Zacks Small-Cap Research

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Zecotek Photonics (V.ZMS)

V.ZMS: SCI Agreement Aimed At Building Chinese Operations

We model revenue to grow from $452k in 2015 to almost $50M in 2025. Our DCF model, which uses an 8% discount rate and 2% terminal growth rate, values the shares at approximately $1.50.

Current Price (12/13/2016)	$0.25
Valuation	**$1.50**

OUTLOOK

Zecotek is the only company in the world to own all key elements for a high performance PET scanner. Technology is protected by large patent portfolio. ZMS.V is well positioned to capitalize on growth of PET market. Their LFS scintillation crystals look to be superior to any other crystals on the market and with PET scanner performance tied to performance of crystals, demand for LFS crystals could be substantial. Hamamatsu relationship holds significant potential but ZMS recently exploiting other opportunities as well. Recent relationship with Chinese PET OEM could be a home run, but we think still too early to make any predictions. ZMS seeing interest from U.S. PET manufacturers and for applications in drug research as well. More recent opportunities in homeland and border security. Formal supply relationship with U.S. PET OEM 'major' Philips remains a possibility.

SUMMARY DATA

52-Week High	**$0.36**
52-Week Low	**$0.23**
One-Year Return (%)	**-24**
Beta	**0.78**
Average Daily Volume (sh)	**178,584**
Shares Outstanding (mil)	**132**
Market Capitalization ($mil)	**33**
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 2017 Estimate	**N/A**
P/E using 2018 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)
2016	150 A	697 A	278 A	363 A	1488 A
2017	504 E	603 E	685 E	781 E	2574 E
2018					5370 E
2019					10311 E

Earnings per Share

	Q1 (Oct)	Q2 (Jan)	Q3 (Apr)	Q4 (Jul)	Year (Jul)
2016	-$0.01 A	-$0.02 A	-$0.00 A	-$0.01 A	-$0.05 A
2017	-$0.01 E	-$0.01 E	-$0.01 E	-$0.01 E	-$0.04 E
2018					-$0.03 E
2019					-$0.02 E

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

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Fiscal Q4 2016, Operational Update….

Zecotek reported financial results for their fiscal 2016 fourth quarter ending July 31st. Revenue was $363k, largely inline with the anticipated $389k which the company preannounced in early October, and representing a 74% increase from the $208k generated in Q4 2015. For the 2016 full year, revenue was $1.5M, up 229% from $452k in 2015. Sales in Asia continue to account for almost all of the company's revenue, representing 97% of Zecotek's total revenue in both fiscal 2015 and 2016.

While the rate of revenue growth has trailed our recent expectations, we remain encouraged that it does continue to show a (mostly) regular pattern of trending upwards. Also noteworthy, is that it appears all of the $363k in revenue in Q4 was from non-Hamamatsu sources - we view this as positive as it indicates that Zecotek is successfully broadening its scope of revenue-generating customers and lessening reliance on what had only recently been viewed as their single most-important account.

Operating expenses were also much improved compared to the prior year. Total OpEx in fiscal 2016 of $5.5M fell by almost 25% from $7.3M in 2015. And while much of the difference is related to lower legal expenses from conclusion of the Saint-Gobain / Philips lawsuit, management's efficiency efforts, including prioritization of development and commercialization programs, have also contributed to expense management.

Cash used in operating activities was $834k and $5.3M ($1.4M and $5.2M ex-changes in working capital) in Q4 and the full year 2016, respectively, compared to $921k and $4.2M ($1.3M and $6.8M ex-changes in working capital) in the comparable periods in 2015. Cash balance was $241k at 2016 year-end (July 31, 2016) but Zecotek raised an additional $1.386M (gross) subsequent to the close of fiscal 2016 via the sale of 4.62M common shares @ $0.30/share (plus a similar number of warrants with $0.43 strike).

ZIM Equity Investment: Funding and Operating Expertise…
Additional liquidity could materialize upon close of a recently announced agreement with Shanghai Creation Investment Management Company (SCI) to initially 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 20th press release announcing the agreement notes that final valuation is contingent upon execution of the memorandum of understanding (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.

