

# ZECOTEK PHOTONICS INC.

## MANAGEMENT DISCUSSION AND ANALYSIS FOR THE SECOND QUARTER ENDED JANUARY 31, 2008

### Dated at March 31, 2008

On October 23, 2007, Zecotek Medical Systems, Inc. announced that it had changed its name to Zecotek Photonics Inc. ("Zecotek" or the "Company") effective November 26, 2007. The name change better reflects the broad range of industry applications of the company's photonic product portfolio.

This MD&A should be read in conjunction with the audited financial statements for the year ended July 31, 2007. The significant accounting policies are outlined in Note 2 to the Financial Statements of the Company for the year ended July 31, 2007.

All dollar amounts are expressed in Canadian dollars except where noted. The Company's accounts are maintained in Canadian dollars. The business activities of the Company, carried out through its subsidiaries in Singapore are conducted primarily in Singapore dollars. The rate of exchange on July 31, 2007 as reported by the Bank of Canada, for the conversion of one Singapore dollar into Canadian dollars was \$0.7030.

### Company Overview

Zecotek Photonics Inc., formerly known as Zecotek Medical Systems Inc., is a photonics technology company developing and commercializing laser systems and components, high-performance crystals, solid-state photo detectors, optical imaging and 3D display technologies, for commercial and research applications in the major markets of material processing, bio-science, high-energy and new materials research, multimedia and security industries. Founded in 2003, the Company has focused on building shareholder value by commercializing novel, patented and patent-pending photonic technologies directly and through strategic alliances and joint ventures with leading industry partners such as Northrop Grumman (U.S.A) for Zecotek's patented LFS scintillation material, Fujikura Ltd. (Japan) for fiber and solid-state laser systems, Malaysian Institute of Microelectronics (Malaysia) for the solid-state MAPD photo detectors and Anteryon BV (Netherlands) for a key component of the 3D display screen.

Zecotek's operational headquarters, pre-production, and production facilities are located in Singapore. Through its wholly owned subsidiary Zecotek Medical Systems Singapore Pte Ltd., enabling technologies for use in industrial and medical imaging application are developed by three distinct operating divisions: Zecotek Imaging Systems Pte. Ltd., Zecotek Laser Systems Pte. Ltd. and Zecotek Display Systems Pte. Ltd. The Company's corporate headquarters is located in Vancouver, B.C. with additional research projects and laboratories in Canada, Malaysia, Russia and U.S.A. The Company is a Canadian public company trading on the TSX Venture Exchange under the symbol "ZMS" and on the Frankfurt Stock Exchange under the trading symbol "W11". The Company's website is [www.zecotek.com](http://www.zecotek.com).

### Lasers Systems

Zecotek's laser program is targeted at meeting the needs in the biomedical, scientific and material processing industries. The Company's initial focus has been in biomedical instrumentation, ophthalmology, dentistry, cardiovascular and infectious diseases as the increasing use of lasers, for disease diagnostics and drug discovery plus the growth in patient-paid therapy for vision correction and aesthetic applications have been major contributors to the growth in the medical laser industry. However, Zecotek's laser program has expanded beyond the biomedical industry due to significant demand for lasers from other industrial sectors. The Company is developing the following laser technologies:

- **Diode pumped solid-state lasers** for drug discovery, clinical diagnostics, scientific and industrial applications;
- **Fiber lasers** for use in bio-instrumentation, genomics, proteomics, scientific and material processing;
- **Thin film waveguide micro-lasers** for high speed integrated circuits.
- **Special application dye lasers** for high-precision laser spectroscopy

Zecotek has also developed a Rare earth Fine Oxide (RFO) Vanadate crystal to replace the ubiquitous YAG crystal, which is used in approximately 60% of laser applications, ranging from medical lasers to high-power industrial laser systems. The Company's proprietary RFO crystal growth technology has shown to be more efficient and thus more cost effective. Furthermore, the RFO crystal provides improved performance when compared with the YAG crystal.

