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Zacks Small-Cap Research

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Zecotek Photonics (V.ZMS)

V.ZMS: European PET/CT OEM Supply Contract Could Be Worth $10M Annually

We model revenue to grow from $2.3M in 2018 to about $45M in 2025. Our DCF model, which uses an 8% discount rate and 2% terminal growth rate, values the shares at approximately $1.00.

Current Price (01/03/2018)	$0.28
Valuation	**$1.00**

OUTLOOK

"a well-established life sciences OEM based in Europe has selected its patented Lutetium Fine Silicate (LFS) scintillation crystals for a new line of high resolution positron emission tomography (PET)/ computed tomography (CT) medical imaging devices." While it is unclear what exactly needs to happen before ZMS would begin shipping meaningful LFS quantities to this unnamed OEM, the late-October 2017 press release indicates that discussions about a long-term supply agreement are ongoing, which could be worth in excess of $10M annually to Zecotek. We have no insight as to the identity of this European OEM although we think it would not be unreasonable to speculate that it could be Philips Healthcare given that the two companies settled a patent infringement lawsuit in December 2014. While terms of the settlement remain private, we have long speculated that it might include a source/supply agreement of ZMS's crystals to Philips for future PET scanners. If Philips, which is one of the leading PET scanner manufacturers in the world, is indeed the counterparty to this supply agreement, this could result in a major source of revenue for Zecotek. We hope Zecotek is soon allowed to reveal the name of the OEM customer and certainly hope that meaningful LFS crystals sales result from this.

SUMMARY DATA

52-Week High	**$0.35**
52-Week Low	**$0.20**
One-Year Return (%)	**0**
Beta	**1.26**
Average Daily Volume (sh)	**430,574**
Shares Outstanding (mil)	**143**
Market Capitalization ($mil)	**40**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**N/A**
Insider Ownership (%)	**N/A**
Annual Cash Dividend	**N/A**
Dividend Yield (%)	**N/A**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2018 Estimate	**N/A**
P/E using 2019 Estimate	**N/A**
Zacks Rank	**N/A**

Risk Level	**N/A**
Type of Stock	**Small-Growth**
Industry	**Med Products**

ZACKS ESTIMATES

Revenue
(in '000 of $)

	Q1 (Oct)	Q2 (Jan)	Q3 (Apr)	Q4 (Jul)	Year (Jul)
2017	208 A	6 A	212 A	42 A	467 A
2018	104 E	260 E	710 E	1249 E	2323 E
2019					6374 E
2020					14818 E

Earnings per Share

	Q1 (Oct)	Q2 (Jan)	Q3 (Apr)	Q4 (Jul)	Year (Jul)
2017	-$0.01 A	$0.00 A	-$0.01 A	-$0.01 A	-$0.02 E
2018	-$0.01 E	-$0.01 E	-$0.01 E	-$0.01 E	-$0.03 E
2019					-$0.02 E
2020					-$0.01 E

Zacks Projected EPS Growth Rate - Next 5 Years % **N/A**

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Fiscal Q4 2017, Operational Update….

Zecotek reported financial results for their fiscal 2017 fourth quarter and full year ending July 31, 2017. While **revenue continues to disappoint**, we remain optimistic that the company will soon begin to generate additional sales of their LFS crystals and other (Imaging-segment) products given the recent headway that they have made in building their customer footprint, particularly as it relates to China and more recently, Europe. In addition, slightly more than one-half of the $2.5M Hamamatsu order remains outstanding. Zecotek also made substantive progress towards monetizing development work from their Display business during calendar 2017, most notably of which included partnering with two auto manufacturers for use of the company's 3D display technology for use in heads-up display functionality.

Q4 and full-year revenue of $42k and $467k were down by 89% (from $363k) and 69% (from $1.49M) from the prior-year comparable periods. Approximately 77% of the revenue in fiscal 2017 relates to Hamamatsu.

