



**META<sup>®</sup>**  
**Go Beyond.**

NASDAQ:MMAT

AUGUST 2021



# Forward Looking Statements



This presentation includes forward-looking information or statements within the meaning of Canadian securities laws and within the meaning of Section 27A of the Securities Act of 1933, as amended, Section 21E of the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995, regarding the Company, Nanotech, their businesses and the proposed transaction, which may include, but are not limited to, statements with respect to the business strategies, product development, expansion plans and operational activities of the Company and Nanotech, and the benefits to the Company of the potential acquisition of Nanotech. Often but not always, forward-looking information can be identified by the use of words such as “potential,” “predicts,” “projects,” “seeks,” “plans,” “expect”, “intends”, “anticipated”, “believes” or variations (including negative variations) of such words and phrases, or statements that certain actions, events or results “may”, “could”, “should,” “would” or “will” be taken, occur or be achieved. Such statements are based on the current expectations and views of future events of the management of the Company and are based on assumptions and subject to risks and uncertainties. Although the management of the Company believes that the assumptions underlying these statements are reasonable, they may prove to be incorrect. The forward-looking events and circumstances discussed in this presentation may not occur and could differ materially as a result of known and unknown risk factors and uncertainties affecting the Company, including risks related to the potential benefits of the transaction with Nanotech, the capabilities of Nanotech’s facility and the expansion thereof, research and development projects of the Company, the market potential of the products of the Company and Nanotech, the market position of the Company, the completion of the transaction(including, without limitation, in respect of the court approvals to be obtained in connection therewith, the approval of the transaction by Nanotech

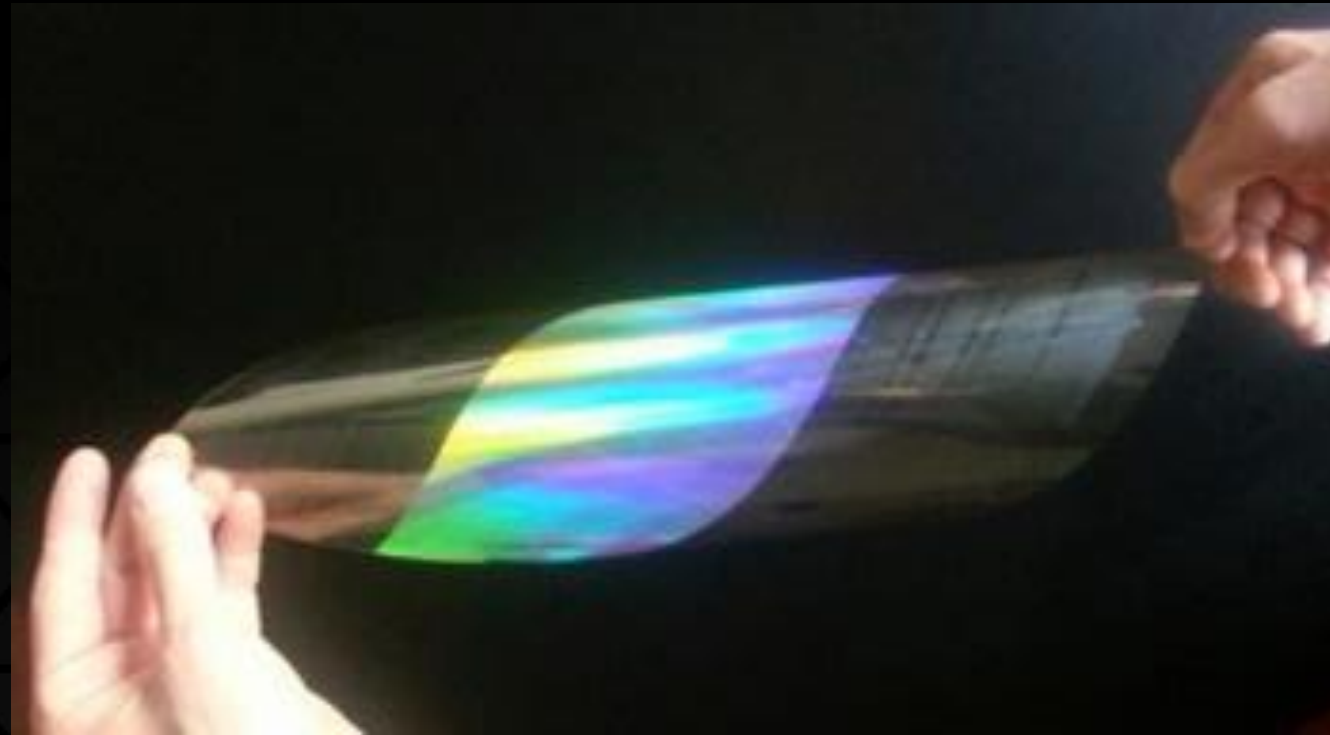
securityholders and the expected timing of closing of the transaction), the scalability of the Company’s production ability, the capacity for new customer engagements, material selection program timeframes, the ability to reduce production costs, the ability to enhance metamaterials manufacturing capabilities and extend market reach into new applications and industries, the ability to accelerate commercialization plans, the possibility of new customer contracts, the continued engagement of Nanotech’s team, the technology industry, market strategic and operational activities, and management’s ability to manage and to operate the business. More details about these and other risks that may impact the Company’s combined business are described under the heading “Forward Looking Information” in the Company’s Form 8-K filed with the SEC on July 23, 2021, and under the heading “Risk Factors” in the Company’s Form 10-Q filed with the SEC on May 14, 2021, in the Company’s Form 10-K filed with the SEC on March 18, 2021, and in subsequent filings made by Meta Materials with the SEC, which are available on SEC’s website at [www.sec.gov](http://www.sec.gov). Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results to differ from those which are anticipated, estimated or intended. Accordingly, readers should not place undue reliance on any forward-looking statements or information. No forward-looking statement can be guaranteed. Except as required by applicable securities laws, forward-looking statements speak only as of the date on which they are made and the Company does not undertake any obligation to publicly update or revise any forward looking statement, whether as a result of new information, future events, or otherwise, except to the extent required by law.

Unless otherwise stated, all references to \$ herein are to US dollars.



