This presentation contains forward-looking statements, including estimates and predictions based upon information currently available to Research Frontiers. Actual results could differ and are not guaranteed. Any forward-looking statements should be considered accordingly. Research Frontiers undertakes no obligation to update any forward-looking statements made in this presentation.
Research Frontiers (Nasdaq: REFR) Company Overview

**SPD-Smart Technology:** Electronically tintable glass developed by Research Frontiers changes the tint of any window, sunroof or skylight by electrically aligning tiny particles in a thin film within the glass or plastic. With the touch of a button, users can instantly change or tune the tint of their glass to help keep out harsh sunlight and 95% of the heat in its tinted (power off) state. Patented SPD-SmartGlass technology effectively blocks UV and infrared rays regardless of whether the glass is in its clear or tinted state, helping keep cars, planes, yachts, homes, offices and artwork cooler and protected.

<table>
<thead>
<tr>
<th>NASDAQ</th>
<th>REFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Cap ($4.21)</td>
<td>$132 M (5-21-2020)</td>
</tr>
<tr>
<td>Shares Outstanding</td>
<td>31.4 M</td>
</tr>
<tr>
<td>% Ownership by Management</td>
<td>7.6%</td>
</tr>
<tr>
<td>Cash Expenses (Annual)</td>
<td>$3.0 M</td>
</tr>
<tr>
<td>Cash Burn Rate (Quarter)</td>
<td>$450K</td>
</tr>
<tr>
<td>Working Capital</td>
<td>$6.3 M (Q1-2020)</td>
</tr>
</tbody>
</table>
Status:

- Cumulative investment of over $100 million in SPD-SmartGlass ($71.4 million NOL)
- 235 worldwide patents issued (expiring 2020-2037)
- Over 45 companies have already licensed SPD-SmartGlass technology, including a majority of the world’s automotive glass producers
- Licensor of world’s best-selling and best performing smart window technology
- Daimler adopted SPD technology in the Mercedes-Benz SLK in 2011, SL in 2012, S-Class Coupe in 2014, S-Class Maybach and S550 sedan in 2016. Now also in 4 models of McLaren and also electric vehicles
- SPD-Smart windows are standard equipment on 7 different aircraft models and aftermarket upgrade on 40 aircraft models.
- Automotive, Aircraft, Marine, Architectural and Museum Protection projects around the world. New consumer electronics applications being developed.
- Milan World’s Fair Allowed Over six million people to experience SPD-SmartGlass
Major Existing Markets for SPD-Smart Products

- **Automotive**
- **Aircraft**
- **Architectural**
- **Trains**
- **Other Products**
SPD-SmartGlass
(What is it?)
Photograph courtesy of Innovative Glass Corp.
SPD film supplied by Hitachi Chemical Co.
Daimler explains **SPD-Smart** technology in their **Magic Sky Control** roof
SPD-SmartGlass
(Benefits)
Offers a unique combination of performance benefits not found in any other smart glass technology, including:

- **Fast transition speed** (2 seconds) between widest range of light and dark tinted states. Speed is not size-dependent!
- 50-60 times darker to about twice as clear as ordinary sunroof.
- 20-70 times darker than conventional tinted glass to about five times as clear.
- Tinted state rejects up to 95% of heat and 99+% of UV radiation while not consuming any power.
- Mercedes tests show 10ºC (18ºF) reduction in cabin temperature.
- Reduces CO2 emissions by 4g/km and improves gas mileage/driving range by 5.5%.
- Infinite tunability between light and dark tinted states.
UV radiation damages interiors.

But other forms of solar radiation are primary culprits as well.

Switch to maximum visible light blocking state (99.5% blockage when off (no power consumed))

Switch to maximum heat-blocking state (-18F/-10C) when off (no power consumed)

Closer look at SPD-Smart Benefits: Protection from Heat, UV, Light and Glare

Full-time 99.9% of UV radiation blockage (full time-no power consumed)
Benefits in Green Buildings

- Energy efficiency
- (Buildings use 41% of energy and 73% of electricity)
- View preservation
- Occupant well-being
- Environmental stewardship
- Buildings as “smart” systems
- Innovation and aesthetics
- Differentiation
Daylight Harvesting
Potential annual savings of 35% to 60% on lighting energy.