As we have noted previously, we think the drawn-out process of recognizing the Hamamatsu-related deferred revenue (i.e. previous orders which Hamamatsu has yet to take possession of) relates mostly to dragging feet of Hamamatsu. But, ZMS has more recently made a much more determined effort to not rely so heavily on Hamamatsu for its ultimate success by spreading their wings and branching out other customer channels. These include an unnamed European PET OEM (Philips Healthcare?), two European auto manufacturers, EBO Optoelectronics, Chinese PET manufacturers, UC Davis, a U.S.-based medical neuroPET manufacturer and homeland security, among others. While we expect Hamamatsu to remain an important customer channel, LFS crystals orders from non-Hamamatsu customers is what we expect to be driving an eventual inflection in revenue. ZMS could also potentially generate initial revenue from its Display segment - which represents another possible incremental revenue driver.

And despite the significant decline in revenue in fiscal 2017, operating loss and cash burn have actually moderately improved as a result of tempered spend from cost-containment efforts. Operating loss was $4.9M in 2017, down from $5.2M in the prior year. Meanwhile, cash burn (i.e. cash used in operating activities, excluding changes in working capital) was $4.74M in 2017, almost $500k less than the $5.24M in cash used during 2016.

Cash balance was $862k at July 31st. Zecotek continues to successfully raise operating capital when needed and last week announced that they "arranged for a non-brokered private placement of 10,000,000 units of the Company at a price of $0.30 per unit for gross proceeds of $3,000,000." Units consist of one share of common and one warrant – the warrants have a $0.43 exercise price and expire in two years. The press release did not indicate when this financing is expected to close. And while most of the recent capital raises have been on the piecemeal side, we think larger and more attractively priced deals should come with additional substantive progress in expanding the customer base, and perhaps more importantly, in delivering initial larger-sized orders to some of the current customers (or even just announcement of formal contract terms and identification of some of the customers, such as the European PET OEM).

Operational Update: ***European PET OEM, Zecotek China Biz Development Director, U.S. LFS Order, Display Systems HUD Technology…***

There have been a number of noteworthy developments, on multiple fronts, over the last several months. While much of the recent operational progress relates to photonics in China, there has been forward movement in other areas as well including the recent announcement that a major European PET OEM selected the LFS crystals for a new line of PET/CT scanners and, as it relates to the company's Display Systems unit, a collaboration with (at least) two European auto manufacturers (including a joint-development agreement in July) in the development of next-generation heads-up display technology. And while we had not heard much in the way of U.S.-related business development activities lately, that changed when on August 16th ZMS announced that a (unnamed) U.S.-based manufacturer of a novel neuroPET scanner placed an order for the company's LFS crystals. Additional detail on ZMS' recent operational progress follows…

Perhaps the most exciting recent news was that "a well-established life sciences **OEM based in Europe has selected its patented Lutetium Fine Silicate (LFS) scintillation crystals for a new line of high resolution positron emission tomography (PET)/ computed tomography (CT) medical imaging devices**." While it is unclear what exactly needs to happen before ZMS would begin shipping meaningful LFS quantities to this unnamed OEM, the late-October 2017 press release indicates that discussions about a long-term supply agreement are ongoing, which could be worth in excess of $10M annually to Zecotek. We have no insight as to the identity of this European OEM although **we think it would not be unreasonable to speculate that it could**

be Philips Healthcare given that the two companies settled a patent infringement lawsuit in December 2014. As a reminder, Zecotek brought the lawsuit in February 2012 claiming that Saint-Gobain infringed on a Zecotek-owned patent covering their LFS scintillation crystals and accused Philips of using these crystals in their PET scanners. While terms of the settlement remain private, we have long speculated that it might include a source/supply agreement of ZMS's crystals to Philips for future PET scanners. If Philips, which is one of the leading PET scanner manufacturers in the world, is indeed the counterparty to this supply agreement, this could result in a major source of revenue for Zecotek. We hope Zecotek is soon allowed to reveal the name of the OEM customer and certainly hope that meaningful LFS crystals sales result from this.