# Solutions for everyday life

**META**<sup>®</sup>



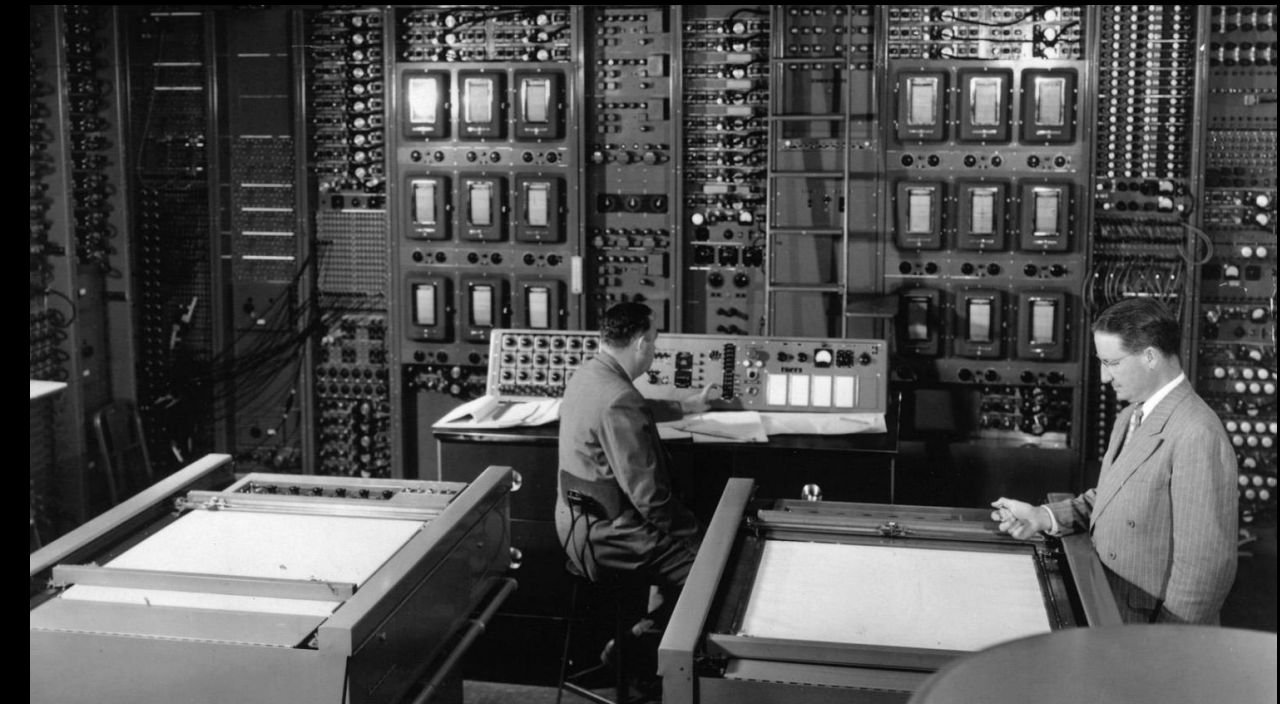
META delivers **breakthrough performance**, across a range of applications and industries, by designing, developing and manufacturing **sustainable, highly-functional materials**.



# The Birth of the Digital Age

Almost every great advancement in technology can be attributed to a **breakthrough in material science**:  
stone age => bronze age => iron age => => => silicon age

## Electronics THEN...



## Electronics NOW...

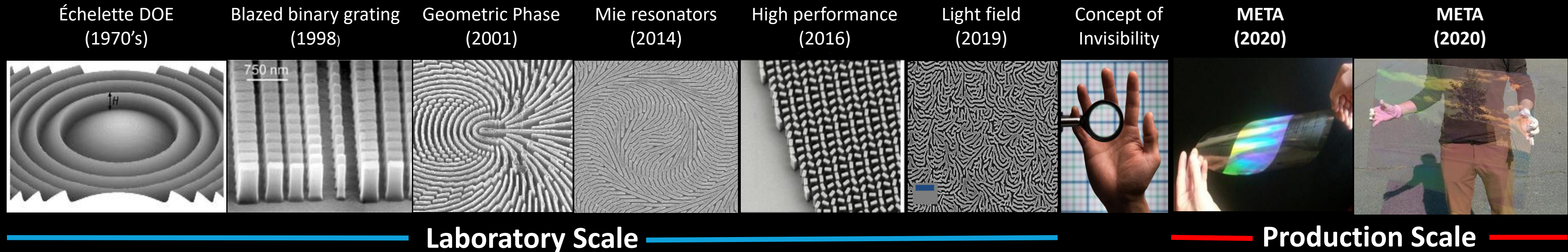


In 1956, the **Nobel Prize in Physics** was awarded jointly to Shockley, Bardeen and Brattain for their development of the **transistor**, driven by the discovery of semiconducting materials and the means to manipulate their properties



# Enabling the 21<sup>st</sup> Century “Age of Invisible Materials”

META<sup>®</sup>



## What are Metamaterials?

- **Metamaterials** control on demand **unique functional properties** in absorption, emission, sensing, transmission, and guiding of light, sound, energy, and heat, as well as friction, strength, and electric energy
- Metamaterials are typically created by patterning **composite and nanomaterials** (e.g. metals, dielectrics etc.)
- Until recently, development has taken place only at the **laboratory scale** on **very small substrates**

## The META Advantage

- **SPEED** - META uses **AI software** to design a library of patterns for different applications, it typically develops new custom solutions **within hours vs months**
- **SCALE** - META is one of the first companies to develop **proprietary roll-to-roll production equipment** to produce large area, high volume **nanocomposites**
- **COST** - Increasing the roll-to-roll web width and line speed should drive costs down to a **few \$/m<sup>2</sup>**

