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Counsel for Plaintiff

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

_____, Individually and on
behalf of all others similarly situated,

Plaintiff,

v.

META MATERIALS INC. F/K/A
TORCHLIGHT ENERGY RESOURCES, INC.,
GEORGE PALIKARAS, KENNETH RICE,
GREG MCCABE, and JOHN BRDA,

Defendants.

Case No.

CLASS ACTION COMPLAINT FOR
VIOLATION OF THE FEDERAL SECURITIES
LAWS

JURY TRIAL DEMANDED

CLASS ACTION

Plaintiff _____ (“Plaintiff”), individually and on behalf of all other persons similarly situated, by Plaintiff’s undersigned attorneys, for Plaintiff’s complaint against Defendants (defined below), alleges the following based upon personal knowledge as to Plaintiff and Plaintiff’s own acts, and information and belief as to all other matters, based upon, inter alia, the investigation conducted by and through Plaintiff’s attorneys, which included, among other things, a review of the defendants’ public documents, conference calls and announcements made by defendants, United States Securities and Exchange Commission (“SEC”) filings, wire and

press releases published by and regarding Meta Materials Inc. f/k/a Torchlight Energy Resources, Inc. (“Meta” or the “Company”), analysts’ reports and advisories about the Company, and other information readily obtainable on the Internet. Plaintiff believes that substantial evidentiary support will exist for the allegations set forth herein after a reasonable opportunity for discovery.

NATURE OF THE ACTION

1. This is a federal securities class action on behalf of a class consisting of all persons and entities other than Defendants who purchased or otherwise acquired the publicly traded securities of the Company between September 21, 2020 and December 14, 2021, both dates inclusive (the “Class Period”). Plaintiff seeks to recover compensable damages caused by Defendants’ violations of the federal securities laws and to pursue remedies under Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 (the “Exchange Act”) and Rule 10b-5 promulgated thereunder.

JURISDICTION AND VENUE

2. The claims asserted herein arise under and pursuant to §§10(b) and 20(a) of the Exchange Act (15 U.S.C. §§78j(b) and §78t(a)) and Rule 10b-5 promulgated thereunder by the SEC (17 C.F.R. §240.10b-5).

3. This Court has jurisdiction over the subject matter of this action under 28 U.S.C. §1331 and §27 of the Exchange Act.

4. This Court has jurisdiction over each defendant named herein because each defendant has sufficient minimum contacts with this judicial district so as to render the exercise of jurisdiction by this Court permissible under traditional notions of fair play and substantial justice.

5. Venue is proper in this judicial district pursuant to §27 of the Exchange Act (15 U.S.C. §78aa) and 28 U.S.C. §1391(b) as the alleged misstatements entered and subsequent damages took place within this judicial district.

6. In connection with the acts, conduct and other wrongs alleged in this Complaint, Defendants, directly or indirectly, used the means and instrumentalities of interstate commerce, including but not limited to, the United States mail, interstate telephone communications and the facilities of the national securities exchange.

PARTIES

7. Plaintiff, as set forth in the accompanying Certification, purchased the Company's securities at artificially inflated prices during the Class Period and was economically damaged thereby.

8. Defendant Meta purports to be a developer of high-performance functional materials and nanocomposites. Before the business combination with Metamaterial Inc. ("Metamaterial"), which closed June 28, 2021 (the "Business Combination"), the Company was known as "Torchlight Energy Resources, Inc."

9. Defendant Meta is incorporated in Nevada with its headquarters in Dartmouth, Nova Scotia, Canada. Meta's common stock is listed on NASDAQ under the ticker symbol "MMAT." Prior to the merger, the Company's shares traded on NASDAQ under the ticker symbol "TRCH."

10. Defendant George Palikaras ("Palikaras") was at all pertinent times the founder and Chief Executive Officer ("CEO") of Metamaterial. Since the merger, Defendant Palikaras has served as the CEO, President, and as a Director of the Company.

11. Defendant Kenneth Rice (“Rice”) was the Chief Financial Officer (“CFO”) and Executive Vice President (“EVP”) of Metamaterial. Since the merger, Defendant Rice has served as the CFO and EVP of the Company.

12. Defendant Greg McCabe (“McCabe”), prior to the Business Combination, was the Company’s Chairman of the Board of Directors.

13. Defendant John Brda (“Brda”), prior to the Business Combination, was the Company’s President, CEO, and Secretary.

14. Defendants Palikaras, Rice, McCabe, and Brda are collectively referred to herein as the “Individual Defendants.”

15. Each of the Individual Defendants:

- (a) directly participated in the management of the Company;
- (b) was directly involved in the day-to-day operations of the Company at the highest levels;
- (c) was privy to confidential proprietary information concerning the Company and its business and operations;
- (d) was directly or indirectly involved in drafting, producing, reviewing, and/or disseminating the false and misleading statements and information alleged herein;
- (e) was directly or indirectly involved in the oversight or implementation of the Company’s internal controls;
- (f) was aware of or recklessly disregarded the fact that the false and misleading statements were being issued concerning the Company; and/or
- (g) approved or ratified these statements in violation of the federal securities laws.

16. The Company is liable for the acts of the Individual Defendants and its employees under the doctrine of *respondeat superior* and common law principles of agency because all of the wrongful acts complained of herein were carried out within the scope of their employment.