## **Imaging Systems**

Zecotek's imaging strategy is to develop novel technologies that provide superior performance at a competitive price. The focus of the Company's development of important photonic technologies has concentrated on patented Lutetium Fine Silicate (LFS) scintillation crystals used in scientific and medical imaging devices, new generation solid-state photo detectors, MAPD, used in a broad range of medical and non-medical application.

## **3D Display Systems**

Zecotek has successfully developed and demonstrated a compact, color, true 3D display prototype that offers multiple viewers with true volumetric visualization while exhibiting depth and parallax. Zecotek's Real-Time 3D2D Display is a novel, proprietary display system for the visualization of images and data. Based on the auto stereoscopic principle, but with substantial patent pending innovation, it represents a new generation of 3D displays. Meeting the requirements of both mass market and professional use, Zecotek's 3D display is particularly powerful when applied to the field of medical imaging. Its design provides for multi-user, multi-view, freedom of movement, high resolution in both 3D and 2D modes, superior image dynamic range in 2D mode, 2D and 3D simultaneous displays, common brightness, compatibility with existing applications and designed to be cost competitive.

## **Zecotek Product Summary**

- Patented LFS scintillation material;
- Patent-pending MAPD solid-state photon counters;
- Proprietary RFO Vanadate crystal;
- Growing portfolio of Lasers:
  - Green Fiber Laser, Model GLF-540-0.2;
  - CW Narrow-Band Ti: Sapphire laser, Model TIS-FD-08/A-scan-WV;
  - CW Single-Frequency Ti: Sapphire Laser, Model TIS-SF-878;
  - CW Single Frequency Ring Dye Laser;
  - CW Ti: Sapphire Laser, Model TIS-SF-777;
  - Frequency Doubling Device, Model FD-SE-07;
  - New Surgical Laser, Model SL 1.4 Fiber Coupled Laser;
  - High-Power, High-Resolutions Laser Spectrometer, Model TIS/DYE-FD-08/A-scan.

## **Zecotek Research & Development Programs**

- New scintillation material for medical imaging to eventually serve as a successor material to the LFS;
- Enabling technologies for combined PET-MRI detectors, in development with the University of Washington;
- Various solid-state and fiber lasers, including a solid-state lasers.
- Thin film waveguide micro laser technology, being currently in development jointly with UBC;
- Real time auto-stereoscopic 3D display.

## **Recent Developments**

### **Laser Systems**

On February 28, 2008 Zecotek signed a manufacturing and distribution agreement with Fujikura Ltd. of Japan. This agreement has positioned Zecotek to become a leading supplier in the global laser systems and components industry.

The relationship is on producing Zecotek's proprietary Green Fiber Laser with priority in genomics and Zecotek/Fujikura joint high-power visible fiber laser for laser machining. Both companies have agreed to pool resources to manufacture new lines of visible wavelength lasers aimed at significant markets in bio-instrumentation and the processing of a wide range of industrial, consumer based and research materials. Fujikura's strong presence and brand will be used to penetrate key Japanese and Asian markets while Zecotek retains Market Tech U.S.A for non-exclusive distribution within North America.

In recent months Zecotek has strengthened its sales and marketing efforts, which together with participation at key trade shows, has significantly increased sales inquiries and orders for its broad range of lasers systems and components. Revenue continues to grow and the Company looks to build off of recent sales success to leading research and development institutions:

***CW Ti: Sapphire Laser, Model TIS-SF-777***

***Frequency Doubling Device, Model FD-SE-07***

The Department of Physics at the University of Illinois, Urbana-Champaign, Illinois, U.S.A., ordered Zecotek's proprietary TIS-SF-777 Ti: Sapphire Laser and a FD-SE-07 Resonant Frequency Doubler, which in tandem have the

ability to deliver a super-narrow line of powerful radiation in the blue spectral range. The tandem device provides a significant new tool for application in fields such as nanolithography, nanostructured materials and quantum physics where single atoms and ions can now be cooled, trapped, and precisely manipulated using laser beams.

