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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

☑ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended March 31, 2009

o **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number 000 — 51481

ELECTRO-OPTICAL SCIENCES, INC.

(Exact name of Registrant as specified in its charter)

Delaware	**13-3986004**
(State or Other Jurisdiction of Incorporation or Organization)	*(I.R.S. Employer Identification No.)*
3 West Main Street, Suite 201 Irvington, New York	**10533**
(Address of Principal Executive offices)	*(Zip Code)*

Registrant's Telephone Number, including area code:
(914) 591-3783

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☑ No o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer o Accelerated filer ☑ Non-accelerated filer o (Do not check if a smaller reporting company) Smaller Reporting Company o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes o No o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes o No ☑

As of May 7, 2009, 17,639,498 shares of the Registrant's common stock were outstanding.

Electro-Optical Sciences, Inc.
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ELECTRO-OPTICAL SCIENCES, INC.
CONDENSED BALANCE SHEETS

	March 31, 2009 (unaudited)	December 31, 2008 *
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 11,253,771	$ 15,069,939
Marketable securities	391,980	390,512
Prepaid expenses and other current assets	304,400	375,612
Total Current Assets	11,950,151	15,836,063
Property and equipment, net	566,288	643,383
Patents and trademarks, net	91,933	94,908
Other assets	46,339	45,276
Total Assets	$ 12,654,711	$ 16,619,630
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable (includes related parties of $15,000 as of March 31, 2009 and $17,500 as of December 31, 2008)	$ 655,395	$ 634,394
Accrued expenses	753,244	832,228
Deferred income	—	36,085
Other current liabilities	23,866	27,466
Total Current Liabilities	1,432,505	1,530,173
COMMITMENTS AND CONTINGENCIES (Note 9)		
Stockholders' Equity		
Preferred stock — $.10 par value; authorized 10,000,000 shares; issued and outstanding: none		
Common stock — $.001 par value; authorized 30,000,000 shares; issued and outstanding 17,639,498 shares at March 31, 2009 and 17,634,498 at December 31, 2008	17,639	17,634
Additional paid-in capital	75,966,815	75,845,953
Accumulated other comprehensive loss	(5,400)	(6,868)
Accumulated deficit	(64,756,848)	(60,767,262)
Stockholders' Equity	11,222,206	15,089,457
Total Liabilities and Stockholders' Equity	$ 12,654,711	$ 16,619,630

* Derived from the audited balance sheet as of December 31, 2008

See accompanying notes to the financial statements

ELECTRO-OPTICAL SCIENCES, INC.
CONDENSED STATEMENTS OF OPERATIONS
(unaudited)

	Three months ended March 31,	
	2009	2008
Operating expenses:		
Research and development	$ 2,534,414	$ 3,045,093
General and administrative	1,526,740	1,439,795
Operating loss	(4,061,154)	(4,484,888)
Interest income	25,483	181,972
Other income, net	46,085	26,086
Net loss	(3,989,586)	$ (4,276,830)
Basic and diluted net loss per common share	$ (0.23)	$ (0.28)
Basic and diluted weighted average number of common shares outstanding	17,635,331	15,401,882

See accompanying notes to the financial statements

ELECTRO-OPTICAL SCIENCES, INC.
CONDENSED STATEMENTS OF CASH FLOWS
(unaudited)

	Three Months Ended March 31,	
	2009	2008
Cash flows from operating activities:		
Net loss	$ (3,989,586)	$ (4,276,830)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	80,070	65,479
Noncash compensation	118,567	111,807
Deferred income	(36,085)	(7,437)
Amortization of discount on marketable securities	—	(285)
Changes in operating assets and liabilities:		
Increase in other assets	(1,063)	—
Decrease in prepaid expenses and other current assets	71,212	198,376
(Decrease) increase in accounts payable and accrued expenses	(57,983)	405,384
(Decrease) increase in other current liabilities	(3,600)	4,251
Net cash used in operating activities	(3,818,468)	(3,499,255)
Cash flows from investing activities:		
Purchases of property and equipment	—	(231,492)
Sale of marketable securities	—	434,404
Net cash provided by investing activities	—	202,912
Cash flows from financing activities:		
Proceeds from exercise of stock options	2,300	—
Net cash provided by financing activities	2,300	—
Net decrease in cash and cash equivalents	(3,816,168)	(3,296,343)
Cash and cash equivalents at beginning of period	15,069,939	19,196,589
Cash and cash equivalents at end of period	$ 11,253,771	$ 15,900,246
Supplemental Schedule of Non-cash Investing and Financing Activities		
Unrealized loss on marketable securities	$ 1,468	$ 3,368

See accompanying notes to the financial statements

ELECTRO-OPTICAL SCIENCES, INC.
NOTES TO CONDENSED FINANCIAL STATEMENTS
(In thousands, except for share and per share data)
(unaudited)

1. ORGANIZATION AND BASIS OF PRESENTATION

Electro-Optical Sciences, Inc., a Delaware corporation ("EOS" or the "Company") is a medical device company focused on the design, development and commercialization of a non-invasive, point-of-care instrument to assist in the early diagnosis of melanoma. Our flagship product, MelaFind®, features a hand-held imaging device that emits light of multiple wavelengths to capture images of suspicious pigmented skin lesions and extract data. The data are then analyzed utilizing image processing classification algorithms, 'trained' on our proprietary database of melanomas and benign lesions, to provide information to assist in the management of the patient, including information useful in the decision of whether to biopsy the lesion.

The components of the MelaFind® system include:

- a *hand-held imaging device*, which employs high precision optics and multi-spectral illumination (multiple colors of light including near infra-red);
- a *proprietary database* of pigmented skin lesions, which we believe to be the largest in the U.S.; and
- *lesion classifiers*, which are sophisticated mathematical algorithms that extract lesion feature information and classify lesions.

The Company has entered into a binding Protocol Agreement with the U.S. Food and Drug Administration ("FDA"), which is an agreement for the conduct of the pivotal trial in order to establish the safety and effectiveness of MelaFind®. The Company believes that the presence of the Protocol Agreement significantly enhances its ability to expedite the FDA approval process. On October 12, 2006, the Company was informed by the FDA that when submitted, the MelaFind® premarket approval, or PMA, application, would receive expedited review. Expedited review means that upon filing the PMA, the FDA will conduct a team review, prioritize the application, and allocate sufficient resources toward a 180 day review period. While the expedited review could shorten the MelaFind® FDA approval process, the Company can provide no assurances that this will be the case. In 2008, the data accrual phase of the MelaFind® pivotal trial was completed and the image processing classification algorithms were finalized. In the first quarter of 2009, the databases underwent third-party statistical validation and the classification algorithms underwent software verification and validation.

On February 13, 2009, the Company announced that a third party, independent bio-statistician had provided positive top line results from the MelaFind® pivotal clinical trial. This blinded study was conducted at seven clinical sites and included 1,831 pigmented skin lesions from 1,383 patients. The Company is working to complete the PMA application, which includes the final study reports, and expects to file it with the FDA during the second quarter of 2009. Upon obtaining approval from the FDA, the Company plans to launch MelaFind® commercially in the United States.

To date the Company has not generated any revenues from MelaFind®.

The Company anticipates that it will continue to incur net losses for the foreseeable future in the development and commercialization of the Melafind® device. From inception, the Company financed operations primarily through the sale of convertible preferred stock and subsequently sold common stock as part of an initial public offering on October 28, 2005, two private placements: (one that closed in November 2006 and a second that closed in August 2007) and a registered direct offering which closed August 8, 2008 (refer to Note 10 for further details).