17. The scienter of the Individual Defendants and other employees and agents of the Company is similarly imputed to the Company under *respondeat superior* and agency principles.

18. The Company and the Individual Defendants are referred to herein as the “Defendants.”

SUBSTANTIVE ALLEGATIONS

Materially False and Misleading Statements

19. On September 21, 2020, the Company issued a press release entitled “TORCHLIGHT AND METAMATERIAL ANNOUNCE PLANNED BUSINESS COMBINATION” which announced the Business Combination and stated the following, in pertinent part, regarding Metamaterial’s agreements, commercialization, products, and production:

META has an extensive intellectual property portfolio, a global presence and multiple R&D and product development agreements with government agencies and private enterprises. The combined entity will continue to service a clientele of world-class OEM customers for a range of applications in the automotive, aerospace and defense, energy, consumer electronics and medical markets.

* * *

“META’s management, led by George Palikaras has built an extraordinary award-winning cleantech company *whose proprietary advanced technologies address multiple markets and improve their customer’s capabilities*,” said Greg McCabe, Torchlights [sic] Chairman.

* * *

META’s products are designed and manufactured with environmental sustainability as a high priority. ... *META has also partnered with Lockheed Martin* and the Canadian Government’s Sustainable Development Technology Canada (SDTC) fund to develop metaSOLAR™ a new solar energy product suitable for the transportation industry.

Since 2011, approximately CAD \$60MM has been invested in META, yielding a sizable IP portfolio. In 2020 to date, META has been granted 11 new patents. META has a total of 52 granted and 37 pending patent applications, including 26 in the United States and 63 in 18 other countries around the world. META's portfolio comprises 28 patent families, 19 of which are granted.

(Emphasis added.)

20. On December 14, 2020, the Company issued a press release entitled "METAMATERIAL AND TORCHLIGHT SIGN DEFINITIVE AGREEMENT FOR BUSINESS COMBINATION" which stated the following regarding Metamaterial's commercialization, products, and production:

"We are very excited to sign the definitive agreement with Metamaterial," stated John Brda, Torchlight's CEO. "We believe this Transaction provides our shareholders with the best opportunity moving forward. *Metamaterial offers proven disruptive technology* with strong environmental, social and governance (ESG) priorities. *This Transaction provides our shareholders with access to the multi-billion-dollar markets that Metamaterial serves ...*"

"META's management, led by George Palikaras, has built an extraordinary award-winning cleantech company whose proprietary advanced technologies address multiple markets and improve their customers' capabilities," said Greg McCabe, Torchlight's Chairman.

(Emphasis added.)

21. On June 16, 2021 and June 21, 2021, the Company filed with the SEC prospectus supplements on Forms 424B5 which stated the following, in pertinent part, regarding Metamaterial's commercialization, products, and production: "*Meta's advanced structural design technologies and scalable manufacturing methods provide a path to broad commercial opportunities in aerospace, medical, automotive, energy and other industries.*" (Emphasis added.)

22. On July 6, 2021, the Company issued a press release entitled "META COMPLETES UK-FUNDED PROJECT TOWARDS DEVELOPING NON-INVASIVE

GLUCOSE SENSING SYSTEM” which stated the following, in pertinent part, regarding the Company’s products:

Meta Materials Inc. (the “Company” or “META®”) (NASDAQ:MMAT) a developer of high-performance functional materials and nanocomposites, today announced the conclusion of a 27-month long project to develop a non-invasive glucose sensing prototype, which combined radio wave and optical sensors to improve accuracy in predicting glucose level changes. ...



META's glucoWISE® Point-of-Care "Home Hub" Product Concept

... Preliminary results of the project, using an early prototype system, were published in the journal *Sensors* (<https://doi.org/10.3390/s21093275>), which may also be found on META’s website under Applications / Medical Applications. The novel multiwavelength biosensing technology is protected with two patent applications filed in 2021 and extends the previous research work on this topic resulting in a total of 5 patent families, comprising 11 international patents (4 granted, 7 pending).

23. On August 13, 2021, the Company filed with the SEC its quarterly report on Form 10-Q for the period ended June 30, 2021 (the “2Q21 Report”). Attached to the 2Q21 Report were certifications pursuant to the Sarbanes-Oxley Act of 2002 (“SOX”) signed by Defendants Palikaras and Rice attesting to the accuracy of financial reporting, the disclosure of any material changes to the Company’s internal control over financial reporting and the disclosure of all fraud.

24. The 2Q21 Report stated the following, in pertinent part, regarding the Company’s agreements, commercialization, products, and production:

BUSINESS AND OPERATIONAL OVERVIEW

The Company has generated a portfolio of intellectual property and is now moving toward commercializing products *at a performance and price point combination that has the potential to be disruptive in multiple market verticals*. The Company's platform technology includes holography, lithography, and medical wireless sensing. ... *The Company's advanced structural design technologies and scalable manufacturing methods provide a path to broad commercial opportunities* in aerospace and defense, automotive, energy, healthcare, consumer electronics, and data transmission.