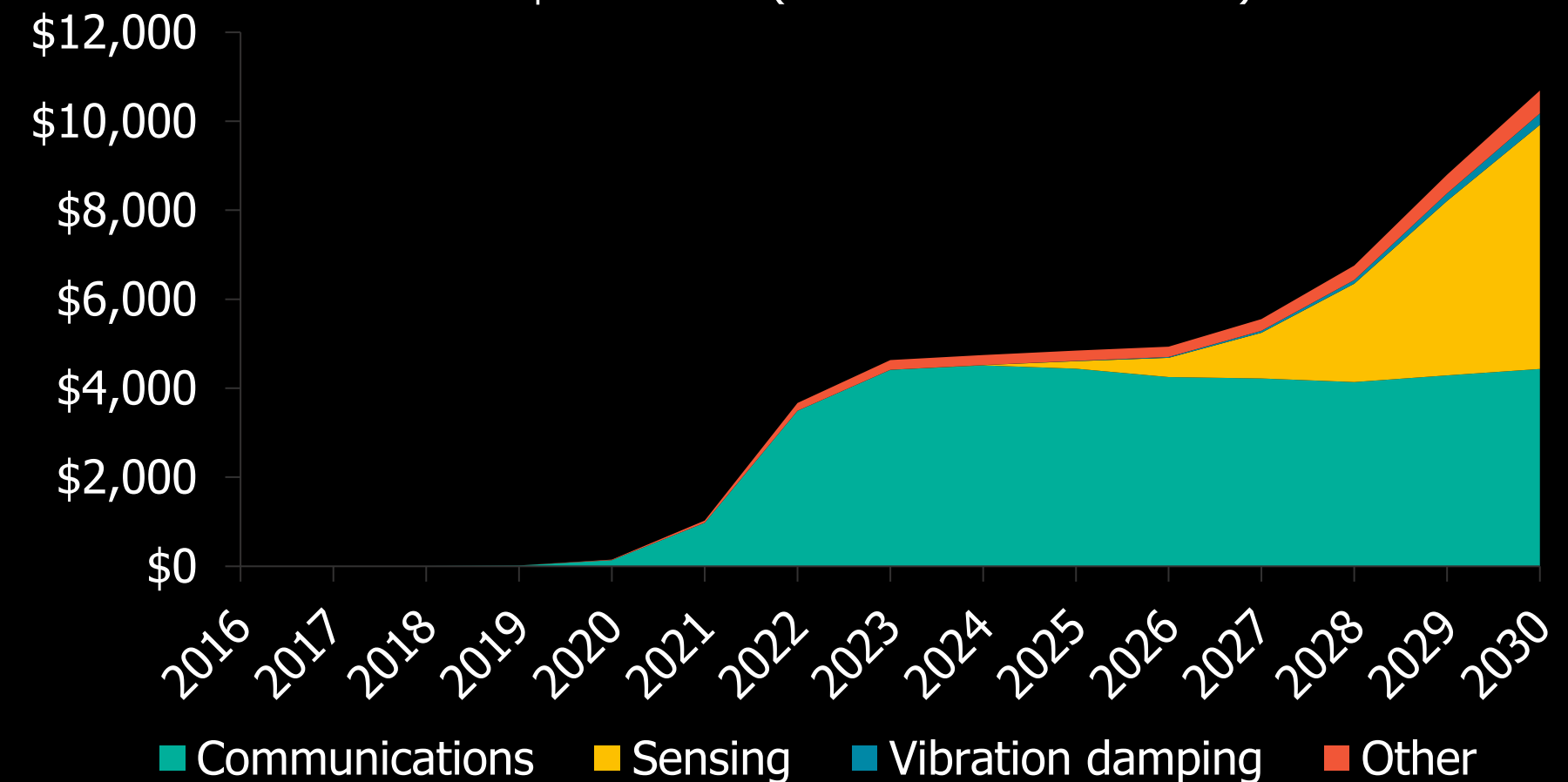


# Market Opportunity Driven by Several Megatrends

- **5G Infrastructure:**  
rollout requires new materials for transparent antennas and reflectors
- **Vehicle Electrification:**  
seismic shift toward EV, ADAS (advanced driver assistance systems) and autonomous vehicles
- **Combined >\$3T in Other Verticals:**  
Advanced Materials, IoT, Medical, Energy, Aerospace and Automotive markets
- **Scarcity, Control of Raw Materials:**  
supply of rare earths and materials such as ITO (Indium Tin Oxide) highly concentrated in Asia
- **Metamaterial Device Market:**  
**expected to grow to \$10.7B SAM by 2030**

## Metamaterials Market Forecast

US\$ Millions (Source: LUX Research)



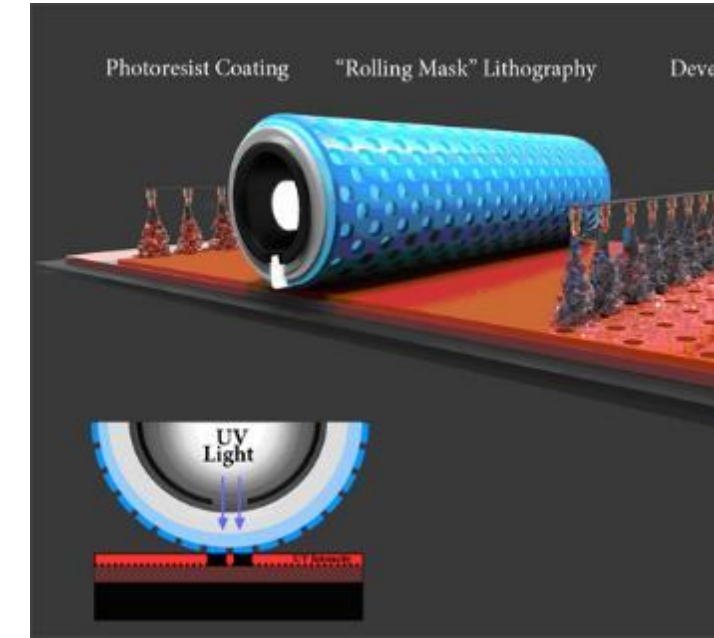


# Technology Platform Capabilities



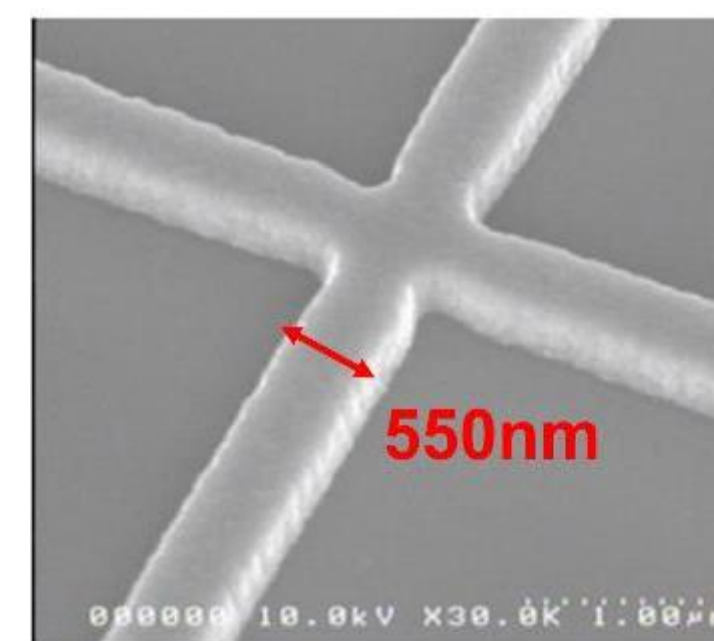
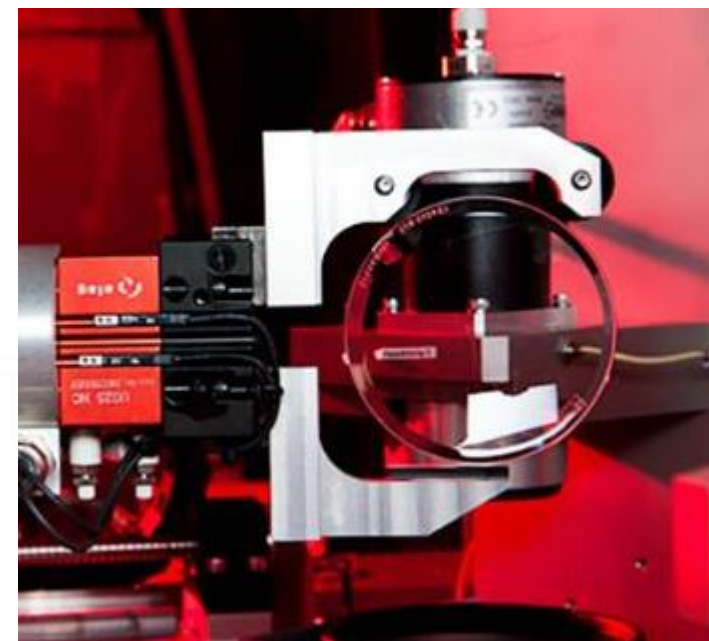
## HOLOGRAPHY