The Company faces certain risks and uncertainties which are present in many emerging medical device companies regarding future profitability, ability to obtain future capital, protection of patents and intellectual property rights, competition, rapid technological change, government regulations, changing health care marketplace, recruiting and retaining key personnel, and reliance on third party manufacturing organizations.

As of March 31, 2009, the Company's total of cash, cash equivalents and marketable securities was $11.6 million. The Company will require additional funds to achieve significant commercialization of MelaFind® (See NOTE 14). However, there can be no assurances that the Company will be able to raise additional financing in the future. Additional funds may not become available on acceptable terms, and there can be no assurance that any additional funding that the Company does obtain will be sufficient to meet the Company's needs in the long term. In the event that the Company is unable to raise additional funds, the Company has the ability and intent to reduce certain discretionary expenditures. Management believes these actions, if required, will allow the Company to fund anticipated levels of operations into the second quarter of 2010.

The unaudited condensed financial statements included herein have been prepared from the books and records of the Company pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC") for reporting on Form 10-Q. The information and note disclosures normally included in complete financial statements prepared in accordance with generally accepted accounting principles in the United States ("GAAP") have been condensed or omitted pursuant to such rules and regulations. The interim financial statements should be read in conjunction with the audited financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2008.

The Company's management is responsible for the financial statements included in this document. The Company's interim financial statements are unaudited. Interim results may not be indicative of the results that may be expected for the year. However, the Company believes all adjustments considered necessary for a fair presentation of these interim financial statements have been included and are of a normal and recurring nature.

2. MARKETABLE SECURITIES

The Company's marketable securities consist of corporate debt securities with a weighted average maturity not in excess of twelve months. The Company classifies its marketable securities as available-for-sale, as defined by Statement of Financial Accounting Standards ("SFAS") No. 115, "Accounting for Certain Investments in Debt and Equity Securities." Available-for-sale securities are carried at fair value, with unrealized gains and losses reported as a component of stockholders' equity in accumulated other comprehensive loss. Interest income, realized gains and losses, and declines in value of securities judged to be other-than-temporary are included in the Company's statement of operations. As of March 31, 2009, marketable securities consisted of:

	March 31, 2009	
	Fair Value	Unrealized Gain (Loss)
Corporate debt securities	$ 392	$ (5)

The Company evaluates declines in the fair value of its investments in available-for-sale marketable securities to determine if these declines are other-than-temporary. When a decline in value is determined to be other-than-temporary, an impairment charge would be recorded and a new cost basis in the investment would be established. The fair values of the Company's marketable securities on hand at March 31, 2009, were measured using quoted market prices in active markets for identical assets (Level I).

3. COMPREHENSIVE LOSS

Comprehensive loss includes net loss and unrealized gains and losses on available-for-sale marketable securities. Cumulative unrealized gains and losses on available-for-sale marketable securities are reflected as accumulated other comprehensive loss in stockholders' equity on the Company's balance sheet.

For the three months ended March 31, 2009, comprehensive loss was $3,989 which includes a net loss of $3,990 and an unrealized gain on available-for-sale marketable securities of $1. For the three months ended March 31, 2008, comprehensive loss was $4,280, which includes a net loss of $4,277 and an unrealized loss on available-for-sale marketable securities of $3.

4. USE OF ESTIMATES

The preparation of financial statements in conformity with GAAP requires the use of estimates and assumptions by management that affect reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The most significant estimates relate to stock based compensation arrangements and accrued expenses. Actual results could differ from these estimates.

5. RECENTLY ADOPTED ACCOUNTING PRONOUNCEMENTS

In June 2008, the FASB issued Staff Position EITF 03-6-1, “Determining Whether Instruments Granted in Share-Based Payment Transactions Are Participating Securities (FSP EITF 03-6-1”), which is effective for financial statements issued for fiscal years beginning after December 15, 2008. FSP EITF 03-6-1 clarifies that share-based payment awards that entitle holders to receive non-forfeitable dividends before they vest will be considered participating securities and included in the basic earning per share calculation. The adoption of FSP EITF 03-6-1 did not have any effect on the Company’s financial statements.

On April 1, 2009, the FASB issued FASB Staff Position (FSP) FAS 141(R) -1, *Accounting for Assets Acquired and Liabilities Assumed in a Business Combination That Arise from Contingencies*. This FSP provides additional guidance and disclosure requirements regarding the recognition and measurement of contingent assets acquired and contingent liabilities assumed in a business combination where the fair value of the contingent assets and liabilities cannot be determined as of the acquisition date. This FSP is effective for acquisitions occurring after January 1. 2009. The adoption of this FSP did not have any impact on the Company, and its future impact will be dependent upon the specific terms of future business combinations, if any.

In April 2008, the FASB issued FSP FAS 142-3, “Determination of the Useful Life of Intangible Assets (“FSP FAS 142-3”). FSP FAS 142-3 amends the factors an entity should consider in developing renewal or extension assumptions used in determining the useful life of recognized intangible assets under SFAS No. 142, “Goodwill and Other Intangible Assets”. This guidance for determining the useful life of a recognized intangible asset applies prospectively to intangible assets acquired individually or with a group of other assets in either an asset acquisition or business combination. FSP FAS 142-3 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2008, earlier adoption is prohibited. The adoption of FSP FAS 142-3 did not have any effect on the Company’s financial statements.

In December 2007, the FASB issued SFAS No. 160, Non-controlling Interests in Consolidated Financial Statements—an amendment of ARB No. 51. This Statement amends ARB 51 to establish accounting and reporting standards for the non-controlling interest in a subsidiary and for the deconsolidation of a subsidiary. It clarifies that a non-controlling interest in a subsidiary is an ownership interest in the consolidated entity that should be reported as equity in the consolidated financial statements. In addition to the amendments to ARB 51, this Statement amends FASB Statement No. 128, Earnings per Share; so that earnings-per-share data will continue to be calculated the same way those data were calculated before this Statement was issued. This Statement is effective for fiscal years, and interim periods within those fiscal years, beginning on or after December 15, 2008. The adoption of this pronouncement did not have any impact on the Company’s financial statements.

In March 2008, the FASB issued SFAS No. 161 “Disclosures about Derivative Instruments and Hedging Activities” (“SFAS 161”). This new standard enhances disclosure requirements for derivative instruments in order to provide users of financial statements with an enhanced understanding of (i) how and why an entity uses derivative instruments, (ii) how derivative instruments and related hedged items are accounted for under SFAS No. 133 “Accounting for Derivative Instruments and Hedging Activities” and its related interpretations, and (iii) how derivative instruments and related hedged items affect an entity’s financial position, financial performance, and cash flows. SFAS 161 is to be applied prospectively for the first annual reporting period beginning on or after November 15, 2008. The Company believes that the adoption of SFAS 161 did not have any impact on the Company’s financial statement disclosures since the Company does not have any derivative instruments.

6. RECENT ACCOUNTING PRONOUNCEMENTS

On April 9, 2009, the FASB simultaneously issued the following three FSPs:

- FSP FAS 157-4, *Determining Fair Value When the Volume and Level of Activity for the Asset or Liability Have Significantly Decreased and Identifying Transactions That Are Not Orderly*, provides additional guidance to companies for determining fair values of financial instruments for which there is no active market or quoted prices may represent distressed transactions. The guidance includes a reaffirmation of the need to use judgment in certain circumstances.
- FSP FAS 107-1 and APB 28-1, *Interim Disclosures about Fair Value of Financial Instruments*, requires companies to provide additional fair value information for certain financial instruments in interim financial statements, similar to what is currently required to be disclosed on an annual basis
- FSP FAS 115-2, FAS 124-2, and EITF 99-20-2, *Recognition and Presentation of Other-Than-Temporary Impairments*, amends the existing guidance regarding impairments for investments in debt securities. Specifically, it changes how companies determine if an impairment is considered to be other-than-temporary and the related accounting. This standard also provides for increased disclosures.