* * *

Holography Technology

Meta's principal products that employ holography technology are its METAIR® laser glare protection eyewear, METAIR® laser protection films for law enforcement and metaOPTIX™ notch filters. Meta co-developed its METAIR® laser protection eyewear product with Airbus S.A.S. that has been engineered to provide laser glare protection for pilots, military and law enforcement using Meta's holography technology. METAIR® is a holographic optical filter developed using nano-patterned designs that block and deflect specific colors or wavelengths of light. Meta launched METAIR® with strategic and exclusive distribution partner, Satair, a wholly owned Airbus company and *started producing and selling METAIR® in April 2019. The scale-up and specification for the raw photopolymer material used to produce the eyewear was successfully finalized in late 2019 and commercialized in 2020*. Meta launched its laser protection films for law enforcement use in late 2020. These films are designed to be applied to face shields and helmet visors providing the wearer with the same type of laser eye protection afforded to pilots by METAIR® glasses while preserving peripheral vision critical to law enforcement duties.

* * *

Lithography Technology

... The Company's current principal prototype product in lithography technology is its transparent conductive film, NANOWEB®. The lithography division operates out of the Company's wholly owned U.S. subsidiary, *which can produce meter-long samples of NANOWEB®*, at a small volumes scale, for industry customers/partners.

There are six NANOWEB®-enabled products and applications that are currently in early stages of development including NANOWEB® for Transparent EMI Shielding, NANOWEB® for Transparent Antennas, NANOWEB® for 5G signal enhancement, NANOWEB® for Touch Screen Sensors, NANOWEB® for Solar cells and NANOWEB® for Transparent Heating to de-ice and de-fog. More details of these products and applications can be found in META's EDGAR filings and on META's website at www.metamaterial.com.

Throughout 2020 and 2021, the Company has been ordering and upgrading its equipment at its California facility to efficiently supply NANOWEB® samples in

larger volumes. The Company has entered into a collaboration agreement with Crossover Solutions Inc. to commercialize the NANOWEB®- enabled products and applications for the automotive industry and with ADI Technologies to help secure contracts with the US Department of Defense.

Wireless Sensing Technology

Wireless Sensing is the ability to cancel reflections (anti-reflection) from the skin to increase the Signal-to-Noise- Ratio (“SNR”) transmitted through body tissue to enable better medical diagnostics. This breakthrough wireless sensing technology is made using proprietary patterned designs, printed on metal-dielectric structures on flexible substrates that act as anti-reflection (impedance-matching) coatings when placed over the human skin in combination with medical diagnostic modalities, such as MRI, ultrasound systems, *non-invasive glucometers* etc. For example, as a medical imaging application, the Company is developing metaSURFACE™ (also known as RadiWise™) an innovation which allows up to 40 times more energy to be transmitted through the human tissue, instead of being reflected. The benefit is increased diagnostic speed and imaging accuracy leading to patient throughput increases for healthcare providers. The metaSURFACE™ device consists of proprietary non-ferrous metallic and dielectric layers that are exactly designed to interact (resonate) with radio waves allowing the waves to “see-through the skin”.

(Emphasis added.)

25. The statements referenced in ¶¶ 19-24 above were materially false and/or misleading because they misrepresented and failed to disclose the following adverse facts pertaining to the Company’s business, operational, and financial results, which were known to Defendants or recklessly disregarded by them. Specifically, Defendants made false and/or misleading statement and/or failed to disclose that: (1) the Business Combination would result in an SEC investigation and subpoena in the matter captioned *In the Matter of Torchlight Energy Resources, Inc.*; (2) the Company has materially overstated its business connections and dealings; (3) the Company has materially overstated its ability to produce and commercialize its products; (4) the Company has materially overstated its products’ novelty and capabilities; (5) the Company’s products did not have the potential to be disruptive because, among other things,

the Company priced its products too high; and (6) as a result, Defendants’ public statements were materially false and/or misleading at all relevant times.

The Truth Begins to Emerge

26. On November 15, 2021, after market hours, the Company filed with the SEC its quarterly report on Form 10-Q for the period ended September 30, 2021 (the “3Q21 Report”).

The 3Q21 Report announced the SEC subpoena, stating the following in pertinent part:

In September 2021, the Company received a subpoena from the Securities and Exchange Commission, Division of Enforcement, in a matter captioned In the Matter of Torchlight Energy Resources, Inc. The subpoena requests that the Company produces certain documents and information related to, among other things, the merger involving Torchlight Energy Resources, Inc. and Metamaterial Inc. The Company is cooperating and intends to continue to cooperate with the SEC’s investigation. The Company can offer no assurances as to the outcome of this investigation or its potential effect, if any, on the Company or its results of operation.

(Emphasis added.)

27. On this news, Meta’s shares fell 3.9% to close at \$4.77 per share on November 16, 2021, damaging investors.

28. The 3Q21 Report also continued misleading investors, stating the following, in pertinent part, regarding the Company’s agreements, commercialization, products, and production:

BUSINESS AND OPERATIONAL OVERVIEW

The Company has generated a portfolio of intellectual property and is now moving toward commercializing products *at a performance and price point combination that has the potential to be disruptive in multiple market verticals*. The Company’s platform technology includes holography, lithography, and medical wireless sensing. ... *The Company’s advanced structural design technologies and scalable manufacturing methods provide a path to broad commercial opportunities* in aerospace and defense, automotive, energy, healthcare, consumer electronics, and data transmission.