Laser records into photopolymer:  
holoOptix™ optical components  
SHIELD and metaAIR® laser glare protection  
ARfusion™ prescription AR smart glasses  
HUD displays for automotive, aerospace



## LITHOGRAPHY

RML® produces sub-micron metal mesh:  
NANOWEB® antennas, reflectors,  
EMI shielding, de-ice/de-fog



## WIRELESS SENSING

Metamaterial films enhance signals/images:  
glucoWISE® non-invasive glucose monitor  
radiWISE™ MRI image enhancement





# Transparent Passive 5G Reflector

META®

## PROBLEM:

Highest-speed 5G signals need line of sight, requiring placement of many small cells

## SOLUTION:

META's passive transparent window film reflects signal to cover dead zones

## MEGA TREND:

Carriers are spending \$ Billions on Infrastructure





# Invisible Antenna Enhances Indoor 5G and Digital TV Reception

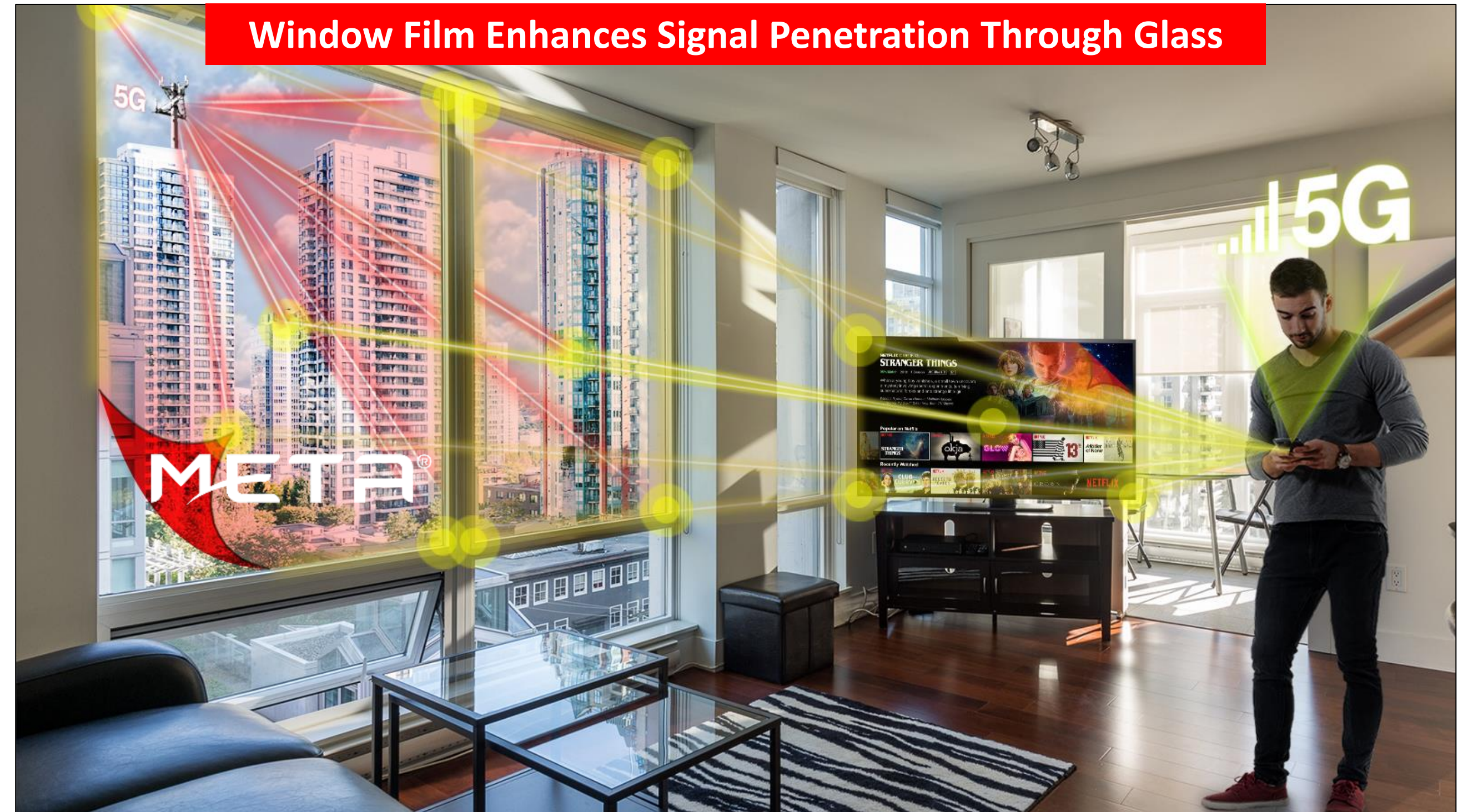
**META**<sup>®</sup>

## **PROBLEM:**

5G signals don't penetrate glass, buildings, requiring installation of internal networks

## **SOLUTION:**

META's passive transparent window film passes through 5G and Digital TV signals





# LIDAR Protection: De-Ice/De-Fog + EMI Shielding

**META**<sup>®</sup>

## **PROBLEM:**

ADAS and Autonomous vehicles depend on an array of cameras and sensors to “see” and understand their surroundings

## **SOLUTION:**

META NANOWEB<sup>®</sup> transparent conductive film provides deicing and defogging without blocking the camera/sensor functions

Nano-Heater to Protect Sensors Transparent to RADAR and LIDAR Simultaneously





## COMPETITIVE ADVANTAGES

- META's lithography capability enables fabrication of sensors & antennas completely **invisible** to the human eye
- META's touch sensors and transparent 5G antennas can be integrated into smartphone displays, on windows of vehicles or buildings and home appliances
- NANOWEB<sup>®</sup> is **flexible** - unlike the incumbent ITO (Indium Tin Oxide) technology – enabling sensors on **foldable phones**
- META's antennas can operate from low to high frequencies (3G, 5G/6G and beyond) and provide communication systems for conventional, EV and autonomous vehicles