***New Surgical Laser, Model SL 1.4 Fiber Coupled Laser***

The SL 1.4 fiber coupled laser offers a more effective and less expensive solution than presently used holmium lasers used for surgical applications.

***High-Power, High-Resolutions Laser Spectrometer, Model TIS/DYE-FD-08/A-scan***

The fully automated and integrated spectrometer incorporates Zecotek's CW state-of-the-art ultra-wide-tunable laser, which covers a super-broad spectral range between 275 and 1100 nm, with a high-precision wavelength meter and multiple-function electronic control unit. The first of the new spectrometers is to be shipped to the Institute for Quantum Computing, University of Waterloo, Canada.

***Green Fiber Laser, Model GLF-540-0.2***

Zecotek completed the development of a break-through Green Fiber Laser that operates in all known wavelengths of the green spectral range. The company has filed a patent application with the U.S. Patent Office covering the unique intellectual property related to the Green Fiber Laser. With the appointment of Market Tech, Inc., Zecotek received its first order for the GLF-540-0.2 Green Fiber Laser series from a major U.S. based customer.

***CW Narrow-Band Ti: Sapphire Laser, Model TIS-FD-08/A-Scan-WV***

The Institute for Quantum Computing, University of Waterloo, Canada selected Zecotek's CW Narrow-Band Ti: Sapphire laser for use in the field of nano-optics (the investigation of single semiconductor quantum dots) and quantum computing.

***CW Single-Frequency Ti: Sapphire Laser, Model TIS-SF-878***

Zecotek initiated commercial production of its new-generation CW Single-Frequency Ti:Sapphire laser, model TIS-SF-787. The TIS-SF-787 offers an ultra-narrow linewidth which, together with its super-wide tunable range, new level of compactness and frequency-stability, position the laser to be best-in-class in the growing laser market.

***CW Single Frequency Ring Dye Laser***

Korea's prestigious Gwangju Institute of Science and Technology (GIST) purchased Zecotek's CW Single Frequency Ring Dye laser for high-precision laser spectroscopy in its Advanced Photonics Research Institute.

***Sale of Laser Products and Services***

On May 3, 2007, an agency of the Government of India signed a contract to acquire over US\$800,000 worth of laser products and services. Tekhnoscan was selected from a group of world leading laser developers who competed for the Government of India contract. Under the contract Tekhnoscan is to supply lasers and consulting services upon delivery of a critical component to the Government of India by a third party. The contract has been delayed due to the non-delivery of the component by the third party. The Government of India is reviewing a new source for the component.

***RFO Vanadate Crystal***

On April 10, 2006 the Company announced the introduction of the Rare earth Fine Oxide (RFO) Vanadate crystal, a significant technological breakthrough in the development of crystals for solid-state lasers. The YAG crystal is used in 60% of all laser applications, ranging from medical lasers to high-power industrial laser systems. The Company's proprietary growth technology produces a RFO crystal which is a competitive substitute to YAG and meets or exceeds laser manufacturer's performance requirements with significant cost savings.

Zecotek has initiated commercial production of its proprietary, high-performance RFO Vanadate Crystals in the Company's Singapore laboratory facilities. Cyberstar of France, the manufacturer of Czochralski crystal growing ovens, delivered Zecotek's first crystal growing oven in October 2007. This is the first of an expected four Czochralski crystal growing ovens to be installed in Zecotek's Singapore labs as the company prepares for full commercial production of crystals used in solid-state laser systems.

## **Imaging Systems**

### ***Sale of MAPDs***

In January 2008 the University of Geneva, Switzerland, ordered a quantity of Zecotek's proprietary Micro-pixel Avalanche Photo Diode solid-state photo detectors for use as an alternative to photo multiplier tubes in the development of new calorimeters for high energy physics. The MAPD photo detectors address specific, high-demand requirements in high-energy physics such as particle accelerators where PMT's are vulnerable to the magnetic environment created by the superconducting magnets used in the collimation of particle tracks.