* * *

Holography Technology

... META's principal products that employ holography technology are its METAIR® laser glare protection eyewear, METAIR® laser protection films for law enforcement and METAOPTIX™ notch filters. META co-developed its METAIR® laser glare protection eyewear product with Airbus S.A.S. that has been engineered to provide laser glare protection for pilots, military and law enforcement using META's holography technology. METAIR® is a holographic optical filter developed using nano-patterned designs that block and deflect specific colors or wavelengths of light. META launched METAIR® with strategic and exclusive distribution partner, Satair, a wholly owned Airbus company and started producing and selling METAIR® in April 2019. ***The scale-up and specification for the raw photopolymer material used to produce the eyewear was successfully finalized in late 2019 and commercialized in 2020.*** META launched its laser glare protection films for law enforcement use in late 2020. These films are designed to be applied to face shields and helmet visors providing the wearer with the same type of laser eye protection afforded to pilots by METAIR® glasses while preserving peripheral vision critical to law enforcement duties. METAOPTIX™ notch filters are optical filters that selectively reject a portion of the spectrum, while transmitting all other wavelengths. They are used in applications where it is necessary to block light from a laser, as in machine vision applications and in confocal or multi-photon microscopy, laser-based fluorescence instrumentation, or other life science applications. METAOPTIX™ notch filters were commercially launched by the Company in November 2020.

* * *

Lithography Technology

... ***The Company's current principal prototype product in lithography technology is its transparent conductive film, NANOWEB®.*** The lithography division operates out of the Company's wholly owned U.S. subsidiary, ***which can produce meter-long samples of NANOWEB®***, at a small volumes scale, for industry customers/partners.

There are six NANOWEB®-enabled products and applications that are currently in early stages of development including NANOWEB® for Transparent EMI Shielding, NANOWEB® for Transparent Antennas, NANOWEB® for 5G signal enhancement, NANOWEB® for Touch Screen Sensors, NANOWEB® for Solar cells and NANOWEB® for Transparent Heating to de-ice and de-fog. More details of these products and applications can be found in META's EDGAR filings and on META's website at www.metamaterial.com.

Throughout 2020 and 2021, the Company has been ordering and upgrading its equipment at its California facility to efficiently supply NANOWEB® samples in larger volumes. The Company has entered into a collaboration agreement with Crossover Solutions Inc. to commercialize the NANOWEB® enabled products and applications for the automotive industry and with ADI Technologies to help secure contracts with the US Department of Defense.

Wireless Sensing Technology

Wireless Sensing is the ability to cancel reflections (anti-reflection) from the skin to increase the Signal-to-Noise- Ratio (“SNR”) transmitted through body tissue to enable better medical diagnostics. This breakthrough wireless sensing technology is made using proprietary patterned designs, printed on metal-dielectric structures on flexible substrates that act as anti-reflection (impedance-matching) coatings when placed over the human skin in combination with medical diagnostic modalities, such as MRI, ultrasound systems, *non-invasive glucometers* etc. For example, as a medical imaging application, the Company is developing metaSURFACE™ (also known as RadiWise™) an innovation which allows up to 40 times more energy to be transmitted through the human tissue, instead of being reflected. The benefit is increased diagnostic speed and imaging accuracy leading to patient throughput increases for healthcare providers. The metaSURFACE™ device consists of proprietary non-ferrous metallic and dielectric layers that are exactly designed to interact (resonate) with radio waves allowing the waves to “see-through the skin”.

(Emphasis added.)

29. Attached to the 3Q21 Report were certifications pursuant to SOX signed by Defendants Palikaras and Rice attesting to the accuracy of financial reporting, the disclosure of any material changes to the Company’s internal control over financial reporting and the disclosure of all fraud.

30. The statements referenced in ¶¶ 28 and 29 above were materially false and/or misleading because they misrepresented and failed to disclose the following adverse facts pertaining to the Company’s business which were known to Defendants or recklessly disregarded by them. Specifically, Defendants made false and/or misleading statements and/or failed to disclose that: (1) the Company has materially overstated its business connections and dealings; (2) the Company has materially overstated its ability to produce its products; (3) the Company has materially overstated its products’ novelty and capabilities; (4) the Company prices its products too high and not at a price point that has the potential to be disruptive; and (5) as a result, Defendants’ public statements were materially false and/or misleading at all relevant times.

The Truth Emerges

31. On December 14, 2021, during market hours, market researcher Kerrisdale Capital released a report (the “Report”) alleging, among other things, that “Meta has habitually made outlandish and misleading claims about the feasibility, development, and commercial potential of various technologies only to repeatedly move the goalposts or retrospectively alter its claims, often just quietly dropping entire projects they had previously touted as pivotal.” The Report further summarized its findings, in relevant part, as follows:

Meta’s public company filings and website portray an “advanced materials and photonics company...seeking to harness the power of light” in three areas: holography, lithography, and wireless sensing. But as we discuss at length below, ***Meta’s three current “businesses” have generated just about zero product revenue over the last ten years despite continuously making grandiose product development claims.*** We expect this trend to continue given *that the company has never actually commercialized anything.*

* * *

Before assessing whether there’s any commercial substance to these segments (in short: no), it’s instructive to examine the quiet failure of Meta’s early technological forays and the creative ways Meta was able to finance a façade of scientific accomplishment with no legitimate underpinning.