— 200  $\mu\text{m}$




META Transparent 5G Antenna

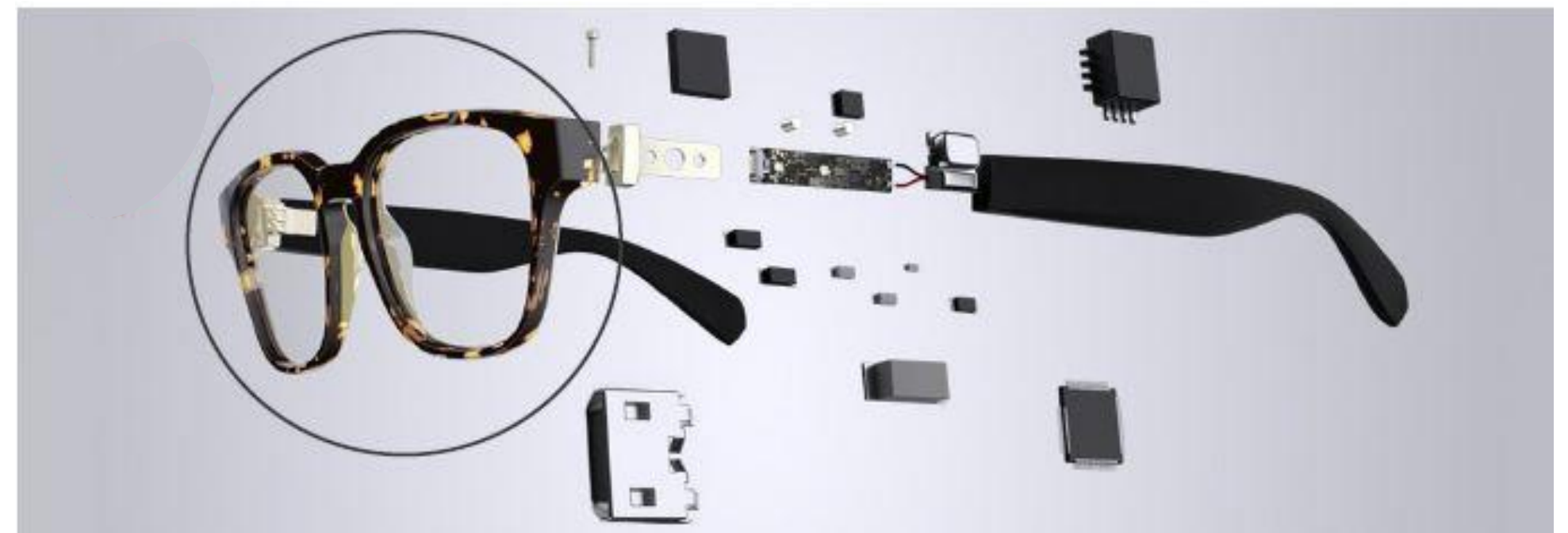
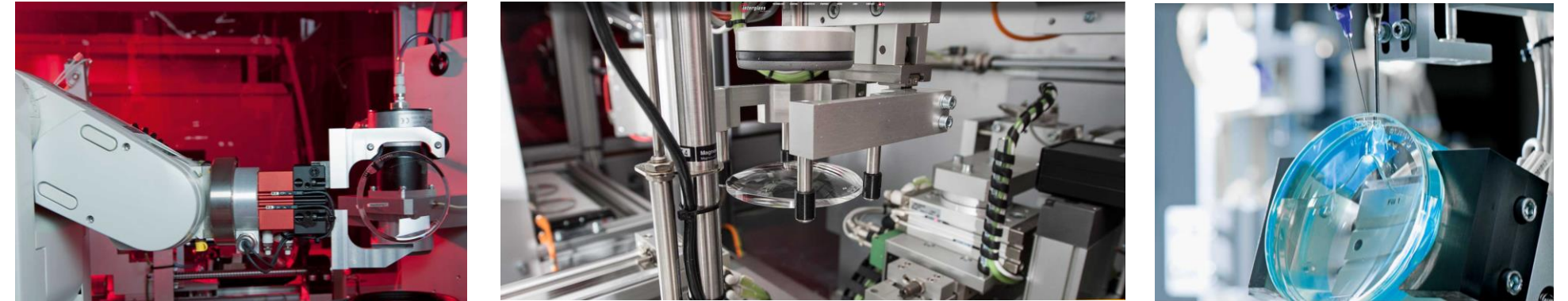




# ARfusion™ Integrates AR with Prescription Lenses



- **ARfusion™** integrates optical elements for AR (augmented reality) combined with lens casting technology developed by Interglass Technology AG
- META acquired assets & IP of Swiss lens manufacturer Interglass, 36 patents, trademarks and trade secrets, proprietary software and designs
- High volume fully automated lens casting, workstations, tools, test equipment, and technical data
- Proprietary specialty materials/foils supply in cooperation with **Covestro AG**
- Just-in-time production of prescription lenses and embedded elements such as optical combiners, waveguides, and eye tracking sensors
- **Highly Sustainable Process:**
  -  Less energy (10 sec vs 50 hours curing time)
  -  Zero water usage
  -  Less material usage



**\$1.5B**  
Augmented  
Reality Eyewear  
Market  
Source: BCC Research



# Solar Energy – Lighter Weight, Higher Efficiency

**META**<sup>®</sup>



## Ultra-Thin, Light and Flexible

- Ideal for the transportation industry
- Adds onboard power, charging



## Increases Solar Cell Efficiency

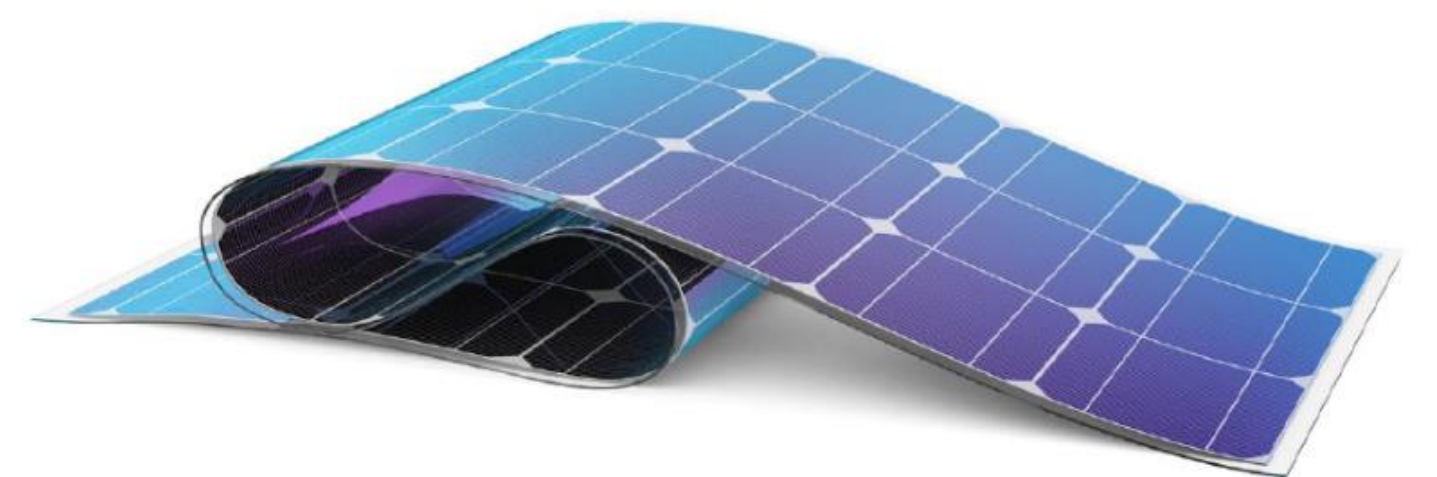
- Traps light that would otherwise be reflected, increases absorption