Energy Savings for US Buildings:
An estimated $20-$35 billion/year on lighting energy
SPD-SmartGlass
(Development Status: Commercialized!)
SPD-SmartGlass
(Existing Markets and Growth Opportunities)
Opportunities:

• Established customer base
• Over 45 licensees
• Key high profile launch customers
• Reliability of SPD-SmartGlass already demonstrated by Mercedes and others
• SPD-SmartGlass has proven performance advantages over other technologies
• Clear potential to achieve much higher growth rates and valuations in market
• Licensing royalties business model based on sales of SPD-SmartGlass end-products (10 - 15% royalty fee range)
• Business model is highly scalable minimizing capital expenditures and operating expenses as SPD-SmartGlass business expands
AUTOMOTIVE MARKET

• Credibility of Mercedes as launch customer

• Trends in Automotive Industry favorable
  • Strong premium market
  • Move towards electric vehicles
  • $105/gram CO2 emissions penalty ($420)
  • Move towards connected cars
  • Move toward autonomous driven vehicles

• Predictable, high volume business

• High visibility “moving billboards”

• Interest well beyond just Mercedes …
Once Hitachi Chemical put SPD-Smart film into commercial production in 2007, Daimler started a multi-year testing and development program for the new SLK Roadster (launched in serial production in 2011):
March 2011
Mercedes-Benz SLK world debut at Geneva Auto Show. First Car To Use SPD-Smart Technology.

January 2012
Mercedes-Benz SL world debut at the Detroit Auto Shows. The Second Car To Use SPD-Smart Technology

September 2011
Audi Premieres A2 Concept Car With SPD-SmartGlass roof at 2011 Frankfurt Auto Show.

March 2012

September 2012
BMW Premieres Concept Active Tourer with SPD-SmartGlass roof at 2012 Paris Motor Show.

Second Half 2014
Multiple variants of the Mercedes-Benz S-Class family (Coupe, Maybach, Sedan) become the third, fourth and fifth cars to use SPD-SmartGlass, moving beyond roadsters to coupes and passenger sedans.

March 2015
Lincoln Premieres the Continental Concept with SPD-SmartGlass roof at the New York Auto Show.

Product Introduction Chronology: SPD-SmartGlass in Passenger Cars

2011

2012

2014

2015
Fisker EMotion
SPD-SmartGlass on Roof and Rear Side Windows
The Latest from the Geneva Auto Show March 2019:

The McLaren 720S Spyder and McLaren Speedtail with SPD-SmartGlass Roofs
TRAIN MARKET

app controlled dimmable windows

app controlled dimmable windows
AIRCRAFT MARKET
• Vision Systems SPD-Smart Nuance Windows:
  • Information on your window
  • Photovoltaic self-powered smart windows
  • Gesture-controlled and segmented windows
  • Integrated electronics
  • Nuance V2
CERN’S Globe of Science and Innovation
SPD-SmartGlass
(Growth Opportunities)
Main Catalysts: Movement to Higher Volumes

- **Automotive**
  - S-Class Sedan
  - Other Automotive OEMs
  - Cost Reductions/Higher Volume
  - Movement of industry towards electric vehicles, autonomous vehicles, and connected cars
  - Need to reduce CO2 emissions ($450 benefit)

- **Aircraft**
  - Movement to transport category aircraft
  - Other OEMs
  - Aftermarket
Other Growth Areas: Movement to Higher Volumes

• **Architectural**
  • Green Construction
  • Cost Reductions/Higher Volume

• **New Markets**
  • Yachts/Cruiseships
  • Trains/Mass Transit
  • Museums
  • Projection and Television (Panasonic) and Heads Up Displays
  • New Products using SPD Technology
Market Expansion Results in Need for Competitive Supply Chain and Less Expensive and Wider SPD Film to Address the Needs of the Architectural Market.
Gauzy Ltd. SPD-Smart Film Coating Line (Announced October 9, 2018)

SPD film supplied by Gauzy Ltd.
(Production Capacity 365,000 square meters/year/shift)
Gauzy Ltd. and RFI Announces Second SPD-Smart Film Coating Line in Stuttgart, Germany (Announced February 1, 2019)

(Production Capacity: Over 1 million square meters, width 1.8 Meters)
SPD-SmartGlass
(Market Size)
Smart Glass Market Overview

In October 2019, MarketsandMarkets issued Smart Glass Market by Technology (Suspended Particle Display, Electrochromic, Liquid Crystal, Photochromic, Thermochromic), Application (Architecture, Transportation, Consumer Electronics), and Geography - Global Forecast to 2023.

This market research report concludes that the smart glass market is expected to grow from USD $2.8 billion in 2016 to reach USD $8.35 billion by 2023, with a growth rate of 16.6% between 2017 and 2023. Key conclusions in this report included:

• Smart glass, especially active glass, provides a higher control over heat and light at the will of the user, thereby providing considerable electricity cost-savings and conclusively making the construction spaces more environment-friendly.