Much of the other recent highlights on the operational front relate to **ZMS' focus on the Chinese market**, with the recently penned EBO Optoelectronics supply agreement already bearing fruit. In fact, Zecotek announced that over $1M in orders for their LFS crystals have been placed since May 2017. This includes purchase orders amounting to $1.2M for crystals that will be used in PET medical scanners as well as for radiation detection systems – ZMS noted in their July 4th press release that the majority of the order came from Shanghai EBO Optoelectronics.

This follows the late-May announcement that three "tier 1" PET OEMs had qualified the LFS crystals for use in their products and that one of these Chinese companies had placed a $100k order (also via EBO Optoelectronics). Relative to qualification of the crystals, ZMS's CEO commented that, "These three tier 1 OEMs have decided that the LFS crystal has all the economical and physical characteristics needed for their long-term production of PET medical scanners." Zecotek also recently noted that a quality control system had been established to provide for testing and standardization of their crystals – presumably to facilitate the qualification process as well as the supply channel.

As a reminder, in January 2017 Zecotek announced an agreement with Shanghai EBO Optoelectronics Company whereby **ZMS will supply the Shanghai-based company with "over $21M worth of scintillation crystals** over the next three years." The supply agreement will continue after the initial three-year term on a yearly basis. Per ZMS's press releases, EBO is the largest crystal array producer and supplier in China and has a client list which includes the top PET OEMs in the world. The duo are now working on a sales and marketing plan - which was enhanced with the recent hiring of a Business Development Director – discussed below. EBO will sell ZMS's crystals particularly to meet growing demand of the Chinese PET scanner market. The agreement further stipulates that EBO will be the exclusive distributor for the LFS crystals for the Chinese PET market and will only use LFS crystals in arrays for that application.

Crystals supplied to EBO will be used to meet the company's obligations under the previously announced MOU with a Chinese OEM PET manufacturer. As a reminder, that MOU (when executed) calls for supplying crystals/arrays for up to 200 PET scanners over the next five years. While there was no timetable offered on when this supply agreement is expected to ramp or when meaningful related revenue will begin to be generated, ZMS did note in their March 21, 2017 press release that the Chinese OEM had resumed purchasing LFS crystals in array form through EBO and that ZMS and EBO are working on a schedule to meet the Chinese OEM's production plan. It is unclear whether the aforementioned $1.2M in purchase orders relates to this particular PET OEM.

In order to further leverage expected demand from China Zecotek announced **in May 2017 that they formed "Zecotek China"**, a wholly-owned subsidiary based in the Shanghai Free Trade Zone. In addition to meeting certain commerce conditions unique to China, including having a formal presence in that country, formation of the subsidiary is also expected to provide for greater efficiency in working with EBO Optoelectronics as well as offering certain tax benefits. ZMS made another important step as it relates to having a formal presence China (and China's photonics industry) with the **hiring of hiring of Thomas Lau as Business Development Director for Zecotek China**. Per ZMS' press release, Mr. Lau is a native of China and has more than 20 years of experience in that country's photonics industry in business development and executive roles. He will work closely with EBO and be responsible for "managing an aggressive expansion strategy" for the company's LFS crystals and other photonics products for both medical and non-medical applications.

As a reminder, while Zecotek's primary focus in China has always been the PET OEM market, the company indicated shortly following the formation of Zecotek China that they had already **received significant interest from non-medical industries and government organizations** in the country. In June 2017 ZMS announced that they received a notice of allowance in China for its advanced formulation of its patented LFS crystals. Then in November the company announced that the Chinese patent office issued a certificate of allowance for its solid-state Micro-channel Avalanche Photodiode/Transistor (MAPD/T) photo detector. With the additional IP locked down, Zecotek noted that they begin commercial production in "early 2018".