These FSPs apply to both interim and annual periods and will be effective for us beginning April 1, 2009. We have evaluated these standards and believe they will have no impact on our financial condition and results of operations.

7. NET LOSS PER COMMON SHARE

Net loss per common share is presented in accordance with the provisions of SFAS No. 128, “Earnings Per Share” (“EPS”). Basic EPS excludes dilution for potentially dilutive securities and is computed by dividing net loss attributable to common stockholders by the weighted average number of common shares outstanding during the period. Diluted EPS gives effect to dilutive options, warrants and other potential common shares outstanding during the period. Diluted net loss per common share is equal to the basic net loss per common share since all potentially dilutive securities are anti-dilutive for each of the periods presented. Potential common stock equivalents excluded consist of stock options and warrants which are summarized as follows:

	March 31,	
	2009	2008
Common stock options	2,051,580	1,919,584
Warrants	1,124,544	1,126,886
Total	3,176,124	3,046,470

8. STOCK-BASED COMPENSATION

The Company has one stock-based compensation plan which allows the Board of Directors to grant incentives to employees, consultants, directors, officers and collaborating scientists in the form of incentive stock options, nonqualified stock options and restricted stock awards. The Company also has two other stock-based compensation plans pursuant to which stock options are outstanding but no new grants may be made.

Stock awards under the Company's stock option plans have been granted at prices which are no less than the closing price of the stock on the date of the grant. Options granted under the 2005 Stock Incentive Plan (2005 Plan), are generally time-based or performance-based and vesting varies accordingly. Options under this plan expire in up to a maximum of ten years from the date of grant. Since the Company adopted the 2005 Plan, awards may not be granted under the Company's previous stock option plans.

The compensation expense recognized in the Statement of Operations in the first quarter of 2009 and 2008 for stock options amounted to $119 (of which $9 relates to performance milestones) and $112 (of which $33 relates to performance milestones), respectively. Cash received from options and warrants exercised under all share-based payment arrangements for the three months ended March 31, 2009 and 2008 were $2 and $0, respectively.

The fair value of each option award granted after the adoption of SFAS 123R is estimated on the date of grant using the Black-Scholes option valuation model and assumptions as noted in the following table:

	For the Three Months Ended March 31, 2009	For the Three Months Ended March 31, 2008
Expected life	5 years	5 years
Expected volatility	60%	60%
Risk-free interest rate	1.69%	2.95%
Dividend yield	0%	0%

The expected life of the options is based on the observed and expected time to post-vesting, forfeiture and exercise. Groups of employees that have similar historical exercise behavior are considered separately for valuation purposes. The expected volatility is calculated on closing price volatility based on daily closing prices from the Company's initial public offering ("IPO") to March 31, 2009, which approximates implied volatility from other publicly-traded stock that was established at the time of our IPO. The risk-free interest rate is based on the continuous rates provided by the U.S. Treasury with a term equal to the expected life of the option. The expected dividend yield is zero as the Company has never paid dividends and does not currently anticipate paying any in the foreseeable future.

On October 10, 2008, the formula-based option, issued in 2004 to Dr. Gulfo, President and CEO, from the Company's 2003 Stock Incentive Plan for 743,283 shares, at an exercise price of $0.46, was cancelled. On October 10, 2008, Dr. Gulfo was granted stock options for an aggregate of 900,000 shares of the Company's common stock at an exercise price of $3.75 a share (the closing price on the grant date); of which 380,000 shares were from the Company's 2005 Plan previously approved for issuance by the Compensation Committee of the Board of Directors and the stockholders of the Company and 520,000 shares were from the 2005 Plan approved for issuance by the Compensation Committee of the Board of Directors subject to stockholder approval. The exercise of these 520,000 stock options is subject to the receipt of stockholder approval of the availability of these shares for issuance under the 2005 Plan, which is being solicited in the Company's 2009 Proxy Statement, but are deemed to have been granted outside the 2005 Plan until approved by the Company's stockholders.

Of the 900,000 common shares underlying these stock options granted to Dr. Gulfo, 180,000 shares vested immediately, 540,000 shares vest upon the Company receiving FDA approval of its PMA application for MelaFind® , and 180,000 shares vest in four equal annual installments commencing on the date of grant, the first of which is October 10, 2009. These 900,000 options expire ten years from the date of grant.

At March 31, 2009, stock options to purchase 2,051,580 shares of common stock at exercise prices ranging from $0.46 to $7.75 per share are outstanding and exercisable at various dates through 2018.

During the three months ended March 31, 2009, the weighted average fair value of options granted, estimated as of the grant date using the Black-Scholes option valuation model, was $2.17. For the three month period ended March 31, 2008, the weighted average fair value of options granted was $2.42. For the three months ended March 31, 2009, the total intrinsic value of options exercised was $21. There were no options exercised in the first three months of 2008.

The status of the Company's stock option plans at March 31, 2009 is summarized in the following:

	Number of Shares	Weighted Average Exercise Price per Share	Weighted Average Remaining Contractual Term in Years	Aggregate Intrinsic Value
Outstanding at December 31, 2008	2,069,080	$4.39	5.8	
Granted	7,500	4.19	4.8	
Exercised	(5,000)	0.46	—	
Forfeited or expired	(20,000)	1.37	—	
Outstanding at March 31, 2009	2,051,580	$4.43	5.6	$1,341
Vested and exercisable at March 31, 2009	779,942	$4.37	3.9	$ 692

	Options Outstanding			Options Exercisable	
Range of Exercise Prices	Number Outstanding	Weighted-Average Remaining Contractual Life	Weighted Average Exercise Price	Number Exercisable	Weighted-Average Exercise Price
$.01-$.46	110,000	0.7 years	$ .46	60,000	$ .46
$.47-$1.00	104,578	2.7 years	$1.00	104,578	$1.00
$1.01-$7.75	1,837,002	6.0 years	$4.86	615,364	$5.33
$.01-$7.75	2,051,580	5.6 years	$4.43	779,942	$4.37

As of March 31, 2009, of the total 2,051,580 options outstanding, 1,271,638 have not vested. Of this total unvested amount, 956,163 will vest upon the attainment of certain milestones, and the balance will vest over the requisite service period.

As of March 31, 2009, there was $3,189 of total unrecognized compensation cost related to unvested options to be recognized over a period to be determined by milestones.

As of March 31, 2009, there were 400,151 shares available for future grants under the Company's 2005 Plan, not including the 520,000 shares subject to options deemed to have been granted to Dr. Gulfo.

9. COMMITMENTS AND CONTINGENCIES

The Company is party to two non-cancelable operating leases for office space expiring June 2009 and January 2011. The leases are subject to escalations for increases in operating expenses. The approximate aggregate minimum future payments under these leases are due as follows:

2009	2010	2011
$ 175	$186	$15

In January 2006, the Company entered into an agreement with ASKION GmbH ("ASKION") to produce and test commercial-grade MelaFind® hand-held imaging device systems. Under the agreement, ASKION is to produce imaging devices for the Company to be utilized at the Company's data collection sites in the United States and Europe. The Company expects to maintain a relationship, which has evolved into a month-to-month agreement, with ASKION and continue with production and development activities throughout 2009.