Over \$5Bn of Total Addressable Market



## Angular Absorption

- Captures sunlight from all angles
- Eliminates costly tracking systems



## Scalable

- Can be sized for small or large areas
- Applied to flat or curved surfaces



# Medical Applications: Mid- to Long-Term (2-7yrs) Potential



Functional metamaterials for Health and Wellness market – Licensing/Project Financing opportunities

## Image Enhancement

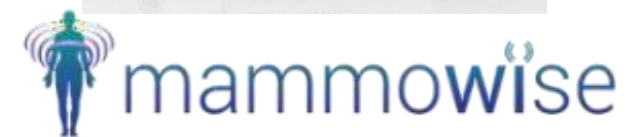


### MRI Medical Imaging

MRI Imaging with metamaterial film

MARKET POTENTIAL\*

**\$2.0+B**



### Early-Stage Breast Cancer Screening

Radio-wave Imaging for breast screening with metamaterial film

MARKET POTENTIAL\*

**\$4.0+B**

## Sensor enhancement



### Non-Invasive Glucometer

Dual Sensor mm-wave technology with metamaterial film ([www.gluco-wise.com](http://www.gluco-wise.com))

MARKET POTENTIAL\*

**\$15.0+B**



### Molecular Biosensor

Daily use Bio-photonic sensor with sensitivity and performance enhanced using nanomaterial to meet rising demand for point of care testing.

MARKET POTENTIAL\*

**\$10.0+B**

\*Source: Internal META estimates



# Solving Global Challenges Together With OEM Partners And Customers



Select Targeted Co-Development Partners and Customers in Automotive, Medical, Aerospace & Defense, Consumer Electronics and Energy





# Advanced Materials Competitive Landscape



**1 METAMATERIALS COMPANIES**  
Emerging, Disruptive performance, Low cost, High margins


**2 CHEMICAL & SPECIALTY MATERIALS**  
Incumbent, Bulk materials, Incremental performance, Commoditized


**3 CARBON NANOMATERIALS**  
Early stage, Difficult to scale, Low performance, Very expensive


**4 SEMICONDUCTOR MATERIALS**  
Incumbent, Process slow and expensive to scale, Rare earth price exposure


**5 ITO AND SPECIALTY COATINGS**  
Precious metal price exposure, Average performance

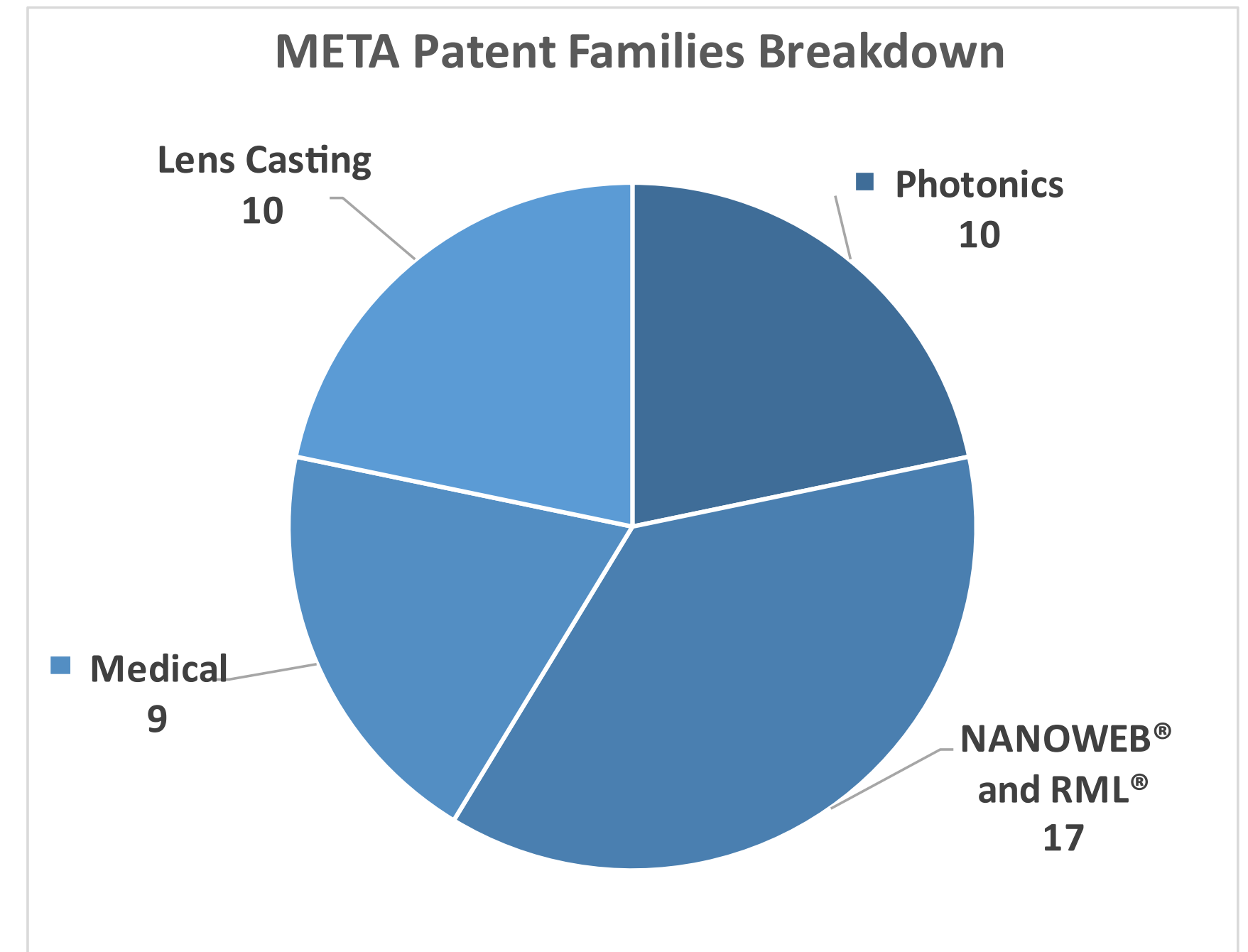

Existing META relationships

Source: LUX Research and Internal META estimates



# Intellectual Property & Know-How

- META has 149 filed patents (82 granted) across 46 patent families (28 granted)
- 8 registered trademarks
- Proprietary, custom manufacturing processes and trade secrets, developed over 10 years with multi-million \$ investment
- Processes and methods were patented early, providing multi-year competitive advantage





# Executive Team



**George Palikaras, Ph. D.**  
President and CEO, Founder  
12 years in leadership positions of high-tech startups. Goldman Sachs (10KSB), MIT Enterprise and EY awards for entrepreneurship, Stanford, Harvard, INSEAD Exec Ed. 50+ patents, 3 industry awards.