In January 2008 the Paul Scherrer Institute based in Switzerland selected Zecotek's proprietary Micro-pixel Avalanche Photo Diode solid-state photo detectors for use in trials for its next-generation positron emission tomography medical imaging program. The MAPD photo detectors meet required specifications for advanced, high resolution PET scanners and gamma camera applications, particularly when matched with Zecotek's patented LFS scintillation materials.

In December 2007 the Institute of High Energy Physics Research ordered a supply of Zecotek's proprietary Micro-pixel Avalanche Photo Diode solid-state photo detectors. The MAPD photo detectors will form a critical component in a new, high-performance hadron calorimeter, a device used in key experiments at the European Centre for High Energy particle Physics (CERN) in Switzerland

### ***Malaysian Institute for Micro-electronics Systems***

In July 2007 the Company selected the Malaysian Institute for Micro-electronics Systems (MIMOS), Malaysia's premier center for advanced micro-electronics technology and manufacturing based in Kuala Lumpur, to manufacture Zecotek's new-generation Micro-pixel Avalanche Photo Diodes (MAPD) solid-state photo detectors. In October 2007 MIMOS successfully completed the first commercial production run of the company's new-generation MAPDs. First-run production samples have been delivered to key OEM customers in both medical imaging and high-energy physics for final testing.

### ***University of Washington Lab Tests***

In May 2007 testing conducted by the University of Washington demonstrated Zecotek's MAPD superior performance versus existing photo multiplier tubes (PMT's). The conclusive test results validate that MAPD, in combination with the Company's patented LFS scintillation crystal, outperforms current PMT's in critical imaging parameters. The combination of Zecotek's MAPD and LFS crystals resulted in an equal to or greater than overall signal gain and an improved energy resolution versus PMT's and standard commercial crystals. These superior capabilities will be fully utilized in the next-generation of PET-MRI scanner systems currently being developed in the University of Washington laboratory.

### ***Sale of LFS Scintillation Crystals***

In October 2007 the Paul Scherrer Institute based in Switzerland purchased an order of Zecotek's patented Lutetium Fine Silicate (LFS) scintillation crystals for trials in its next-generation Positron Emission Tomography (PET) medical imaging program. The Paul Scherrer Institute PET program is focused on advancing improvements in sensitivity, spatial resolution and image quality in PET scanners, based on the understanding that advances in PET are driven largely by progress in instrumentation, in particular the performance of scintillation materials, photo-detectors and read-out electronics. Higher resolution PET scanners would also widen PET's application in brain function analysis and diagnosis.

## **3D Display Systems**

In December 2007 the Company initiated a number of demonstrations of a 32" commercial prototype of its proprietary Real-Time 3D2D Display System®, the first 3D display offering multiple viewers true volumetric visualization while exhibiting depth and parallax over a wide viewing angle. The demonstrations were attended by a select group of representatives of potential industry partners, including Insight Media, a leading publishing and consulting firm focused on the display industry. Zecotek has engaged Insight Media to provide advice and guidance on a market entry strategy for the display system.

In July 2007 Anteryon BV of the Netherlands was selected to produce the key screen component of Zecotek's proprietary Real-Time 3D2D Display. Anteryon will produce Zecotek's proprietary 3D lenticular display in a 32" screen format, considered the optimum size to demonstrate its potential power and user impact. The first demonstration model was delivered in October and the Company is preparing to host demonstrations for industry, media and the financial community starting in the last week of November 2007.