Zecotek has previously indicated that they believe their proprietary **MAPD/T photo detectors could be revolutionary** in terms of replacing conventional photo multiplier tubes (see our discussion below). And while commercial introduction of the initial MAPD/T products has been drawn out longer than anticipated, we are hopeful that progress on the patent front means that they are one meaningful step closer to finally getting the product on the market. While eventual launch should be a significant milestone, even more substantive would be incorporation of their photo detectors in production of commercial OEM PET scanners. This will be something we will be eager to hear future updates about.

Zecotek's quest to branch out to other applications apparently made further progress with the company announcing in May 2017 that they are now **working with a "radiation safety and homeland security OEM" to "jointly develop a commercial radiation detection unit"**. As a reminder, in 2016 Zecotek had noted that an OEM had ordered their crystals for testing in a large cargo screening device at land crossings as well as for screening applications for smaller items such as luggage. This recent agreement apparently resulted from the successful testing of the crystals for these applications. While potential revenue implications are not clear, ZMS noted at the time that they were looking to have an operational prototype completed within six months (~November 2017). The company did not provide an update on this with reporting of Q4 results, although we hope to hear more in the near future.

Another recent development relates to the company's **Display Systems** division. While Imaging Systems (i.e. related to the LFS crystals and MAPD/T photo detectors) has and will likely continue to represent the majority of the potential upside value of the company, the Display Systems business has shown growing promise as an additional value driver. Much of this promise relates to the 3D display program. It appears that at least some investors have taken notice based on the March 2017 announcement of a potential $10M financing (on a 'best-efforts' basis) in return for an equity stake in Zecotek Display Systems – there has not been a recent status update on this, however.

As a reminder, the Display Systems division has had several projects in late stages including development of a working prototype of a 32-inch 3D display which does not require the use of 3D glasses. The display is protected by both U.S. and Australian patents. It can simultaneously project high resolution 3D and 2D images on the same screen with separate views for multiple users. Zecotek has previously noted that they were in discussions with certain major electronics companies to co-develop an OLED/LED (organic light emitting diode) based, flat screen, glasses-free, true 3D HD television.

More recently, the Display Systems segment has been **working with automotive manufacturers in the design on novel heads-up display (HUD)** technologies. HUD projects an image (graphic below is an example with no relation to ZMS' technology) on, in front of or around the windshield, eliminating the need for the driver to remove his eyes from the road to check the speedometer, navigation and other information. In December 2016 ZMS announced that they were working with a major (unnamed) European automobile manufacturer to integrate their 3D display technology into a HUD and entertainment console. In March 2017 the company announced another European auto manufacturer expressed interest in their technology. Then, in July 2017 ZMS announced that they signed a joint-development agreement with a leading German auto manufacturer to develop a brand-specific, 3D HUD and entertainment console noting that they "signed a contract to develop the world's first 3D HUD system with a highly respected automobile manufacturer with a clear path to commercialization and widespread adoption". While Zecotek was shooting to have the initial prototype completed by 2017 year-end, they did not provide an update when they reported Q4 results. This is another program that we will be eager to hear updates about.

Generic Example of HUD (no relation to ZMS)



Zecotek notes that the auto manufacturers' interest in their technology relates to the fact that, unlike other HUD systems, their 3D display does not require eye tracking and allows for more views than traditional HUD technology. Drawbacks of eye tracking include additional costs and potentially lower reliability. Zecotek noted that the aforementioned proposed $10M equity financing of Display Systems (if consummated) will be used to complete integration of their 3D technology for automotive applications.

Equity Investments in Imaging and Display Segments (on best-efforts basis)…
Additional liquidity could materialize upon close of a recently announced agreement with Shanghai Creation Investment Management Company (SCI). In October '16 ZMS announced SCI was initially expected to invest $5M in return for an equity stake (10% maximum) in Zecotek Imaging Systems (i.e. division developing LFS crystals, MAPT and other imaging-related products and components). Zecotek's October 20, 2016 press release announcing the agreement noted that final valuation was contingent upon execution of the MOU with the Chinese PET OEM. As a reminder, terms of that agreement call for the MOU to convert into a contract upon installation of the first PET scanner incorporating Zecotek's LFS crystals in a hospital in Shanghai.