**Kenneth Rice, MBA, JD, LLM**  
Chief Financial Officer & EVP  
30+ years experience, public and private company CFO, in-house counsel, operations, and corporate development executive in technology and life sciences



**Jonathan Waldern, Ph. D.**  
Chief Technology Officer  
25 years experience in commercialization of holographic and lithographic/nanomaterials for photonic applications, inventor and visionary with 140+ patents



**Gardner Wade**  
Chief Product Officer  
20+ years in managing development engineering of high-definition optical eyewear for global brands in military, flight and performance sports applications



**Themos Kallos, Ph. D.**  
Chief Science Officer, Co-Founder  
10 years experience in applied physics, intellectual property development in metamaterial applications, 40+ filed patents and 50+ publications



**Scott Richards**  
Chief Marketing Officer  
20+ years in management consulting and marketing services, CEO, CMO, COO, strategic planning, and M&A, in Canada, the Caribbean, the UAE, and the U.S.



# Production Scale-Up Roadmap



Today

Q4:21

H1:22

## Platform Technologies

- Holography
- Lithography
- Wireless Sensing

## High-Volume Markets

- 5G Communications
- Electric Vehicles
- Consumer Electronics
- Clean Energy (+ more)

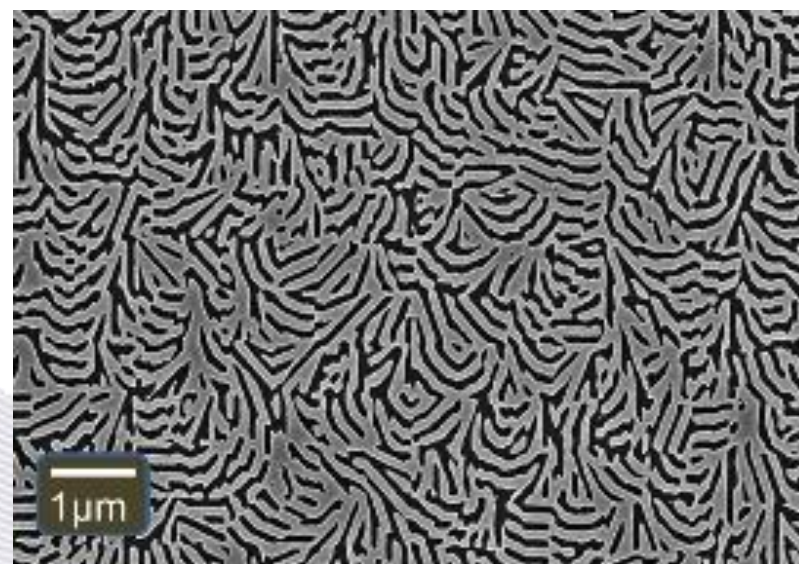
## New HQ Facility

- 68,000 square feet
- New Customer Center
- Retrofit underway

## Pilot Scale Production

- 500mm roll-to-roll
- \$10MM Capex
- H1:2022 start-up

Design, Test Samples



Wafer Scale Validation



New HQ Facility



R2R Licensed Pilot Line





# Nanotech Acquisition Strategic Rationale



## Nanotech Today – Accelerates and De-Risks META Production Scale-Up

### Design

- Optical Physics & Nanostructures
- Proprietary Software, 3D Image/Motion Graphics Development

### Origination

- High-Resolution Electron Beam Lithography
- Proprietary Nanofabrication Processes and Intellectual Property

### Recombination

- Expertise in recombination of nanostructures to preserve quality and fidelity over large areas

### Production

- Decades of experience in high-volume, roll-to-roll web processing
- Secure facility with capacity >7 million m<sup>2</sup>

**EBL Origination**



**SR-NIL UV Recombination**



**R2R UV Casting NIL**



**R2R Vacuum Deposition**





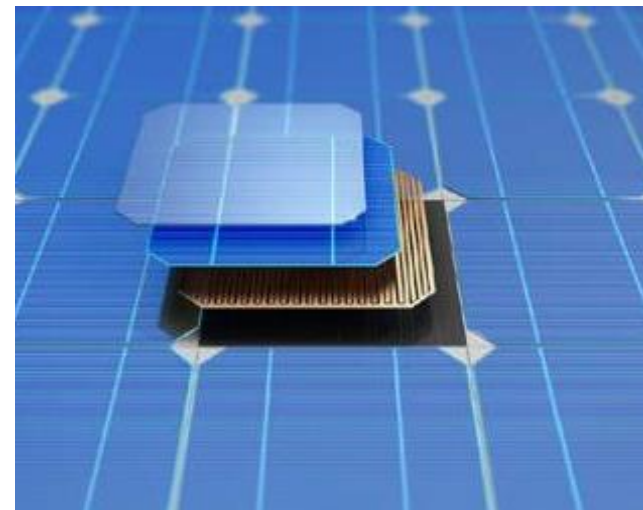
# Synergies and Market Expansion



## Complementary Technologies and Combined Resources Broaden Potential Markets/Applications

### Solar Energy

- Optical Physics & Nanostructures
- High-volume, R2R, thin film production, enables flexible format



### 5G & Other Antennas

- Micro-antennas in thin, flexible foil format
- Apply to surfaces with engineered transmission absorption, or reflection



### Battery & Fuel Cell

- Nanostructures to increase battery electrode surface area
- Increased energy density and reduced size & weight



### Carbon Capture

- Nano-porous membranes to remove carbon dioxide from the air
- Growing global carbon markets



*Together, the teams and technologies of META and Nanotech add strength to the combined companies' existing markets and to a range of new applications and markets.*



# Transaction and Assets Overview

META®

- **Purchase Price** C\$1.25 per share, payable in cash, C\$90.8MM equivalent to \$72.6MM
- Debt-free balance sheet
- **Transaction is Focused on Growth**  
META will invest and retain/add personnel  
Capacity expansion to 15 million square meters
- **Expected Closing Early October**  
Subject to Court and Securityholder approvals
- **~C\$19MM R&D, ~C\$22MM PP&E Invested**  
11.0 acres land, 105K square foot building  
47 issued and 22 pending patents
- **Confidential Central Bank Contract**  
C\$30MM multi-year development deal in 2017  
Seeking next-phase contract later in 2021