## Corporate Developments

### *Financings*

On December 20, 2007, the Company closed a private placement brokered by Loewen, Ondaatje, McCutcheon Limited by issuing 2,156,300 units at a price of \$1.60 per unit for gross proceeds of \$3,450,080. Each unit consists of one common share and one-half of one common share purchase warrant. Each whole warrant entitles the holder to acquire one common share at an exercise price of \$2.10 per common share for a period of 24 months. The private placement was increased from \$3.0 million to \$3.4 million following the exercise in full by Loewen.

On September 19, 2007, the Company closed a non-brokered private placement consisting of 1,563,000 Units at a price of \$1.60 for gross proceeds of \$2,500,800. Each Unit consists of one common share and one-half of one common share purchase warrant. Each whole warrant entitles the holder to acquire one common share at an exercise price of \$2.00 per common share for a period of 18 months after the date the private placement closes. Under the terms of the private placement, 1,563,000 common shares were issued at \$1.60 per share.

### *Singapore Economic Development Board grants Research Incentives*

In July 2007, the Company's wholly owned subsidiary Zecotek Medical Systems Singapore Pte Ltd, received grant approval for the Singapore Economic Development Board's (EDB) Research Incentive Scheme for Companies program. Under the agreement the terms of the grant details remain confidential. General details of EDB's support programs can be found on EDB's website [www.edb.gov.sg](http://www.edb.gov.sg).

### *Additions to the Advisory Board*

In November 2007 Dr. K.A. Abraham and Dr. Teoh Tiong Ann were appointed to the Company's Advisory Board. Both Dr. Abraham and Dr. Teoh are recognized experts in their respective fields and are expected to make significant contributions to the design and development the combined PET/MRI scanning devise, the Optical Coherent Tomography device as well as a range of medical lasers used both in treatment and diagnostics.

## Selected Annual Information

The Company's fiscal year end is July 31. The following is a summary of certain selected audited consolidated financial information for the Company's three most recently completed fiscal years.

	Audited Year Ending July 31, 2007	Audited Year Ending July 31, 2006	Audited Year Ending July 31, 2005
Total revenues	\$ 74,040	\$ 44,153	\$ 4,110
Net loss for the year	\$ (8,083,874)	\$ (5,734,665)	\$ (1,342,601)
Earnings/loss per share	\$ (0.28)	\$ (0.37)	\$ (0.13)
Total assets	\$ 3,290,985	\$ 4,275,901	\$ 3,197,577
Long term debt	\$ 0	\$ 0	\$ 0
Share Capital	\$ 21,809,340	\$ 16,246,313	\$ 10,506,895
Number of Shares	39,813,278	34,692,741	15,033,341
Retained earnings (loss)	\$ (21,885,029)	\$ (13,801,155)	\$ (7,778,490)

## Summary of Quarterly Results

The following table sets out certain financial information for the past eight quarters

Quarters ended (unaudited)	January 31, 2008	October 31, 2007	July 31, 2007	April 30, 2007
Operating Accounts				
Revenue	\$132,419	Nil	Nil	Nil
Net loss	\$2,288,606	\$2,096,530	\$3,231,748	\$1,788,498
Balance Sheet Accounts				
Total Assets	\$7,102,587	\$3,889,105	\$3,156,031	\$5,694,403
Loss per share	\$0.05	\$0.05	\$0.12	\$0.07

Quarters ended (unaudited)	January 31, 2007	October 31, 2006	July 31, 2006	April 30, 2006
Operating Accounts				
Revenue	Nil	Nil	Nil	Nil
Net loss	\$1,674,381	\$1,547,056	\$4,114,168	\$743,791
Balance Sheet Accounts				
Total Assets	\$3,881,408	\$2,931,039	\$4,275,901	\$2,529,782
Loss per share	\$0.05	\$0.04	\$0.10	\$0.05

## Results of Operations

### Revenue

Revenues amounted to \$132,419 in the second quarter of 2008 and the six-month period ended January 31, 2007 compared with nil in the same periods in 2007. These revenues are from the sale of laser equipment to research and development institutions.