* * *

[Meta] deceptively promoted its early endeavors, seemingly in the pursuit of funding that almost certainly would not have been forthcoming if the truth were known to Meta’s counterparties. ***The company’s current operations range from the dismal failure of LGP glasses to the empty husk of the once-interesting NanoWeb to the outright falsehoods being told to promote non-existent medical devices.*** If that weren’t enough, the questionable circumstances around its reverse merger with Torchlight – tainted by a dubious CFO appointment, promotional social media buzz, and purposely muddied disclosures around suspiciously successful capital raises – make our assessment that much more damning. ... Holograms and thin films are a fitting metaphor for Meta: a company that looks interesting at first glance but turns out to be a hollow illusion behind a flimsy veneer of aggressive promotion.

(Emphasis added.)

32. The Report stated the following, in relevant part, regarding the Company’s partnerships, grants, and deals:

Meta’s description of the Lambda Solar segment remained unchanged from 2017 to 2020, prominently promoting the Lockheed “partnership” but never actually indicating any progress towards development of a product. Currently, Meta’s website description of its solar business is the same one it’s presented since 2014, except it’s no longer call “Lambda Solar.” *The consistent description of the relationship with Lockheed as a “partnership” is also directly at odds with the contract, in which Lockheed stipulates that the agreement “is not intended to constitute, give effect to, or otherwise create a joint venture, partnership, teaming agreement or other business entity of any kind.* [emphasis added]” [sic]

* * *

Meta Materials creatively financed itself through research grants and customer deposits that were never earned, and more recently through reverse mergers

... In July of 2018, Satair, a subsidiary of Airbus that distributes aircraft parts and equipment, signed a \$2 million (USD) purchase order for Meta’s LGP glasses. Two months later, Satair signed an agreement to become the exclusive distributor of the LGP frames, paying Meta a C\$1.3 million fee for the privilege. Two months after *that*, Satair advanced \$500 thousand (C\$655 thousand) in cash for the July purchase order. *To date, of the \$2 million order, only C\$34 thousand has been filled, with about half a million dollars remaining an operating liability.* The exclusivity fee, meanwhile, was booked by Meta as deferred revenue, which it continues to recognize at the current time. *It turns out that Satair essentially funded Meta to the tune of C\$2 million in return for 50 pairs of overpriced glasses to which plenty of cheaper and better alternatives exist (more on that below).*

The relationships with Lockheed and Satair provided Meta with two cash infusions totaling C\$7.5 million that the company was able to *also* conveniently recognize as “development revenue” spread out over years, *ironically without ever actually developing anything of value.* Another creative source of funding for Meta over the years has been a variety of Canadian government-affiliated investments and loans:

- Between 2013 and 2019, the Atlantic Canada Opportunities Agency (ACOA), a Canadian government regional development agency, lent C\$6.8 million to Meta, almost entirely in the form of interest free loans, and almost all of which is still outstanding. *The lion’s share of these loans – C\$6 million – was meant to support the commercialization of the Lamda Guard laser protection shields, a project subsequently dropped by Meta, and the LGP glasses, which Meta has been unsuccessful in commercializing.*
- Sustainable Development Technology Canada (SDTC), a Canadian government-sponsored foundation that funds “clean-tech” startups, agreed to invest C\$5.4M in Meta in late 2017 to fund expenses related to a project titled “Enabling solar flight: a testing ground for lightweight and efficient solar panels.” As with the Lockheed investment, *this was over 3 years*

after Lamda Solar was no longer active, so it's not clear what Meta was going to do with the money. In the end, SDTC only invested C\$1.99M, seemingly because Meta was not meeting its end of the deal, and there's since been no disclosure from Meta as to how, or if, the project is advancing.

(Emphasis added.)

33. The Report stated the following, in pertinent part, regarding the Company's products and ability to commercialize them:

Meta's Current "Operations" are a Collection of Hopeless, Fake, and Obsolete Science Experiments

Meta's press releases and recent filings are meant to give (mostly retail) investors the impression of an advanced materials company with proprietary "nano" technology that can be applied to making progress in fields like medtech, automotive, 5G telecom, and "augmented reality." If those sound like industries that coincidentally are expected to have the most exciting growth opportunities right now, and have therefore garnered the most generous valuations, that's not a coincidence. As Meta's experience with Lamda Solar and Lamda Lux have shown, *the company has a track record of making misleading announcements and proclamations around its capabilities in trendy industries, such as solar and LED lighting ten years ago, only to quietly fail and move on to promoting the next breakthrough.* But as with Solar and Lux, we expect Meta's current businesses – to the extent they really exist – to wallow in irrelevance.

* * *

We can't find any record of Satair's blog posts marketing metaAIR glasses, and *it's difficult to explain why, if Meta really had completed the construction of a production facility, they didn't fill Satair's C\$2 million purchase order of which Satair had already provided a cash down payment of C\$500 thousand!* If the tens of millions of dollars that were raised explicitly for the development and commercialization of this technology over the last seven years were really invested for that purpose, Meta's inability to manufacture the metaAIR glasses at any level of scale reflects the magnitude of its operational ineptitude. It also suggests that, consistent with its longstanding practice, *Meta may have greatly exaggerated its accomplishment of completing a production facility.*