In August of 2006, the Company engaged Carl Zeiss Jena GmbH on usual commercial terms to build the lenses and assemblies, as well as provide certain technical consulting services for the MelaFind® units which have been used in the Company's pivotal clinical trial. The Company expects Carl Zeiss Jena GmbH to continue to supply lenses and assemblies for commercialization units throughout 2009.

The Company has an employment agreement with its President and Chief Executive Officer, Dr. Gulfo, which provides for an annual base salary, stock options and discretionary performance bonuses. The agreement, which provides for automatic one-year renewal terms, currently runs through the end of 2009. Effective March 1, 2008, the Board of Directors increased Dr. Gulfo's annual base salary to $280 and awarded him a bonus of $65. (See also Note 8)

The Company is not currently subject to any material legal proceedings, nor to management's knowledge is any material legal proceeding threatened against the Company.

10. STOCKHOLDERS' EQUITY

On October 31, 2006, the Company entered into securities purchase agreements and a registration rights agreement with certain accredited investors for the private placement of 2,312,384 shares of the Company's common stock and warrants to purchase up to 346,857 shares of the Company's common stock for aggregate gross proceeds of approximately $13.2 million and net proceeds of approximately $12.5 million. Pursuant to the securities purchase agreements, for a purchase price of $5.70 each investor received one share of the Company's common stock and a warrant to purchase 0.15 of a share of the Company's common stock. The warrants are five-year warrants with an exercise price of $6.70 per share.

On July 31, 2007, the Company entered into a securities purchase agreement and a registration rights agreement with certain accredited investors for the private placement of 2,000,178 shares of the Company's common stock and warrants to purchase up to 500,041 shares of the Company's common stock for aggregate gross proceeds of approximately $11.5 million and net proceeds of approximately $10.7 million. The private placement closed August 3, 2007. Pursuant to the securities purchase agreement, for a purchase price of $5.75 each investor received one share of the Company's common stock and a warrant to purchase 0.25 of a share of common stock. The warrants are five-year warrants with an exercise price of $8.00 per share.

Both of these private placements were completed pursuant to an exemption from registration provided by Section 4(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder.

Pursuant to the terms of the registration rights agreements, the Company filed resale registration statements covering the shares in both private placements, including the shares issuable upon exercise of the warrants, with the SEC. In the event that the Company fails to maintain the effectiveness of these registration statements for the periods described in the registration rights agreements, the holders would be entitled to certain monetary damages.

However, in no event is the Company obligated to make payments in excess of 10% of the aggregate purchase price of the common shares. The Company has concluded that it is unlikely that the Company would be required to remit any payments to its investors for failing to maintain its effectiveness. The Company's resale registration statements on Forms S-3 were declared effective by the SEC (file #333-139056 and file #333-145740) on February 12, 2007 and September 11, 2007, respectively.

On June 26, 2008, the Company filed a Form S-3 shelf registration statement for an indeterminate number of shares of common stock, warrants to purchase shares of common stock and units consisting of a combination thereof having an aggregate initial offering price not to exceed $40 million, of which $11.9 million has previously been utilized. The SEC declared the registration statement effective on July 7, 2008 (file# 333-151935). Management utilized this shelf registration statement to raise additional equity capital by completing a registered direct offering of 2,088,451 shares of the Company's common stock for aggregate gross proceeds of approximately $11.9 million ($11 million approximate net proceeds to the Company) at a per share offering price of $5.68. The offering closed August 8, 2008.

As of March 31, 2009, the Company had 10,000,000 shares of $0.10 par value preferred stock authorized with no shares issued and outstanding.

11. WARRANTS

Warrants outstanding at March 31, 2009 include a 5-year warrant to purchase 75,000 shares of the Company's common stock at an exercise price of $7.00 per share issued to one of the Company's consultants in 2004, which expires in November of 2009. Also outstanding at March 31, 2009, are 5-year warrants to purchase an aggregate of 52,646 shares of the Company's common stock at an exercise price of $4.52 per share, which expire in November of 2009. These 52,646 warrants were converted from Series C preferred stock warrants upon completion of the initial public offering (IPO).

In connection with the Company's IPO which closed on November 2, 2005, the Company issued 150,000 warrants to the underwriters to purchase shares of the Company's common stock at $6.25 per share, which became exercisable on October 28, 2006, and expire November of 2010.

Additionally, as previously discussed, in connection with the Company's two private placement financings the following warrants have been granted and remain outstanding as of March 31, 2009:

Financing that closed November 3, 2006: warrants to purchase up to 346,857 shares of the Company's common stock were issued. These warrants are five-year warrants with an exercise price of $6.70 per share,

Financing that closed August 3, 2007: warrants to purchase up to 500,041 shares of the Company's common stock were issued. The warrants are five-year warrants with an exercise price of $8.00 per share.

No warrants were exercised during the three months ended March 31, 2009 and 2008, respectively.

12. RELATED PARTY CONSULTING AGREEMENTS

The Company has in place the following consulting agreements with related parties:

Consulting Agreement with Breaux Castleman

In June 2003, the Company entered into a consulting agreement with Breaux Castleman, the Chairman of the Company's Board of Directors, for consulting services related to the FDA approval of MelaFind®, and the Company's business and financial strategy. Under this agreement, Mr. Castleman receives compensation for each month of services rendered. The Company made payments, pursuant to this consulting agreement, of $6 in each of the three month periods ended March 31, 2009 and 2008. This consulting agreement is terminable by either party by providing thirty days' prior written notice.

Consulting Agreement with Marek Elbaum, Ph.D.

Effective as of May 31, 2005, the Company retained Marek Elbaum, Ph.D., the Company's founder and former President and Chief Science and Technology Officer, as the Company's Chief Scientist. In consideration of the services to be provided, the Company agreed to pay Dr. Elbaum a monthly fee of $15.

In May of 2007 and effective June 1, 2007, Dr. Elbaum and the Company entered into an amended agreement. Under the terms of the amended agreement, Dr. Elbaum was paid a monthly fee of $9 through January 2009 when the contract terminated.

Consulting Agreement with Robert Friedman, M.D.

The Company has retained the services of Robert Friedman, M.D. as a consultant, medical advisor to the Company's Board of Directors, and in connection with the clinical testing of MelaFind®. In consideration for these services, Dr. Friedman is being paid at a rate of $5 per day.

This consulting agreement continues to automatically renew for successive one-year terms unless either party terminates the agreement at least 30 days prior to its expiration. The Company made payments to Dr. Friedman totaling $17.5 for the three month period ending March 31, 2009, and $12.5 for the three month period ending March 31, 2008.

Consulting Agreement with Gerald Wagner, Ph.D.

Effective April 1, 2006, the Company entered into an amended and restated consulting agreement with Gerald Wagner, Ph.D., a member of the Company's Board of Directors and its former Acting Chief Operating Officer.

Under this amended consulting agreement, the Company agreed to pay Dr. Wagner the annual amount of $180 payable monthly over the term of the agreement. In addition, in connection with his ongoing engagement as a consultant, Dr. Wagner received a stock option grant of 50,000 shares of the Company's common stock which vested upon commencement of the pivotal trial for MelaFind® in January 2007. In addition, on March 24, 2006, Dr Wagner received another stock option grant of 49,500 shares of the Company's common stock which vested immediately.