### Gross Margin

The gross profit for the second quarter of 2008 amounted to \$30,154 on \$132,419 of product sales for an average gross margin of 23 percent.

### Interest Income

Interest income amounted to \$41,370 in the quarter ended January 31, 2008, compared with \$39,025 in the same period in 2006, reflecting an increase of 6%. Interest income totaled \$53,043 in the six months ended January 31, 2008, an increase of 36% when compared to \$39,025 in the same period in 2007. These increases in interest income are largely due to the Company's liquidities being higher pursuant to the private placements in September 6, 2007 and December 20, 2008.

### Research and Development Expenses

Research and development (R&D) expenses amounted to \$1,098,507 in the second quarter of 2008, compared with \$510,601 in the second quarter of 2007, representing an increase in costs of 115%. For the first six months of 2008, R&D expenses were \$1,852,563 compared to \$1,050,904 for the same period of 2007, reflecting an increase in costs of 76%. These increases in costs are due to the increased research and development for the commercialization of some of the technologies. Research projects are currently being carried out in laboratories in Canada, Malaysia, Russia and U.S.A.

### General and Administrative Expenses

General and administrative (G&A) expenses amounted to \$1,174,943 in the second quarter of 2008, compared with \$1,212,118 in the same period of 2007, representing a decrease in costs of 3%. In the first six months of 2008, G&A expenses totaled \$2,437,034, an increase in costs of 10% when compared to \$2,208,361 for the same period in 2007. The increase in costs is due to the setting up of manufacturing operations in Singapore, negotiating agreements with vendors, manufacturing and distribution partners and sales and marketing efforts.

## Net Loss

The Company recorded a net loss of \$2,288,606 or \$0.05 per share in the second quarter of 2008, compared with \$1,674,381 or \$0.05 per share in the same period of 2007. A net loss of \$4,385,136 or \$0.10 per share was recorded in the first six months of 2008 compared with \$3,221,437 or \$0.09 per share in the same period of 2007. The changes in net loss are primarily due to the change in R&D and G&A expenses as discussed above, as well as to higher amortization and foreign exchange losses.

## Liquidity and Capital Resources

The Company's cash and cash equivalents totalled \$5,237,403 at January 31, 2008 an increase of \$3,659,540 over the \$1,577,863 available at July 31, 2007. Working capital was \$5,108,019 at January 31, 2008 an increase of \$3,843,300 from \$1,264,719 of working capital at July 31, 2007.

## Share Capital

The outstanding share capital data of the Company as at January 31, 2008 is as follows:

	Number outstanding
Common Shares	45,385,838
Options	4,729,000
Common Share Purchase Warrants	1,859,650
Agents' Warrants	442,134

## Internal Control over Financial Reporting

Management is responsible for designing such internal controls over financial reporting, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP.

No changes were made in the Company's internal control over financial reporting during the Company's most recent interim period that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

## Disclosure Controls and Procedures

Disclosure controls and procedures are designed to provide reasonable assurance that all relevant information is gathered and reported to senior management, including the Chief Executive Officer and Chief Financial Officer, on a timely basis so that the appropriate decisions can be made regarding public disclosure.

The Chief Executive Officer and Chief Financial Officer of the Company conducted an evaluation of the disclosure controls and procedures as required by Multilateral Instrument 52-109 issued by the Canadian Securities Administrators. They concluded that as at January 31, 2008, the Company's disclosure controls and procedures were effective to provide reasonable assurance that material information regarding required disclosures was made known to them on a timely basis.

## Forward Looking Statements

Certain statements contained herein that are not historical facts are forward-looking statements that involve risks and uncertainties. There can be no assurance that such statements will prove to be accurate as actual results and future events could differ materially from those anticipated in such statements.

## Additional Information

Additional information and details relating to the Company, including the most recent annual consolidated financial statements and MD&A for 2007 are available on SEDAR at [www.sedar.com](http://www.sedar.com).