It's notable that the *metaAIR product is not even very good.* The underlying holographic technology, which involves using lasers to alter the optical properties of transparent light-sensitive polymers that comprise a thin film, is difficult and expensive to implement. It's also complete overkill for a niche product with a lot of competition from cheaper and lower-tech alternatives that happen to do a much better job at protecting pilots' eyes from potential laser strikes. Dye-based lenses,

such as those manufactured by Gentex and Revision, offer better durability, protection from multiple angles, and protection from a range of dangerous wavelengths, ***all for 15% of the price for which the metaAIR frames sell.*** Non-holographic thin-film options, such as those from Iridian and PerriQuest effectively offer the same protection as metaAIR lenses, ***also for 10-15% of the price.*** The ***metaAIR glasses are expensive, lack peripheral vision protection, are extremely vulnerable to scratching, and were only developed to protect from green-wavelength lasers*** (whereas the competitors mentioned here also offer protection from blue and red wavelengths). ***Even if Meta could figure out how to make them, they probably wouldn't sell anyway.***

Meta's latest absurd claim is that it will use its holographic "expertise" to improve augmented reality (AR) eyewear. But holography for AR is a commoditized and widely available technology, already incorporated in AR devices by large (and competent) technology companies like Cisco and Microsoft, while Facebook is already knee-deep into developing the next generation of holographic AR. It's laughable to expect that Meta Materials will be able to develop any AR technology of value when it can't even master basic holography to compete with niche sunglasses manufacturers.

Meta's med-tech segment is a sham

... Digging into the MediWise story revealed a familiar pattern of smoke and mirrors that Meta exhibited in its other segments, though with the added bonus of a questionable set of related party transactions.

MediWise was founded in 2010 by Meta's CEO, George Palikaras. ...

* * *

But glucoWISE didn't exist. In fact, ***though glucoWISE remains the centerpiece of Meta's "Wireless Sensing" technology, it still doesn't exist. And it never will.*** John L. Smith, an accomplished research scientist and medtech executive has, for the last 15 years, updated his synopsis of the quest to invent a non-invasive glucose monitor. Smith documents close to a dozen different proposed modalities and dozens of different companies' attempts. While Smith is agnostic as to whether such a feat is possible, his research makes it clear that it's never been done and, as of the present time, there's no sign that anyone is even close to the achievement. glucoWISE is actually just a bit player in the long history of exaggerated claims of having developed a non-invasive glucose monitor. Smith recounts how MediWise originally said they expected to begin taking "pre-orders" for glucoWISE in late 2016, but of course nothing ever came of that. Smith shows how this is a common pattern in the field, as these sorts of announcements by small companies have "perennially...been premature and meant to generate hype."

* * *

This past July, Meta announced that it "completed a UK-funded project towards developing non-invasive glucose sensing system." In the first paragraph of the press release, Meta proclaimed that it completed a project to "develop a non-

invasive glucose sensing prototype, which combined radio wave and optical sensors to improve accuracy in predicting glucose level changes.” Only later on does it become a bit clearer that the “improved accuracy” is not compared to traditional glucose monitoring but to glucose monitoring using just one of the two sensor methodologies used in the project.

The press release also depicts computer-generated pictures of the monitoring system – which doesn’t actually exist – for promotional purposes [image omitted]. Most laughably, the underlying scientific study to which the press release links indicates that the project basically just tested whether some lab-rigged sensors can detect changes in the concentrations of glucose in solutions composed of only glucose and water, and using concentrations that ranged 2-50x normal blood-glucose levels. And even then, the sensors weren’t very accurate. The audacity of using measurements of glucose in *water* to suggest progress in measuring *blood glucose through the skin barrier* is hard to comprehend. ***The proclamations are so misleading that they should deem suspect almost any “scientific” claim that Meta makes.***

* * *

While “wireless sensing” may not seem like one of the more prominent parts of Meta Materials, we think that Palikaras’ track record here is reflective of the same general approach we described with holography: ***the products being promoted either don’t exist or are grossly overstated, the underlying scientific effort is a sham***, and all of it is enmeshed in a complicated series of financial transactions that seem more related to enriching management than developing any profitable business.

NanoWeb hasn’t progressed since 2014, Meta seems to have no intention of commercializing it having ceased licensing a key patent, and it’s obsolete anyway

Meta’s lithography segment is primarily composed of NanoWeb, a conductive TTF technology that it obtained when it acquired Rolith Incorporated in 2016.

* * *

... the overall conductive TTF sector has rapidly progressed while NanoWeb has laid dormant. At the current time, there is no NanoWeb spec sheet to be found, and Meta’s website says that NanoWeb transparent conductors are “coming soon!” As of March 2020, Meta stated that its “labs in Pleasanton, California can produce a meter long sample of NanoWeb for a variety of applications.” ***Those meter-long samples were the subject of the Rolith scientists’ 2014 paper referenced above, so it’s clear that not much has changed in the intervening 6 years.***

Most recently, Meta used \$72 million of the \$140 million in cash on its balance sheet to buy Nanotech, a Canadian penny-stock company that manufactures anti-counterfeit films that can be used with paper currency or luxury consumer goods. Meta has tried to claim that there are synergies between the lithography capabilities possessed by Nanotech and the lithography technology needed to

scale and commercialize Nanoweb. But we spoke with several of NanoWeb's founding scientists, none of whom have remained at Meta since the 2016 acquisition, and they explained that they're extremely familiar with Nanotech's rudimentary technology and that it would make no sense to even try to repurpose any of Nanotech's manufacturing methods for the purpose of commercializing NanoWeb. Meta's pronouncements conflating the two production processes are indicative of Meta's management team either misleading investors or having no idea about what's involved in commercializing NanoWeb and manufacturing it at scale.