While Zecotek has yet to disclose whether the MOU has been executed, in mid-March 2017 they announced that the proposed $5M investment has since been increased to $15M. While it is unclear if the maximum equity stake remains at 10%, the implication is that that may still be the case as ZMS mentions that the increase in financing is due to improved valuation of the Imaging Systems division and growing demand for the LFS crystals by the Chinese PET OEM industry.

The March 2017 press release further mentions a (as we alluded to above) $10M financing for an equity stake (% was not disclosed) in Zecotek Display Systems – funds for which will be used to complete the integration of their 3D technology for automotive applications.

If and when finalized and closed (the financings are being done on a 'best-efforts' basis), Zecotek expects to use proceeds from the Imaging Systems investment towards building requisite operational infrastructure, including adding China-based representatives, and to facilitate execution of the Chinese PET OEM contract, which calls for as many as 200 systems to be built with ZMS's crystals/arrays over the next five years.

Zecotek also noted that SCI ("one of the most active investment funds and IPO consulting companies in China"), upon consummation of the agreement and initial investment, will be directly involved in initiating operations in China. And finally, SCI is also expected to be involved in helping ZMS apply for grant funding from the local Chinese government authority. ZMS expects to seek up to $3M to be used in establishing a manufacturing facility to grow LFS crystals – providing the benefits of a local supply to the Chinese OEM as well as additional capacity to BOET, ZMS's current supplier.

Interestingly, SCI highlights China Aotai Medical on its website as one of its success stories (link… http://bit.ly/2gZ3DnA and use Google Translate). Chengdu, China based Aotai is billed as designing and developing "the world's most advanced MRI systems". As such, it appears, SCI has direct experience with working with Chinese-based advanced imaging organizations which may suggest they could be an ideal partner for ZMS and their China PET programs.

Other Operational Updates: ZMS has made operational progress on several other fronts as well…

- **Hamamatsu:** As of the end of fiscal 2017 (April 2017) $1.38M remained yet to be booked under the initial Hamamatsu supply agreements – down from $1.74M at the close of fiscal 2016. ZMS notes in their most recent regulatory filings that they continue to ship LFS crystals to Hamamatsu on a monthly basis for integration into PET-related IDM modules (single assembly containing crystals, MAPD/MAPT photo detectors and readout system). Apparently at least some of the delay in recognizing more revenue from Hamamatsu has been that the end customers (i.e. PET OEMs) are still in process of finalizing the required specifications for their specific modules which dictates how the LFS crystals will be cut. ZMS notes that Hamamatsu is working with their PET OEM customers in an effort to expedite the process. As such, it may be that Hamamatsu related revenue will soon be more substantial. Nonetheless, ZMS's efforts in broadening the scope of its customer base is becoming more apparent with a greater amount of revenue recently coming from other sources. So, while we expect Hamamatsu to remain an important customer channel, LFS crystals orders from non-Hamamatsu customers is what we expect to be driving an eventual inflection in revenue.

- **Israel Distribution and Related Revenue**: In September 2016 the company announced that it penned a distribution agreement for its imaging products (including the LFS crystals, MAPD/T photo detectors and more) in that country with RAM N.S. Technologies. The P.R. noted that RAM would begin marketing ZMS' imaging products immediately and that their customer base includes "several world-renowned PET integrators operating within Israel." Zecotek noted at the time that they expected this relationship to result in revenue "in the very near future."

- **NeuroPET**: ZMS has had an ongoing relationship with the University of Washington including a collaboration involving designs for a PET/MRI scanner using Zecotek's MAPD's. More recently they have been working together on "NeuroPET", a project is focused on development of a high-resolution PET scanner for use in neurological diseases such as Alzheimer's.