META®



NANOTECH



Leadership  
in metamaterials  
production at scale



# Selected Financial Highlights – Q2:21



CONDENSED CONSOLIDATED INTERIM STATEMENTS OF OPERATIONS (UNAUDITED)				
	Q2:2021	Q2:2020	H1:2021	H1:2020
<b>Total Revenue</b>	\$ 624,320	\$ 210,344	\$ 1,220,623	\$ 650,683
<b>Gross Profit</b>	\$ 623,614	\$ 209,008	\$ 1,219,517	\$ 648,523
Selling & Marketing	298,871	153,962	695,465	324,528
General & Administrative	3,145,367	1,553,118	5,738,252	3,157,652
Research & Development	1,633,653	960,430	3,412,909	1,892,601
<b>Total Operating Expenses</b>	\$ 5,077,891	\$ 2,667,510	\$ 9,846,626	\$ 5,374,781
Total Other Income (Exp) <sup>1</sup>	(784,962)	631,336	(40,815,329)	1,437,882
<b>Loss before income taxes</b>	\$ (5,239,239)	\$ (1,827,166)	\$ (49,442,438)	\$ (3,288,376)
Income tax recovery	57,847	10,425	102,526	54,347
<b>Net Loss</b>	\$ (5,181,392)	\$ (1,816,741)	\$ (49,339,912)	\$ (3,234,029)
<b>Net Loss per Share</b>	\$ (0.03)	\$ (0.01)	\$ (0.27)	\$ (0.03)
Weighted Average Shares	197,911,144	155,931,625	183,485,933	120,093,443

BALANCE SHEET HIGHLIGHTS (UNAUDITED)	
	6/30/ 2021
Cash and cash equivalents	154,634,423
Inventory	368,293
Assets held for sale	72,797,392
<b>Total current assets</b>	\$ 230,511,386
Intangible assets, net	4,389,607
Property, plant and equipment, net	5,382,196
Operating lease right-of-use assets	2,994,424
Goodwill	217,613,966
<b>Total assets</b>	\$ 460,891,579
Trade and other payables	5,377,375
Preferred stock dividends	77,906,354
Other current liabilities	3,970,610
<b>Total current liabilities</b>	\$ 87,254,339
Deferred revenue	681,625
Long-term debt, other	5,041,266
<b>Total non-current liabilities</b>	\$ 5,722,891
<b>Shareholders' equity</b>	\$ 367,914,349

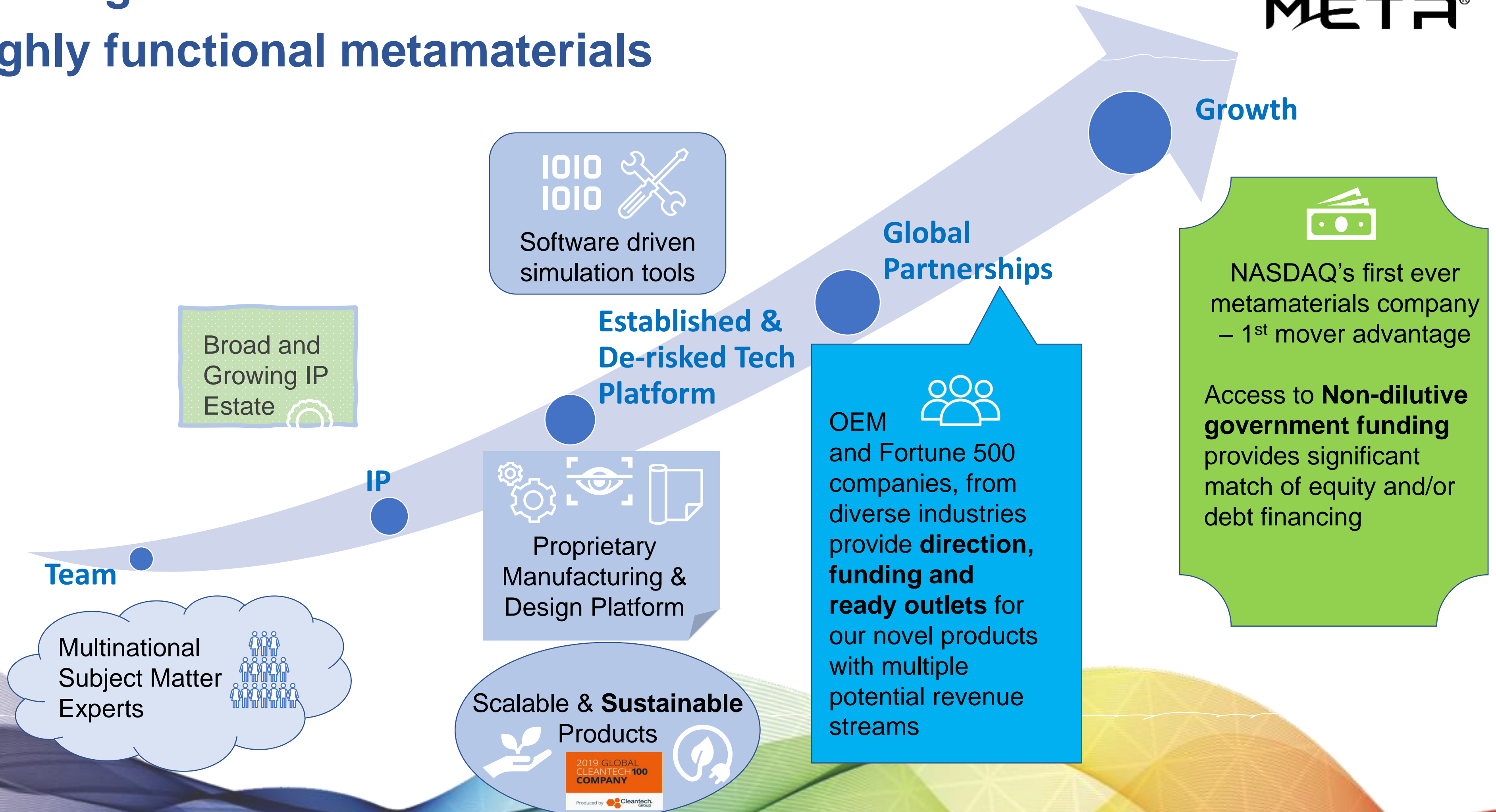
<sup>1</sup>Note: H1:2021 includes a \$40.5MM non-cash loss on financial instruments

This information should be read in conjunction with the complete financial statements and the associated management discussion and analysis, available on the Investors section of our website at [www.metamaterial.com](http://www.metamaterial.com), as well as on the SEC EDGAR website at [www.sec.gov](http://www.sec.gov)



# Leading the NEXT AGE of “invisible” highly functional metamaterials

META®







**META<sup>®</sup>**  
**Go Beyond.**

**Mark Komonoski**

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Integrous Communications

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