Even if Meta wanted to commercialize NanoWeb, and knew how to do it, one notable obstacle laying in its path relates to intellectual property. ***In late 2012, Rolith licensed a critical patterning method patent from the University of Michigan that was meant to be used in its lithography process.*** We discussed this with members of Jay Guo's lab, and they told us that when they inquired with the university's office that arranges IP licenses, ***they were told that Meta stopped paying for the license "years ago."*** The fact pattern – zero development of NanoWeb, acquisition that has nothing to do with NanoWeb, and ***cessation of a critical patent license*** – leads us to believe that ***Meta's management has no intention of ever commercializing NanoWeb at all***, and is using the same promotional playbook it's used in the rest of its business since 2012. It's no wonder Rolith's key founding scientists resigned from Meta in 2018.

(Emphasis added.)

34. On this news, Meta's shares fell 5.8% to close at \$2.91 per share on December 14, 2021, further damaging investors

35. As a result of Defendants' wrongful acts and omissions, and the decline in the market value of the Company's securities, Plaintiff and other Class members have suffered significant losses and damages.

PLAINTIFF'S CLASS ACTION ALLEGATIONS

36. Plaintiff brings this action as a class action pursuant to Federal Rule of Civil Procedure 23(a) and (b)(3) on behalf of a Class, consisting of all those who purchased or otherwise acquired the publicly traded securities of the Company during the Class Period (the "Class") and were damaged upon the revelation of the alleged corrective disclosure. Excluded from the Class are Defendants herein, the officers and directors of the Company, at all relevant

times, members of their immediate families and their legal representatives, heirs, successors or assigns and any entity in which Defendants have or had a controlling interest.

37. The members of the Class are so numerous that joinder of all members is impracticable. Throughout the Class Period, the Company's securities were actively traded on the NASDAQ. While the exact number of Class members is unknown to Plaintiff at this time and can be ascertained only through appropriate discovery, Plaintiff believes that there are hundreds or thousands of members in the proposed Class. Record owners and other members of the Class may be identified from records maintained by the Company or its transfer agent and may be notified of the pendency of this action by mail, using the form of notice similar to that customarily used in securities class actions.

38. Plaintiff's claims are typical of the claims of the members of the Class as all members of the Class are similarly affected by Defendants' wrongful conduct in violation of federal law that is complained of herein.

39. Plaintiff will fairly and adequately protect the interests of the members of the Class and has retained counsel competent and experienced in class and securities litigation. Plaintiff has no interests antagonistic to or in conflict with those of the Class.

40. Common questions of law and fact exist as to all members of the Class and predominate over any questions solely affecting individual members of the Class. Among the questions of law and fact common to the Class are:

- (a) whether Defendants' acts as alleged violated the federal securities laws;
- (b) whether Defendants' statements to the investing public during the Class Period misrepresented material facts about the financial condition, business, operations, and management of the Company;

- (c) whether Defendants' statements to the investing public during the Class Period omitted material facts necessary to make the statements made, in light of the circumstances under which they were made, not misleading;
- (d) whether the Individual Defendants caused the Company to issue false and misleading SEC filings and public statements during the Class Period;
- (e) whether Defendants acted knowingly or recklessly in issuing false and misleading SEC filings and public statements during the Class Period;
- (f) whether the prices of the Company's securities during the Class Period were artificially inflated because of the Defendants' conduct complained of herein; and
- (g) whether the members of the Class have sustained damages and, if so, what is the proper measure of damages.

41. A class action is superior to all other available methods for the fair and efficient adjudication of this controversy since joinder of all members is impracticable. Furthermore, as the damages suffered by individual Class members may be relatively small, the expense and burden of individual litigation make it impossible for members of the Class to individually redress the wrongs done to them. There will be no difficulty in the management of this action as a class action.

42. Plaintiff will rely, in part, upon the presumption of reliance established by the fraud-on-the-market doctrine in that:

- (a) Defendants made public misrepresentations or failed to disclose material facts during the Class Period;
- (b) the omissions and misrepresentations were material;
- (c) the Company's securities are traded in efficient markets;

- (d) the Company's securities were liquid and traded with moderate to heavy volume during the Class Period;
- (e) the Company traded on the NASDAQ, and was covered by market analysts;
- (f) the misrepresentations and omissions alleged would tend to induce a reasonable investor to misjudge the value of the Company's securities;
- (g) Plaintiff and members of the Class purchased and/or sold the Company's securities between the time the Defendants failed to disclose or misrepresented material facts and the time the true facts were disclosed, without knowledge of the omitted or misrepresented facts; and
- (h) Unexpected material news about the Company was rapidly reflected in and incorporated into the Company's stock price during the Class Period.

43. Based upon the foregoing, Plaintiff and the members of the Class are entitled to a presumption of reliance upon the integrity of the market.

44. Alternatively, Plaintiff and the members of the Class are entitled to the presumption of reliance established by the Supreme Court in *Affiliated Ute Citizens of the State of Utah v. United States*, 406 U.S. 128, 92 S. Ct. 2430 (1972), as Defendants omitted material information in their Class Period statements in violation of a duty to disclose such information, as detailed above.