  Then in August 2017 Zecotek announced that a **U.S.-based manufacturer of a novel neuroPET scanner placed an order for the company's LFS crystals.** The name of the customer was not disclosed, nor was the size or any other details of the order (such as, whether this is expected to be an ongoing relationship). As such, we cannot assume that this will provide much in the way of revenue (although such a development may be a possibility). But, we do think it is newsworthy given that neuroPET scanners are still relatively novel technology and, given the recent increased interest in and advances towards neurological disease diagnosis and treatment (in areas such as Alzheimer's, CTE and Parkinson's, among others), it provides at least some level of additional validation for the LFS crystals given that they are at least being considered for this type of next-gen (potentially high-demand) technology.

- **Next-Gen Crystals and MAPT Photo Detectors**: Zecotek has previously announced that initial samples of their new LFS-8 crystals outperformed the legacy LFS-3 crystals in testing, including a doubling of speed. The company also noted that they made substantial progress on development of their new generation of photo MAPT detectors, which have demonstrated significant leaps in performance over legacy technology. The company had recently noted that they had expected that full production would commence in the near-term – although this schedule may need to coincide and be coordinated with PET OEM end-customers (via Hamamatsu, as referenced above, or as it relates to China, with PET OEM's in that country). We note that while ZMS's LFS crystals have been the headline-grabber given their superior performance to all other scintillation crystals as well as being the most near-term revenue source for the company, MAPT could eventually be a more significant product for the company. Zecotek's MAPT (micro-pixel avalanche photo transistors) has shown to have much faster response time and higher resolution to alternative technologies. Zecotek's MAPD/MAPT have been developed to replace photo multiplier tubes, which remain the most commonly used photo detectors in PET scanners and gamma cameras. Photo multiplier tubes are very sensitive detectors of light with high gain, low noise and very fast response, which has made them ideal for applications such as in advanced medical imaging cameras. But they have some drawbacks, including being relatively large, expensive, and require very high voltage. As such PET manufacturers could be highly receptive to a more practical alternative and could offer the next wave of growth for ZMS. Encouraging is the recent progress with locking down additional IP in China related to the MADP/T technology.

- **CERN**: In April 2016 ZMS announced that the European Organization for Nuclear Physics (CERN) ordered LFS crystals for their PET program.

- **UC Davis, PET/MR Applications**: In September 2015 researchers at the University of California, Davis, following testing of the LFS crystals for PET applications commented that, "What we find most attractive about Zecotek's LFS crystals is the fast decay time. UC Davis has multiple high-end projects ongoing using

the LFS crystals which includes potentially incorporating them into high performance PET detector designs as well as possible collaboration with ZMS on crystal arrays. The UC Davis team is lead by Dr. Simon Cherry, who is extensively published in molecular imaging and a renowned expert in the field. So, validation of the LFS crystals by Dr. Cherry and his team is a meaningful vote of confidence.

In July 2016 ZMS announced that UC Davis ordered additional LFS crystals for a novel PET/MR module. Potentially noteworthy is that in October 2015 UC Davis was awarded a five-year, $15.5M grant by the National Institutes of Health/National Cancer Institute to fund their EXPLORER project. The goal of EXPLORER, being co-led by Dr. Cherry, is to (per the EXPLORER website .http://explorer.ucdavis.edu/) design, develop and construct the world s highest sensitivity PET scanner. This scanner is projected to have a sensitivity that is 40 times higher than current PET scanners and have the ability to scan the entire body at once. And while we still are not connecting any dots between the LFS crystals and the EXPLORER project (although we are not ruling out a potential connection), at the very least we think the fact the Dr. Cherry is leading this project speaks to his credibility as an expert in the field. And the fact that an expert of his status is impressed with the performance of the LFS crystals and recently placed another order is of significance.