• Smart glass technology has been in existence for the last few decades; however, its demand is gathering momentum on account of improved innovation in raw materials and technologies and the possibility for new applications across various sectors. North America and Europe have been at the forefront of this trend. Smart glass demand is growing in the Asia Pacific region on account of its growing building and construction, electronics, and transportation sectors.
Market Overview: Automotive Market

- IHS Automotive Approx 90 million units in the Global Light Vehicle Market
- Approximately 3% of this total (2 million units) were luxury vehicles with a US$ MSRP ≥ $50K*
- Approximately 1.6 million of these luxury vehicles have sunroofs that generate glare and heat control issues*
- Expansion of SPD-SmartGlass to other areas of car

The luxury vehicle sunroof market alone represents a $200 million annual revenue opportunity at current royalty rates
Market Overview: Aircraft Market

- 35,000 new transportation and business jets are forecast to be produced over the next 20 years
- These jets will create annualized demand for 157K aircraft windows, each requiring a shading product
- Commercial airliner market is 91% of the total aircraft market

The aircraft market is a $24MM annual revenue opportunity at an estimated royalty of $75-150 per window

*Sources: (i) Boeing Current Market Outlook 2013-2032 and (ii) General Aviation Manufacturers Association 2012 Statistical DataBook and Industry Outlook.*
Additional Growth from Aftermarket

• SPD EDWs can be retrofitted because there is no change needed to structural outer window.

• Aftermarket can be many times larger than OEM market.

• Upgrades can occur during maintenance and when aircraft ownership changes.
## Architectural Smart Glass Company Valuations

<table>
<thead>
<tr>
<th>Competitor</th>
<th>Equity Valuation</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>View Dynamic Glass</td>
<td>$??? B</td>
<td>Most recent investment of $1.2B. Total raised to date over $2B.</td>
</tr>
<tr>
<td>Sage Electrochromics, a division of Saint-Gobain</td>
<td>$160 M</td>
<td>In 2010, Saint Gobain acquired a 50% stake in Sage for $80 M implying a $160 M equity valuation(^1). In 2013, Saint Gobain acquired the remaining 50% of the equity of Sage. The CEO of Sage indicated that Saint Gobain invested a total of $250MM in Sage in addition to the price it paid for the remaining 50% equity stake(^2).</td>
</tr>
<tr>
<td>Research Frontiers</td>
<td>$132 M</td>
<td>As of 5/21/2020</td>
</tr>
</tbody>
</table>

(1) Faribault Daly News – May 9, 2012  
(2) Star Tribune – October 1, 2013  

Note: Research Frontiers main competitors in the architectural smart glass market, Sage and View, do not participate in the other (automotive, aircraft, marine and museum) markets that Research Frontiers technology is also used in.
SPD-SmartGlass
(What does it compete with?)
PERFORMANCE COMPARISON OF ACTIVE (SMART) TECHNOLOGIES:

- **LC (Liquid Crystal)**
  - Scatters but does not block/reflect incoming light
  - **Only two states**: clear and translucent
  - Good privacy **but no shading**
  - Hazy

- **EC (Electrochromic/Electrochemical)**
  - Very **slow**, non-uniform switching speed
  - Switching speed degrades substantially as product size increase
  - Typically only offered in **two states**: tinted and clear
  - Difficult to achieve “very dark” states
  - Cannot be integrated with lightweight plastics
  - Electrochemical process may have durability issues (similar to laptop battery)

- **SPD (Suspended Particle Device)**
  - **Switching speed**: Instant regardless of product size
  - **Tunability**: Infinite intermediate states from dark to clear
  - **Light-Blocking Capability**: Typically 99.5% blockage. Can be as low as 99.9975% blockage
  - **Proven real-world durability**: Tested in most extreme conditions in automotive and aircraft markets
Competitive Landscape for SmartGlass Technologies

• **Automotive SmartGlass Applications:**
  SPD is the only technology that has been commercialized. EC and LC have been evaluated but have not had the performance properties to be successfully deployed.

• **Aircraft SmartGlass Applications:**
  SPD technology have been commercialized in various aircraft. EC has only been commercialized in two aircraft, and one of them subsequently converted to now using SPD. The Company believes that SPD’s superior switching speed versus EC is a key competitive advantage.

• **Architectural SmartGlass Applications:**
  SPD, EC and LC have been utilized in various applications. The Company believes that SPD’s superior switching speed versus EC, and its ability to darken (vs LC light scattering) are key advantages of SPD versus these technologies.
Ownership

- Directors & Officers (April 2020 Proxy): 7.6%
- 5% Stockholders:
  - Kevin Douglas and related group: 12.5%
  - Gauzy, Ltd.: 5.9%
- Total Shares Outstanding: 31,411,107
- Employee Options (2019 Form 10K): 1,548,351
  ($3.68 Weighted Average Exercise Price)
- Warrants & Non-Employee Options (2019 Form 10K): 1,483,143
  ($2.13 Weighted Average Exercise Price)
Thank You.

Joseph M. Harary  
President and CEO  
Harary@SmartGlass.com

Research Frontiers Inc.  
240 Crossways Park Drive  
Woodbury, NY 11797  
516-364-1902