COUNT I

Violation of Section 10(b) of The Exchange Act and Rule 10b-5 Against All Defendants

45. Plaintiff repeats and realleges each and every allegation contained above as if fully set forth herein.

46. This Count is asserted against the Defendants and is based upon Section 10(b) of the Exchange Act, 15 U.S.C. § 78j(b), and Rule 10b-5 promulgated thereunder by the SEC.

47. During the Class Period, the Defendants, individually and in concert, directly or indirectly, disseminated or approved the false statements specified above, which they knew or deliberately disregarded were misleading in that they contained misrepresentations and failed to disclose material facts necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading.

48. The Defendants violated §10(b) of the 1934 Act and Rule 10b-5 in that they: employed devices, schemes and artifices to defraud; made untrue statements of material facts or omitted to state material facts necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading; and/or engaged in acts, practices and a course of business that operated as a fraud or deceit upon plaintiff and others similarly situated in connection with their purchases of the Company's securities during the Class Period.

49. The Defendants acted with scienter in that they knew that the public documents and statements issued or disseminated in the name of the Company were materially false and misleading; knew that such statements or documents would be issued or disseminated to the investing public; and knowingly and substantially participated, or acquiesced in the issuance or dissemination of such statements or documents as primary violations of the securities laws. These defendants by virtue of their receipt of information reflecting the true facts of the Company, their control over, and/or receipt and/or modification of the Company's allegedly materially misleading statements, and/or their associations with the Company which made them privy to confidential proprietary information concerning the Company, participated in the fraudulent scheme alleged herein.

50. Individual Defendants, who are a senior officers and directors of the Company, had actual knowledge of the material omissions and/or the falsity of the material statements set forth above, and intended to deceive Plaintiff and the other members of the Class, or, in the alternative, acted with reckless disregard for the truth when they failed to ascertain and disclose the true facts in the statements made by them or other personnel of the Company to members of the investing public, including Plaintiff and the Class.

51. As a result of the foregoing, the market price of the Company's securities was artificially inflated during the Class Period. In ignorance of the falsity of the Defendants' statements, Plaintiff and the other members of the Class relied on the statements described above and/or the integrity of the market price of the Company's securities during the Class Period in purchasing the Company's securities at prices that were artificially inflated as a result of the Defendants' false and misleading statements.

52. Had Plaintiff and the other members of the Class been aware that the market price of the Company's securities had been artificially and falsely inflated by the Defendants' misleading statements and by the material adverse information which the Defendants did not disclose, they would not have purchased the Company's securities at the artificially inflated prices that they did, or at all.

53. As a result of the wrongful conduct alleged herein, Plaintiff and other members of the Class have suffered damages in an amount to be established at trial.

54. By reason of the foregoing, the Defendants have violated Section 10(b) of the 1934 Act and Rule 10b-5 promulgated thereunder and are liable to the Plaintiff and the other members of the Class for substantial damages which they suffered in connection with their purchases of the Company's securities during the Class Period.

COUNT II

Violation of Section 20(a) of The Exchange Act Against The Individual Defendants

55. Plaintiff repeats and realleges each and every allegation contained in the foregoing paragraphs as if fully set forth herein.

56. During the Class Period, the Individual Defendants participated in the operation and management of the Company, and conducted and participated, directly and indirectly, in the conduct of the Company's business affairs. Because of their senior positions, they knew the adverse non-public information regarding the Company's business practices.

57. As officers and directors of a publicly owned company, the Individual Defendants had a duty to disseminate accurate and truthful information with respect to the Company's financial condition and results of operations, and to correct promptly any public statements issued by the Company which had become materially false or misleading.

58. Because of their positions of control and authority as senior officers, the Individual Defendants were able to, and did, control the contents of the various reports, press releases and public filings which the Company disseminated in the marketplace during the Class Period. Throughout the Class Period, the Individual Defendants exercised their power and authority to cause the Company to engage in the wrongful acts complained of herein. The Individual Defendants, therefore, were each a "controlling person[]" of the Company within the meaning of Section 20(a) of the Exchange Act. In this capacity, they participated in the unlawful conduct alleged which artificially inflated the market price of the Company's securities.

59. The Individual Defendants, therefore, acted as controlling persons of the Company. By reason of their senior management positions and being a director of the Company, the Individual Defendants had the power to direct the actions of, and exercised the same to cause,

the Company to engage in the unlawful acts and conduct complained of herein. The Individual Defendants exercised control over the general operations of the Company and possessed the power to control the specific activities which comprise the primary violations about which Plaintiff and the other members of the Class complain.

60. By reason of the above conduct, the Individual Defendants are liable pursuant to Section 20(a) of the Exchange Act for the violations committed by the Company.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff demands judgment against Defendants as follows:

A. Determining that the instant action may be maintained as a class action under Rule 23 of the Federal Rules of Civil Procedure, and certifying Plaintiff as the Class representative;

B. Requiring Defendants to pay damages sustained by Plaintiff and the Class by reason of the acts and transactions alleged herein;

C. Awarding Plaintiff and the other members of the Class prejudgment and post-judgment interest, as well as their reasonable attorneys' fees, expert fees, and other costs; and

D. Awarding such other and further relief as this Court may deem just and proper.

DEMAND FOR TRIAL BY JURY

Plaintiff hereby demands a trial by jury.

Dated: _____

Respectfully submitted,

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