With the start of the Company's pivotal clinical trial in January 2007, Dr. Wagner transitioned out of his role as the Company's acting Chief Operating Officer and entered into an amended and restated consulting contract with the Company. Under the terms of the amended contract, Dr. Wagner is paid a monthly retainer of $2.5 and will be paid $2.5 for each additional consulting day. This amended agreement will end at the option of Dr. Wagner or the Company at any time, by providing fifteen days' prior written notice, or immediately upon the mutual agreement of the Company and Dr. Wagner. The Company incurred consulting costs pursuant to this agreement of $7.5 in the three month period ended March 31, 2009 compared to $9.4 for the same period a year earlier

13. OTHER INCOME

During March 2007, the Company entered into an agreement with L'Oreal to study and assess the feasibility of using EOS' novel multi-spectral imaging technology for the evaluation and differentiation of pigmented skin lesions of cosmetic importance. EOS has granted L'Oreal an option to take an exclusive license to use EOS technology in the field covered by the research, on terms to be mutually agreed. The option was set to expire on the earlier to occur of six months after the completion of the Feasibility Plan, as defined in the agreement, or August 31, 2008. The Company and L'Oreal mutually agreed to extend the period of this option until June 30, 2009. On December 16, 2008, L'Oreal and the Company agreed on a second amendment to the agreement, for a new three month study. The laboratory and clinical research is being funded by L'Oreal. Pursuant to the agreement, L'Oreal is responsible for all costs and expenses incurred in connection with the feasibility program, and will reimburse EOS for expenses incurred by EOS with respect to the feasibility program. At March 31, 2009, the work to be carried out under the agreement was complete. During the three month periods ended March 31, 2009 and 2008, the Company earned $34 and $10, respectively from L'Oreal as other income under the feasibility program.

During April 2005, the Company discontinued all operations associated with its DIFOTI® product in order to focus its resources and attention on the development and commercialization of MelaFind®. During December 2006, the Company entered into a sale and exclusive licensing agreement with KaVo Dental GmbH ("KaVo"), a leading dental equipment manufacturer, which provides for KaVo to further develop and commercialize DIFOTI®. Beginning in July 2008, KaVo is required to pay to the Company a royalty stream based upon the worldwide aggregate net sales of the licensed product, as defined in the license agreement, or a set minimum. During the year ended December 31, 2008, the Company earned $10 as the pro rated portion of the minimum royalty. For the three months ended March 31, 2009, the Company accrued royalty income of $5.

14. SUBSEQUENT EVENTS

On May 7, 2009, the Company entered into a Committed Equity Financing Facility arrangement, or CEFF, with Kingsbridge Capital Limited (Kingsbridge) in which Kingsbridge has committed to purchase, subject to certain conditions and at the Company's sole discretion, up to the lesser of $45 million or 19.99 % of the Company's outstanding shares at the subscription date, through May 7, 2012. Under the terms of the CEFF, the Company is not obligated to utilize any of the $45 million available under the CEFF and there are no minimum commitments or minimum use penalties. The Company has access, at its discretion, to the funds through the sale of newly-issued restricted shares of the Company's common stock. The funds that can be raised under the CEFF over the three year term will depend on the then-current price for the Company's common stock and the number of shares actually sold. The Company may access capital under the CEFF by providing Kingsbridge with common stock at discounts ranging from 6 to 10 percent of the Volume Weighted Average Price (VWAP); the discount depending on the VWAP of the Company's common stock during the applicable pricing period. In connection with the CEFF, the Company issued a warrant to Kingsbridge to purchase 200,000 shares of the Company's common stock at an exercise price of $11.35 (150% of the 5-day average closing bid price preceding the subscription date) per share. The warrant will become exercisable on November 7, 2009, the six-month anniversary of the date of the Purchase Agreement (May 7, 2009), and will remain exercisable, subject to certain exceptions, for a period of five years thereafter. Pursuant to the CEFF and as a condition to the stock issuance, the Company is obligated to have effective a registration statement with respect to the resale of shares issued pursuant to the CEFF and underlying the warrant. Legal fees of up to $75 and broker fees of $75 will be paid under this agreement. In addition, the Company must pay Kingsbridge $12.5 per quarter for each quarter it does not make a drawdown of at least 2% of the Company's market capitalization.

The Company will file a resale registration statement with the Securities and Exchange Commission on Form S-3 to register up to approximately 3,527,000 of its authorized common shares to be available for purchase under this financing arrangement and issuance under the warrant.

ITEM 2.

ELECTRO-OPTICAL SCIENCES, INC.
MANAGEMENT'S DISCUSSION AND ANALYSIS
OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This management's discussion and analysis of financial condition and results of operations is intended to provide information to help you better understand and evaluate our financial condition and results of operations. We recommend that you read this section in conjunction with our unaudited condensed financial statements and accompanying notes included under Part I, Item 1 of this Quarterly Report and our financial statements and accompanying notes in our Annual Report on Form 10-K for the year ended December 31, 2008.

This quarterly report on Form 10-Q, including the following discussion and analysis of financial condition and results of operations, contains forward-looking statements that you should read in conjunction with the financial statements and notes to financial statements that we have included elsewhere in this report. These statements are based on our current expectations, assumptions, estimates and projections about our business and our industry, and involve known and unknown risks, uncertainties, and other factors that may cause our or our industry's results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied in, or contemplated by, the forward-looking statements. Words such as "believe", "anticipate," "expect," "intend," "plan," "will," "may," "should," "estimate," "predict," "potential," "continue," or the negative of such terms or other similar expressions, identify forward-looking statements. Our actual results and the timing of events may differ significantly from the results discussed in the forward-looking statements, and you should not place undue reliance on these statements. Factors that might cause such a difference include those discussed below under the heading "Risk Factors," as well as those discussed elsewhere in this quarterly report on Form 10-Q. We disclaim any intent or obligation to update any forward-looking statements as a result of developments occurring after the period covered by this report or otherwise.

Overview

We are a medical device company focused on the design and development of a non-invasive, point-of-care instrument to assist in the early diagnosis of melanoma. Our flagship product, MelaFind®, features a hand-held imaging device that emits multiple wavelengths of light to capture images of suspicious pigmented skin lesions and extract data. We currently do not have any commercialized products or any significant source of revenue.

We commenced operations in December 1989 as a New York corporation and re-incorporated as a Delaware corporation in September 1997. Since our inception, we have generated significant losses. As of March 31, 2009, we had an accumulated deficit of $64.8 million. We expect to continue to spend significant amounts on the development of MelaFind®.

Our revenue for the foreseeable future will depend on the commercialization of MelaFind® and may vary substantially from year to year and quarter to quarter. Our operating expenses may also vary substantially from year to year and quarter to quarter based on the timing of activities and approvals. In 2008, the data accrual phase of the MelaFind® pivotal trial was completed and the image processing classification algorithms were finalized. In the first quarter of 2009, the databases underwent third-party statistical validation and the classification algorithms underwent software verification and validation.

On February 13, 2009, the Company announced that a third-party, independent bio-statistician had provided positive top line results from the MelaFind® pivotal clinical trial. This blinded study was conducted at seven clinical sites and included 1,831 pigmented skin lesions from 1,383 patients. We are working to complete our PMA application, which includes the final study reports, and expect to file it with the FDA during the second quarter of 2009.

We believe that period-to-period comparisons of our results of operations may not be meaningful and should not be relied on as indicative of our future performance.

