3.2 View (U.S.)
 - E.3.3 Gentex (U.S.)
 - E.3.4 E-Chromic Technologies (U.S.)
 - E.3.5 NexTint (U.S.)
 - E.3.6 Glass Companies: More than Just Partners?
 - E.3.7 Specialty Chemicals Companies: Still Early to Call
- E.4 Summary of Forecasts for EC Glass

CHAPTER ONE: INTRODUCTION

- 1.1 Background to This Report
 - 1.1.1 Electrochromic: Picking up Steam
 - 1.1.2 Getting the Message Across: What's Resonating with Customers
 - 1.1.3 Market Watch: Buildings, Cars, and Beyond
 - 1.1.4 Technology Update: Slow and Steady
 - 1.1.5 Reality Check: EC's Challenges
- 1.2 Objective and Scope of This Report
- 1.3 Methodology of this Report
- 1.4 Forecasting Methodology
- 1.4 Plan of this Report

CHAPTER TWO: UPDATE AND REVIEW OF ELECTROCHROMIC GLASS TECHNOLOGY

- 2.1 A Generic Materials Platform
- 2.2 Electrochromic Glass and Film

- 2.2.1 A Note on Switching Speeds
- 2.3 Manufacturing Developments: Still Waiting in the Wings
- 2.4 Electrochromic Materials for Smart Windows
 - 2.4.1 Transition Metal Oxides (TMOs)
 - 2.4.2 Polymers
 - 2.4.3 Reflective Hydride
 - 2.4.4 Nanocrystals
 - 2.4.5 Violegens
 - 2.4.5 Transparent Conductors
 - 2.4.5 Hybrid Photochromic/Electrochromic Smart Windows
- 2.5 Latest Research into EC Glass and Films
 - 2.5.1 Tapping Triboelectrics
 - 2.5.2 Prussian Blue for 'Zero-Sum-Consumption' Windows
 - 2.5.3 Cross-Linkable Fluorene-diphenylamine Derivatives
- 2.6 Key Points Made in this

CHAPTER THREE: STATUS OF ELECTROCHROMIC GLASS MARKETS

- 3.1 EC Commercialization: Who Needs What
- 3.2 EC Windows in Buildings and Construction
 - 3.2.1 Energy Efficiency Emphasis: Where Does It Still Make Sense?
 - 3.2.2 Raising the Bar: A Holistic Energy Argument
 - 3.2.3: Connecting the Dots: Comfort, Style, and Productivity
 - 3.2.4 Project Pipelines: Where Resonance Meets Results
 - 3.2.6 Hurdles to EC Glass Windows in Buildings
 - 3.2.7 Analyzing the Smart Windows Supply Chain in Buildings
- 3.3 Eight-Year Forecasts of Electrochromic Materials in Smart Windows
 - 3.3.1 Overall Addressable Market
 - 3.3.2 Overall Addressable Market for Building Glass
 - 3.3.3 Eight-Year Market Forecast of EC Smart Windows for Residential Buildings
 - 3.3.4 Eight-Year Market Forecast of EC Smart Windows for Commercial Buildings
 - 3.3.5 Eight-Year Forecast of EC Glass Windows by Major Geographical Regions
- 3.4 EC Glass and Automotive Markets
 - 3.4.1 Factors in Promoting Smart Glass in Automotive
 - 3.4.2 Self-Dimming Windows: Can This Become More than a Niche?
 - 3.4.3 Self-Dimming EC Mirrors: Where's the Real Opportunity?
 - 3.4.4 Other examples of EC in Automotive
- 3.5 Eight-Year Market Forecast of EC Glass Smart Windows and Smart Mirrors for Automotive and Public Transportation

- 3.5.1 Regulatory Uncertainty
- 3.5.2 Total Addressable Markets for Automotive Smart Windows
- 3.5.3 Eight-Year Active Smart Windows Forecast: By Vehicle Type and Share of EC Glass
- 3.5.4 Eight-Year Forecast of Smart Auto Windows Market by Major Geographical Regions
- 3.5.5 Eight-Year Forecast of EC Glass Auto Glass Mirrors
- 3.6 Smart Windows in Aerospace: Extending the Automotive Model
 - 3.6.2 Forecasts for EC Windows in the Aerospace Market
- 3.7 Electrochromic Glass in Consumer Electronics
 - 3.7.1 Camera Lenses for Mobile Devices
 - 3.7.2 Electrochromic Displays: Not Much Left to Say
 - 3.7.3 Eight-Year Forecast by Substrate Technology
- 3.8 Key Points Made in this Chapter

CHAPTER FOUR: UPDATE ON EC GLASS & FILM SUPPLIERS

- 4.1 Structure of the EC Glass Products Industry
 - 4.1.1 Role of Basic EC Materials and Major Glass Firms
- 4.2 Sage Electrochromics (U.S.)
 - 4.2.1 Products
 - 4.2.2 Technology and Manufacturing
 - 4.2.3 Customers and Project Pipeline
 - 4.2.4 Investors, and Saint Gobain
 - 4.2.5 Partnerships
- 4.3 View (U.S.)
 - 4.3.1 Funding Update
 - 4.3.3 Technology and Manufacturing
 - 4.3.4 Projects
- 4.4 Gentex (US)
 - 4.4.1 Products and Technology
 - 4.4.2 Markets
- 4.5 ChromoGenics (Sweden)
 - 4.5.1 Technology and Manufacturing
 - 4.5.2 Products and Market Plans
- 4.6 EControl-Glas (Germany)
 - 4.6.1 Market Update
- 4.7 Gesimat (Germany)
 - 4.7.1 Manufacturing Capabilities and Products

- 4.8 Merck (Germany)
- 4.9 E-Chromic Technologies (U.S.)
 - 4.9.1 Technology Development and Product
 - 4.9.2 End Markets: Buildings, Cars, and Homes
 - 4.9.3 Funding
- 4.10 NexTint (U.S.)
 - 4.10.1 Technology
 - 4.10.2 Funding and Leadership

ACRONYMS AND ABBREVIATIONS USED IN THIS REPORT

About

ABOUT THE AUTHORS

I would like to order

Product name: Electrochromic Glass and Film Markets 2016-2023

Product link: <https://marketpublishers.com/r/EE180ACB914EN.html>

Price: US\$ 3,495.00 (Single User License / Electronic Delivery)

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

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/EE180ACB914EN.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