- **Other High-Tech Institutions:** In addition to UC Davis, ZMS noted in a May 2017 press release that three other prestigious high-tech institutions have ordered their LFS crystals for early-stage medical as well as non-medical (i.e. energy physics experiments) applications.
- **Silo and Container Measurement**: In mid-August 2016 Zecotek announced "a world leader in the area of level, switching and pressure measurement for the process industry" placed an order for LFS crystals "for a leading edge approach to the measurement of silos and large containers. The device is able to detect the level of liquids, pastes, powders and bulk solids in silos and large containers and is to be widely deployed in industries such as oil and gas, chemical, and waste management."

Outlook

Revenue has been challenging to accurately forecast. While we think revenue may continue to be variable over the near-term, the recent customer engagements, continued broadening of the customer base and what we think is a more deliberate spreading of ZMS's wings towards opportunities outside of Hamamatsu has us encouraged that sales will trend towards more consistency. More importantly, however, will be if ZMS can steepen the revenue curve. As the customer base grows, so do the potential shots on goal and opportunities to grow revenue.

The news in late October 2017 that a major European PET/CT OEM adopted the company's LFS crystals for a new line of scanners was particularly exciting for a couple of reasons. First, Europe is a more seamless market to work in as compared to China, which is the other territory where we think Zecotek has near-term revenue-inflection potential. Secondly, we think European PET OEM could be Philips – and if that is the case, the supply agreement could be related to the terms of the lawsuit settlement – which would suggest binding contract terms. And in addition, ZMS believes this relationship could be worth in excess of $10M in revenue per year to the company. While our model now includes assumed contribution from this relationship, we will not model anywhere near $10M annually unless and until there is more substantive information about the binding nature of the agreement or until there is a reasonable history of meaningful sales to this channel. This is now the relationship which we are most eager to hear updates about.

The Chinese PET OEM relationship could be home run but we think it is prudent to forego modeling any significant related contribution until, at least, the MOU turns into a formal contract (if it ever does). And if it reaches that point and with additional clarity on potential scheduling of follow-on orders, there may be an opportunity to make an informed estimate related to potential future sales through this channel.

The agreement with SCI, including an initial equity investment as well as having an active role in establishing ZMS's commercialization (and additional manufacturing) infrastructure in China, is also encouraging, although is tempered somewhat by the lack of recent updates. This also may suggest that Zecotek's Chinese-related operations, and specifically as it relates to the PET OEM agreement, could ramp fairly rapidly if and when these agreements are fully triggered (i.e. the initial installation happens).

Nonetheless, we view the establishment of Zecotek China and initial orders from EBO Optoelectronics as substantive progress towards entry into the Chinese market. The recent hiring of an experienced (and native) director of business development is also encouraging as it relates to the potential of this segment to gain traction. As such and given that we have yet to incorporate meaningful revenue related to these relationships, our model

could prove highly conservative. We will be eagerly awaiting updates on progress of towards consummation of the MOU (including refurbishment of the scanning areas at the hospitals which has been implicated as the bottleneck) as well as additional orders from EBO related to the $21M supply agreement.

The recent stream of news related to progress towards tapping the Chinese market has been heartening as it relates to the potential for the revenue curve to significantly steepen, despite the fact that it has yet to amount to much in the way of sales to-date. We think at least a substantive portion of the delay in recognition of meaningful revenue from this country is policy/regulation-related and as such, are hopeful that clearing of administrative hurdles are only time dependent and will be a gating factor that will soon resolve and result in much more significant revenue.

Near-term could see recognition of more of the outstanding Hamamatsu orders, some of which may be dependent on finalization of module specifications from PET OEM customers. And ZMS could see additional interest for their LFS crystals from manufacturers of small and next-gen Time-of-Flight PET scanners as well as in applications such as pre-clinical pharmaceutical research for drug development. The recent LFS order from a U.S. neuroPET manufacturer is a clear positive, although time will tell if this relationship bears significant fruit. Israel, via ZMS's distribution agreement with RAM N.S. Technologies, adds another potential near-term shot on goal. And while a formal supply relationship with Philips has yet to be penned, that possibility remains open and, if it happens, could be a needle-mover for ZMS.