Liquidity and Capital Resources

On July 31, 2007, the Company entered into a securities purchase agreement and a registration rights agreement with certain accredited investors for the private placement of 2,000,178 shares of the Company's common stock and warrants to purchase up to 500,041 shares of the Company's common stock for aggregate gross proceeds of approximately $11.5 million and net proceeds of approximately $10.7 million. This transaction closed August 3, 2007.

On June 26, 2008, the Company filed a Form S-3 shelf registration statement for an indeterminate number of shares of common stock, warrants to purchase shares of common stock and units consisting of a combination thereof having an aggregate initial offering price not to exceed $40 million. The SEC declared the registration statement effective on July 7, 2008 (file# 333-151935). Management utilized this shelf registration statement to raise additional equity capital by completing a registered direct offering of 2,088,451 shares of the Company's common stock for aggregate gross proceeds of approximately $11.9 million ($11 million approximate net proceeds to the Company) at a per share offering price of $5.68. The offering closed August 8, 2008.

On May 7, 2009, the Company entered into a Committed Equity Financing Facility arrangement, or CEFF, with Kingsbridge Capital Limited (Kingsbridge) in which Kingsbridge has committed to purchase, subject to certain conditions and at the Company's sole discretion, up to the lesser of $45 million or 19.99 % of the Company's outstanding shares at the subscription date, through May 7, 2012. Under the terms of the CEFF, the Company is not obligated to utilize any of the $45 million available under the CEFF and there are no minimum commitments or minimum use penalties. The Company has access, at its discretion, to the funds through the sale of newly-issued restricted shares of the Company's common stock. The funds that can be raised under the CEFF over the three year term will depend on the then-current price for the Company's common stock and the number of shares actually sold. The Company may access capital under the CEFF by providing Kingsbridge with common stock at discounts ranging from 6 to 10 percent of the Volume Weighted Average Price (VWAP); the discount depending on the VWAP of the Company's common stock during the applicable pricing period. In connection with the CEFF, the Company issued a warrant to Kingsbridge to purchase 200,000 shares of the Company's common stock at an exercise price of $11.35 (150% of the 5-day average closing bid price preceding the subscription date) per share. The warrant will become exercisable on November 7, 2009, the six-month anniversary of the date of the Purchase Agreement (May 7, 2009), and will remain exercisable, subject to certain exceptions, for a period of five years thereafter. Pursuant to the CEFF and as a condition to the stock issuance, the Company is obligated to have effective a registration statement with respect to the resale of shares issued pursuant to the CEFF and underlying the warrant. Legal fees of up to $75 and broker fees of $75 will be paid under this agreement. In addition, the Company must pay Kingsbridge $12.5 per quarter for each quarter it does not make a drawdown of at least 2% of the Company's market capitalization.

The Company will file a resale registration statement with the Securities and Exchange Commission on Form S-3 to register up to approximately 3,527,000 of its authorized common shares to be available for purchase under this financing arrangement and issuance under the warrant.

Most of our expenditures to date have been for research and development activities and general and administrative expenses. Research and development expenses represent costs incurred for product development, clinical trials, activities related to regulatory filings, and manufacturing development efforts. We expense all of our research and development costs as they are incurred.

To date, we have not borrowed (other than by issuing convertible notes, all of which have been converted into equity) or financed our operations through equipment leases, financing loans or other debt instruments.

As of March 31, 2009, the Company's total of cash, cash equivalents and marketable securities was $11.6 million. The Company will require additional funds to achieve significant commercialization of MelaFind® (See NOTE 14). However, there can be no assurances that the Company will be able to raise additional financing in the future. Additional funds may not become available on acceptable terms, and there can be no assurance that any additional funding that the Company does obtain will be sufficient to meet the Company's needs in the long term. In the event that the Company is unable to raise additional funds, the Company has the ability and intent to reduce certain discretionary expenditures. Management believes these actions, if required, will allow the Company to fund anticipated levels of operations into the second quarter of 2010.

Our cash and cash equivalents at March 31, 2009 are liquid investments in money market accounts and deposits with a commercial bank, which are held in amounts that substantially exceed FDIC limits.

Cash Flows from Operating Activities (in thousands)

Net cash used in operations was $3,818 for the three months ended March 31, 2009. For the corresponding period in 2008, net cash used in operations was $3,499. In both periods, cash used in operations was attributable to net losses after an adjustment for non-cash charges related to depreciation/amortization and share-based compensation, and other changes in operating assets and liabilities.

Cash Flows from Investing Activities

For the three months ended March 31, 2009, there was no net cash provided by or used in our investing activities. For the corresponding period in 2008, net cash used in our investing activities was $203 and was principally related to the redemption of marketable securities offset by the purchase of manufacturing related equipment in support of MelaFind®.

Cash Flows from Financing Activities

For the three months ended March 31, 2009, net cash provided by financing activities was $2, representing the exercise of options. For the three months ended March 31, 2008, there was no cash provided by or used in financing activities.

Operating Capital and Capital Expenditure Requirements

We face certain risks and uncertainties, which are present in many emerging medical device companies. At March 31, 2009, we had an accumulated deficit of $64.8 million. To date, we have not commercialized our principal product, MelaFind®. We anticipate that we will continue to incur net losses for the foreseeable future as we pursue the regulatory approvals for MelaFind®, continue to develop the MelaFind® system, expand our corporate infrastructure, and prepare for the potential commercial launch of MelaFind®. We do not expect to generate significant product revenue until we successfully obtain PMA approval for and begin selling MelaFind®.

If additional funds are raised through the issuance of debt securities, these securities could have rights senior to those associated with our common stock and could contain covenants that would restrict our operations. If we are unable to obtain additional financing, we may be required to reduce the scope of, delay or eliminate some or all of planned product research and development and commercialization activities, which could harm our business.

Because of the numerous risks and uncertainties associated with the development of medical devices such as MelaFind®, we are unable to estimate the exact amounts of capital outlays and operating expenditures associated with our current and anticipated clinical trials. Our future funding requirements will depend on many factors, including, but not limited to:

- The schedule, costs, and results of our clinical trials;
- The success of our research and development efforts;
- The costs and timing of regulatory approval;
- Reimbursement amounts for the use of MelaFind® that we are able to obtain from Medicare and third party payers, or the amount of direct payments we are able to obtain from patients and/or physicians utilizing MelaFind®;
- The cost of commercialization activities, including product marketing and building a domestic direct sales force;
- The emergence of competing or complementary technological developments;
- The costs of filing, prosecuting, defending and enforcing any patent claims and other rights, including litigation costs and the results of such litigation;
- The costs involved in defending any patent infringement actions brought against us by third parties; and
- Our ability to establish and maintain any collaborative, licensing or other arrangements, and the terms and timing of any such arrangements.

Contractual Obligations (in thousands)

The following table summarizes our outstanding contractual obligations as of March 31, 2009, and the effect those obligations are expected to have on our liquidity and cash flows in future periods:

	Total	Less than 1 year	1-3 years	4-5 years	More than 5 years
Operating leases	$376	$221	$155	$—	$—

The indicated operating leases are non-cancelable operating leases for space expiring June 2009 and January 2011. The lease on 5,000 square feet of office and laboratory space expires in June 2009. The lease on 2,800 square feet of office space and the lease for an additional 2,500 square feet of office space adjacent to our existing laboratory location expire in January 2011.

Results of Operations (in thousands)

Through the first three months of 2009, the Company, announced positive top line results from the pivotal clinical trial, intensified efforts to address the regulatory requirements of the PMA submission to the FDA, continued the development of processes and equipment to allow for the efficient manufacturing of MelaFind® in quantities necessary for commercialization, and focused on the American Academy of Dermatology (“AAD”) Conference in San Francisco.