If and when finalized and closed, Zecotek expects to use proceeds from SCI's investment towards building requisite operational infrastructure, including adding China-based representatives, to facilitate execution of the Chinese PET OEM contract, which calls for as many as 200 systems to be built with ZMS's crystals over the next five years.

Zecotek also notes 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 that SCI's total investment could grow from the initial $5M financing over time. 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 fronts, increasing their shots on goal and opportunity to steepen their revenue curve.

- **Hamamatsu:** As of the close of fiscal 2016 $1.74M remained yet to be booked under the initial Hamamatsu supply agreements. This is the same amount that remained at the end of Q3 (April 30th), implying that all of the $362k of revenue booked in Q4 relates to non-Hamamatsu customers. However, ZMS notes in the 2016

annual report 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 more substantial in 2017. 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.

- **Major Chines PET OEM:** In March ZMS announced that an (unnamed) "major medical OEM based in China" had chosen their LFS crystals for a new line of high resolution PET imaging devices. As a reminder, a memorandum of understanding that the parties entered into stipulated that upon delivery by ZMS of LFS crystals and subsequent installation of the initial PET scanner incorporating the crystals in a hospital in Shanghai, that the MOU would convert into a contract. Under the contract, per the press release, "the OEM is projecting the installation of 200 LFS based PET scanners in hospitals and clinics across China over the next five years."
  While the initial installation has yet to happen, language in recent press releases suggest continued progress with fulfilling this contract. This includes announcements that the Chinese company placed an order for a third PET machine (Oct 13th) and that five PET scanners are expected to be installed by the end of 2016 (Oct 10th). But the Oct 13th press release also notes that the first scanner installation (which acts as the trigger for the MOU to convert to a contract) "remains outstanding as the first device cannot be installed until the PET scanning areas at the hospital are refurbished for the new high performance PET device." Zecotek did not offer a projected timeline for completion of the refurbishment, only noting that, "The logistics for the installation of the first device are well managed and we do not anticipate any further delay. We are pleased that the overall project is moving ahead and look to finalize the MOU in due course."
  The agreement with SCI, which was announced on October 20th (i.e. just a few days later), calls for an initial $5M equity investment in Zecotek Imaging and also for SCI to be actively involved in establishing ZMS's commercialization (and additional manufacturing) infrastructure in China. So, we eagerly await the first PET installation in China and the triggering of the MOU as well as the initial SCI investment.

- **Israel Distribution and Related Revenue**: Zecotek's entry into the Israeli market could be imminent following the announcement in September that the company 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. RAM notes that they will begin marketing ZMS' imaging products immediately and that their customer base includes "several world renowned PET integrators operating within Israel." Zecotek expects 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. But, most 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.

- **Next-Gen Crystals and MAPT Photo Detectors**: Zecotek notes that initial samples of their new LFS-8 crystals have outperformed the current LFS-3 crystals in testing, including a doubling of speed. The company also recently noted that they have 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). 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.

- **Radiation Monitoring**: In April ZMS announced that they received preliminary LFS crystals orders from "major OEMs developing radiation monitoring and detection devices" for testing in devices used for homeland security and border protection purposes. More specifically, the crystals were tested in "a device for large cargo screening at land crossings such as border crossings, airports, and harbors". Then in late June ZMS announced that they received a second order from this customer which will be tested for "screening applications for luggage, bags, packages, for high security locations including government buildings, sports stadiums, conventions centers and other crowded venues". ZMS further indicated that this relationship could eventually into a long-term supply agreement, noting, "We are working closely with the device manufacturer to develop detection devices for various applications and look to develop these crystal orders into long term, high volume contracts."

- **CERN**: In April 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 in 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 of this year, 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.