And other recent revenue opportunities could be in homeland security, radiation detection and (as it relates to the Display segment) in 3D HUD. The agreements to develop a radiation detection unit with a radiation safety and homeland security OEM as well as the partnerships major European auto manufacturers in the development of a 3D HUD system sounds encouraging – although, as noted, the potential revenue opportunities related to both of these is currently unclear.

We model fiscal 2018 revenue of $2.3M, with much of our estimate weighted towards the second half of the year based on assumed contribution from the European PET OEM. We look for revenue to grow to $6.4M in 2019. But, as noted, we have not incorporated contribution related to supplying crystals to the China PET OEM contract and are modeling only a fraction of the (indicated) $10M+ annual sales potential related to the European PET OEM. If the China contract is triggered and/or European PET OEM crystals sales ramp faster than our assumptions, our model will likely prove conservative and possibly highly conservative, particularly in the out-years. Our model is subject to updating. Model revisions could also affect our price target. As it is now, our DCF-generated price target remains at $1.00/share.

FINANCIAL MODEL

Zecotek Photonics Inc.

	2017 A	Q1 E	Q2 E	Q3 E	Q4 E	2018 E	2019 E	2020 E
Total Revenues	$466.9	$104.4	$259.6	$709.9	$1,248.9	$2,322.8	$6,374.4	$14,817.6
YOY Growth	-68.6%	-49.7%	4205.3%	235.4%	2904.1%	397.5%	#DIV/0!	132.5%
Cost of Goods Sold	$406.4	$91.9	$223.2	$553.7	$936.7	$1,805.5	$3,697.1	$7,112.5
Gross Income	$60.5	$12.5	$36.3	$156.2	$312.2	$517.3	$2,677.2	$7,705.2
Gross Margin	13.0%	12.0%	14.0%	22.0%	25.0%	22.3%	42.0%	52.0%
SG&A	$3,628.5	$875.6	$1,104.0	$838.0	$941.0	$3,758.6	$4,474.8	$7,231.0
% SG&A	777.2%	838.5%	425.3%	118.0%	75.3%	161.8%	70.2%	48.8%
R&D	$1,283.9	$351.0	$342.0	$387.0	$412.0	$1,492.0	$1,957.0	$1,802.0
% R&D	275.0%	336.1%	131.8%	54.5%	33.0%	64.2%	30.7%	12.2%
Operating Income	($4,851.9)	($1,214.1)	($1,409.7)	($1,068.8)	($1,040.8)	($4,733.3)	($3,754.6)	($1,327.8)
Operating Margin	-1039.2%	-1162.7%	-543.1%	-150.6%	-83.3%	-203.8%	-58.9%	-9.0%
Total Other Income (Expense)	$1,828.5	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Pre-Tax Income	($3,023.4)	($1,214.1)	($1,409.7)	($1,068.8)	($1,040.8)	($4,733.3)	($3,754.6)	($1,327.8)
Tax expense (benefit)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Tax Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Net Income	($3,023.4)	($1,214.1)	($1,409.7)	($1,068.8)	($1,040.8)	($4,733.3)	($3,754.6)	($1,327.8)
YOY Growth	-43.4%	13.2%	-494.2%	-25.1%	18.2%	-100.0%	#DIV/0!	-64.6%
Net Margin	-647.6%	-1162.7%	-543.1%	-150.6%	-83.3%	-203.8%	-58.9%	-9.0%
EPS	($0.02)	($0.01)	($0.01)	($0.01)	($0.01)	($0.03)	($0.02)	($0.01)
YOY Growth	-49.3%	1.5%	-449.2%	-35.2%	4.0%	38.0%	-98.8%	-65.7%
Diluted Shares O/S	131,092	141,700	145,000	153,000	155,000	148,675	159,000	164,000

Brian Marckx, CFA

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STOCK CHART



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