Three Months Ended March 31, 2009 Compared to Three Months Ended March 31, 2008

Research and Development Expense

Research and development expense overall decreased 17% for the three month period ended March 31, 2009 compared to the same period ended March 31, 2008. The R&D costs were refocused from clinical to regulatory principally attributable to:

- clinical studies costs - in the first three months of 2009 the number of study sites was decreased from the same period in 2008 when the pivotal clinical trial data acquisition phase was fully engaged. Additionally, activity in the confirmation of data was likewise significantly curtailed with the completion of the pivotal clinical trial. Clinical studies costs decreased ($617).
- quality and regulatory -costs were increased in the first quarter of 2009 as we moved closer to PMA submission making extensive use of consultants to assist in this process. In the first quarter of 2008, we were not near the completion of the pivotal clinical trial process. Regulatory costs increased $331.
- development activities -in the first three months of 2009, we experienced a significant decrease in design costs and process development for MelaFind® as the product had become defined and finalized through the more extensive development efforts of 2008. Development costs decreased ($290).

General and Administrative Expense

General and administrative expenses consist primarily of salaries and related expenses of general corporate activities, certain costs associated with our efforts to obtain PMA approval for MelaFind® and development of a commercial infrastructure to market and sell MelaFind®.

General and Administrative expense for the three months ended March 31, 2009 increased 7% as compared to the same period ended March 31, 2008. This increase is reflective of

- pre-marketing activities being accelerated during the first quarter of 2009 following announcement of positive top-line results from the pivotal clinical trial. There were limited pre-marketing efforts during the three month period ended March 31, 2008, while the data acquisition phase of the pivotal clinical trial continued. Pre-marketing expenses increased $104.
- increased legal costs primarily associated with disclosure requirements and other activities requiring legal assistance and advice surrounding the release of top-line results from our pivotal clinical trial. Legal fees increased $97.
- other administrative costs were reduced in the first quarter of 2009 primarily due to the fact that no discretionary bonuses were paid in 2009 as had been paid in 2008. Other administrative costs decreased ($104)

Interest Income/Expense

Interest income for the three months ended March 31, 2009 was 86% lower than the comparable period in 2008. The decrease is primarily related to the lower interest rates available for investment of our cash balances as well as our average cash balance being approximately $5.4 million lower for the three months ended March 31, 2009, compared to the same period a year earlier.

Other Income

During the three month period ended March 31, 2009, the Company’s other income included $34 from L’Oreal as an offset to expenses the Company incurred under our joint feasibility program, and $7 from KaVo for product support of the discontinued dental product line the Company sold to KaVo in 2006. There was $26 earned in other income, including $10 from L’Oreal as an offset to expenses and $10 from KaVo for Difoti product support during the three months ended March 31, 2008.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements as well as the reported revenues and expenses during the reporting periods. On an ongoing basis, we evaluate our judgments related to accounting estimates. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We believe that the following accounting policies and significant judgments and estimates relating to revenue recognition, stock-based compensation charges, and accrued expenses are most critical to aid you in fully understanding and evaluating our reported financial results.

Revenue Recognition

We currently do not have any commercialized products or any source of revenue.

Stock-Based Compensation

We record compensation expense associated with stock options and other forms of equity compensation in accordance with Statement of Financial Accounting Standards No. 123 (revised 2004), *Share-Based Payment* ("SFAS 123R"), as interpreted by SEC Staff Accounting Bulletins No. 107 and No.110. A compensation charge is recorded when it is probable that performance conditions will be satisfied. The probability of vesting is updated at each reporting period and compensation is adjusted via a cumulative catch-up adjustment or prospectively depending on the nature of the change.

We have also granted to certain employees stock options that vest with the attainment of development milestones not under the Company's control. Upon the attainment of the relevant development milestones, there will be a significant compensation charge based on the fair value of such options on the date granted.

Options or warrants issued to non-employees for goods or services are recorded at fair value and accounted for in accordance with Emerging Issues Task Force Issue No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services* ("EITF 96-18").

Accrued Expenses

As part of the process of preparing financial statements, we are required to estimate accrued expenses. This process involves identifying services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for such service where we have not been invoiced or otherwise notified of the actual cost. Examples of estimated accrued expenses include:

- professional service fees;
- contract clinical service fees;
- fees paid to contract manufacturers in conjunction with the production of clinical components or materials; and
- fees paid to third party data collection organizations and investigators in conjunction with the clinical trials.

In connection with such service fees, our estimates are most affected by our projections of the timing of services provided relative to the actual level of services incurred by such service providers. The majority of our service providers invoice us monthly in arrears for services performed. In the event that we do not identify certain costs that have begun to be incurred or we are under or over our estimate of the level of services performed or the costs of such services, our actual expenses could differ from such estimates. The date on which certain services commence, the level of services performed on or before a given date, and the cost of such services are often subjective determinations. We make these judgments based upon the facts and circumstances known to us in accordance with GAAP. This is done as of each balance sheet date in our financial statements.

Related Party Transactions

On March 24, 2006, the Company entered into an amended and restated consulting agreement with Gerald Wagner, Ph.D. which became effective as of April 1, 2006. In connection with his ongoing engagement as a consultant, Dr. Wagner received a stock option grant of 50,000 shares of the Company's common stock which vested upon commencement of the pivotal clinical trial for MelaFind® at the end of January 2007. As Dr. Wagner is a consultant to the Company, we utilize EITF 96-18 to account for this grant. As the pivotal clinical trial began at the end of January 2007, the Company recognized $140 in compensation expense for this grant.

In addition, on March 24, 2006, Dr. Wagner received another stock option grant of 49,500 shares of the Company's common stock which vested immediately. The Company recorded a $162 compensation charge during the first quarter ended March 31, 2006.

The exercise price for these two stock option grants is the closing price per share of the Company's common stock on the option grant date.

With the start of our pivotal clinical trial, Dr. Wagner transitioned out of his role as our Acting Chief Operating Officer and signed an amendment to his amended and restated consulting contract with the Company. Under the terms of the amended contract, Dr. Wagner is paid a monthly retainer of $2.5 and $2.5 for each additional consulting day.

This amended agreement will end at the option of Dr. Wagner or the Company at any time, by providing fifteen days' prior written notice, or immediately upon the mutual agreement of the Company and Dr. Wagner.

For a more detailed description of our related party transactions, see our financial statements and the related notes to our financial statements including Note 12.

Off-Balance Sheet Arrangements

We do not currently have, nor have we ever had, any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. In addition, we do not engage in trading activities involving non-exchange traded contracts. As such, we are not materially exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in these relationships.

Recently Adopted Accounting Pronouncements

In June 2008, the FASB issued Staff Position EITF 03-6-1, "Determining Whether Instruments Granted in Share-Based Payment Transactions Are Participating Securities (FSP EITF 03-6-1"), which is effective for financial statements issued for fiscal years beginning after December 15, 2008. FSP EITF 03-6-1 clarifies that share-based payment awards that entitle holders to receive non-forfeitable dividends before they vest will be considered participating securities and included in the basic earning per share calculation. The adoption of FSP EITF 03-6-1 did not have any effect on the Company's financial statements.