- **Silo and Container Measurement**: In mid-August 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 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 recent 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. This also suggests 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). As such and given that we have yet to incorporate meaningful revenue related to this relationship, our model could prove highly conservative. We will be eagerly awaiting updates on progress of refurbishment of the scanning areas at the hospitals which has been implicated as the bottleneck.

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 as well as in neurological diseases such as Alzheimer's. Israel, via ZMS's recently penned 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 more recent opportunities could be in homeland security, radiation and other measurement applications.

We model 2017 revenue of $2.6M but, as noted, we have not incorporated contribution related to supplying crystals to the China PET OEM contract. If this is triggered, our model will likely prove conservative and possibly highly conservative. 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 $1.50/share.

FINANCIAL MODEL

Zecotek Photonics Inc.

	2016 A	Q1 E	Q2 E	Q3 E	Q4 E	2017 E	2018 E	2019 E	2020 E
Total Revenues	$1,487.5	$504.4	$603.1	$685.3	$781.3	$2,574.0	$5,370.3	$10,311.0	$16,703.8
YOY Growth	*229.3%*	*237.2%*	*-13.5%*	*146.6%*	*115.4%*	*73.0%*	*108.6%*	*92.0%*	*62.0%*
Cost of Goods Sold	$1,229.2	$423.7	$494.5	$548.3	$593.8	$2,060.2	$3,490.7	$5,567.9	$7,516.7
Gross Income	$258.3	$80.7	$108.6	$137.1	$187.5	$513.8	$1,879.6	$4,743.0	$9,187.1
Gross Margin	*17.4%*	*16.0%*	*18.0%*	*20.0%*	*24.0%*	*35.0%*	*35.0%*	*46.0%*	*55.0%*
SG&A	$4,011.0	$1,012.0	$1,254.0	$917.0	$1,287.0	$4,470.0	$5,048.1	$5,877.3	$8,017.8
% SG&A	*269.6%*	*200.6%*	*207.9%*	*133.8%*	*164.7%*	*127.0%*	*94.0%*	*57.0%*	*48.0%*
R&D	$1,489.5	$374.0	$505.0	$287.0	$390.0	$1,556.0	$1,657.0	$1,710.0	$1,802.0
% R&D	*100.1%*	*74.1%*	*83.7%*	*41.9%*	*49.9%*	*60.4%*	*30.9%*	*16.6%*	*10.8%*
Operating Income	($5,242.2)	($1,305.3)	($1,650.4)	($1,066.9)	($1,489.5)	($5,512.2)	($4,825.5)	($2,844.2)	($632.7)
Operating Margin	*-352.4%*	*-258.8%*	*-273.7%*	*-155.7%*	*-190.7%*	*-214.1%*	*-89.9%*	*-27.6%*	*-3.8%*
Total Other Income (Expense)	($95.6)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Pre-Tax Income	($5,337.8)	($1,305.3)	($1,650.4)	($1,066.9)	($1,489.5)	($5,512.2)	($4,825.5)	($2,844.2)	($632.7)
Tax expense (benefit)	$0.0	$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%*	*0.0%*
Net Income	($5,337.8)	($1,305.3)	($1,650.4)	($1,066.9)	($1,489.5)	($5,512.2)	($4,825.5)	($2,844.2)	($632.7)
YOY Growth	*-28.4%*	*25.0%*	*-24.8%*	*133.0%*	*-9.3%*	*3.3%*	*-12.5%*	*-41.1%*	*-77.8%*
Net Margin	*-358.8%*	*-258.8%*	*-273.7%*	*-155.7%*	*-190.7%*	*-214.1%*	*-89.9%*	*-27.6%*	*-3.8%*
EPS	($0.05)	($0.01)	($0.01)	($0.01)	($0.01)	($0.04)	($0.03)	($0.02)	($0.00)
YOY Growth	*-33.9%*	*9.7%*	*-34.0%*	*105.2%*	*-19.0%*	*-8.9%*	*-16.8%*	*-41.9%*	*-78.4%*
Diluted Shares O/S	117,419	128,000	132,500	135,000	137,000	133,125	140,000	142,000	146,000

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