On April 1, 2009, the FASB issued FASB Staff Position (FSP) FAS 141(R) -1, *Accounting for Assets Acquired and Liabilities Assumed in a Business Combination That Arise from Contingencies*. This FSP provides additional guidance and disclosure requirements regarding the recognition and measurement of contingent assets acquired and contingent liabilities assumed in a business combination where the fair value of the contingent assets and liabilities cannot be determined as of the acquisition date. This FSP is effective for acquisitions occurring after January 1. 2009. The adoption of this FSP did not have any impact on the Company, and its future impact will be dependent upon the specific terms of future business combinations, if any.

In April 2008, the FASB issued FSP FAS 142-3, "Determination of the Useful Life of Intangible Assets ("FSP FAS 142-3"). FSP FAS 142-3 amends the factors an entity should consider in developing renewal or extension assumptions used in determining the useful life of recognized intangible assets under SFAS No. 142, "Goodwill and Other Intangible Assets". This guidance for determining the useful life of a recognized intangible asset applies prospectively to intangible assets acquired individually or with a group of other assets in either an asset acquisition or business combination. FSP FAS 142-3 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2008, earlier adoption is prohibited. The adoption of FSP FAS 142-3 did not have any effect on the Company's financial statements.

In December 2007, the FASB issued SFAS No. 160, Non-controlling Interests in Consolidated Financial Statements—an amendment of ARB No. 51. This Statement amends ARB 51 to establish accounting and reporting standards for the non-controlling interest in a subsidiary and for the deconsolidation of a subsidiary. It clarifies that a non-controlling interest in a subsidiary is an ownership interest in the consolidated entity that should be reported as equity in the consolidated financial statements. In addition to the amendments to ARB 51, this Statement amends FASB Statement No. 128, Earnings per Share; so that earnings-per-share data will continue to be calculated the same way those data were calculated before this Statement was issued. This Statement is effective for fiscal years, and interim periods within those fiscal years, beginning on or after December 15, 2008. The adoption of this pronouncement did not have any impact on the Company's financial statements.

In March 2008, the FASB issued SFAS No. 161 "Disclosures about Derivative Instruments and Hedging Activities" ("SFAS 161"). This new standard enhances disclosure requirements for derivative instruments in order to provide users of financial statements with an enhanced understanding of (i) how and why an entity uses derivative instruments, (ii) how derivative instruments and related hedged items are accounted for under SFAS No. 133 "Accounting for Derivative Instruments and Hedging Activities" and its related interpretations, and (iii) how derivative instruments and related hedged items affect an entity's financial position, financial performance, and cash flows. SFAS 161 is to be applied prospectively for the first annual reporting period beginning on or after November 15, 2008. The Company believes that the adoption of SFAS 161 did not have any impact on the Company's financial statement disclosures since the Company does not have any derivative instruments.

Recent Accounting Pronouncements

On April 9, 2009, the FASB simultaneously issued the following three FSPs:

- FSP FAS 157-4, *Determining Fair Value When the Volume and Level of Activity for the Asset or Liability Have Significantly Decreased and Identifying Transactions That Are Not Orderly*, provides additional guidance to companies for determining fair values of financial instruments for which there is no active market or quoted prices may represent distressed transactions. The guidance includes a reaffirmation of the need to use judgment in certain circumstances.
- FSP FAS 107-1 and APB 28-1, *Interim Disclosures about Fair Value of Financial Instruments*, requires companies to provide additional fair value information for certain financial instruments in interim financial statements, similar to what is currently required to be disclosed on an annual basis

- FSP FAS 115-2, FAS 124-2, and EITF 99-20-2, *Recognition and Presentation of Other-Than-Temporary Impairments*, amends the existing guidance regarding impairments for investments in debt securities. Specifically, it changes how companies determine if an impairment is considered to be other-than-temporary and the related accounting. This standard also provides for increased disclosures.

These FSPs apply to both interim and annual periods and will be effective for us beginning April 1, 2009. We have evaluated these standards and believe they will have no impact on our financial condition and results of operations.

ITEM 3.

Quantitative and Qualitative Disclosures about Market Risk

Our exposure to market risk is confined to our cash, cash equivalents, and short-term investments. We invest in high-quality financial instruments, primarily money market funds, with the average effective duration of the portfolio within one year which we believe are subject to limited credit risk. We currently do not hedge interest rate exposure. Due to the short-term nature of our investments, we do not believe that we have any material exposure to interest rate risk arising from our investments. The Company is exposed to credit risks in the event of default by the financial institutions or issuers of investments in excess of FDIC insured limits. The Company performs periodic evaluations of the relative credit standing of these financial institutions and limits the amount of credit exposure with any institution,

ITEM 4.

Controls and Procedures

Evaluation of disclosure controls and procedures

Based on their evaluation as of March 31, 2009, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended, were sufficiently effective to ensure that the information required to be disclosed by us in this Quarterly Report on Form 10-Q was recorded, processed, summarized and reported within the time periods specified in the SEC's rules and Form l0-Q, and that such information was accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Change in internal control over financial reporting

There were no changes in our internal control over financial reporting during the quarter ended March 31, 2009 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on the effectiveness of controls

Our disclosure controls and procedures are designed to provide reasonable, not absolute, assurance that the objectives of our disclosure control system are met. Because of inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues, if any, within a company have been detected.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

We are not currently subject to any material legal proceedings, nor, to our knowledge, is any material legal proceeding threatened against us. From time to time, we may be a party to certain legal proceedings, incidental to the normal course of our business.

Item 1A. Risk Factors

Our business and operations entail a variety of serious risks and uncertainties, including those described in Item 1A of our Form 10-K for the year ended December 31, 2008. In addition, the following risk factors have changed during the three months ended March 31, 2009:

We have incurred losses for a number of years, and anticipate that we will incur continued losses for the foreseeable future.

We began operations in December 1989. At that time, we provided research services, mostly to US government agencies, on classified projects. We have financed our operations since 1999 primarily through the sale of our equity securities and have devoted substantially all of our resources to research and development relating to MelaFind®. Our net loss for the three months ended March 31, 2009 was approximately $4.0 million and as of March 31, 2009, we had an accumulated deficit of approximately $64.8 million. Our research and development expenses may continue to increase in connection with our clinical trials and other development activities related to MelaFind®. If we receive PMA approval for MelaFind® from the FDA, we expect to incur significant sales and marketing expenses, which will require additional funding, and manufacturing expenses. Additionally, our general and administrative expenses have also increased due to the additional operational and regulatory responsibilities applicable to public companies. As a result, we expect to continue to incur significant and increasing operating losses for the foreseeable future. These losses, among other things, have had and will continue to have an adverse effect on our stockholders' equity.

We may be unable to complete the development and commence commercialization of MelaFind® or other products without additional funding, and we will not be able to achieve significant commercialization without additional funding.

As of March 31, 2009, we had $11.2 million in cash and cash equivalents and $0.4 million in marketable securities. Our operations have consumed substantial amounts of cash for each of the last eight years. The Company will require additional funds to pursue regulatory approvals and to achieve significant commercialization of MelaFind®. However, there can be no assurances that the Company will be able to raise additional capital in the future. Additional funds may not become available on acceptable terms, and there can be no assurance that any additional funding that the Company does obtain will be sufficient to meet the Company's needs in the long term.

Any additional financing may be dilutive to stockholders, or may require us to grant a lender a security interest in our assets. The amount of funding we will need will depend on many factors, including:

- the schedule, costs, and results of our clinical trials;
- the success of our research and development efforts;
- the costs and timing of regulatory approval;
- reimbursement amounts for the use of MelaFind® that we are able to obtain from Medicare and third-party payers, or the amount of direct payments we are able to obtain from patients and/or physicians utilizing MelaFind®;

- the cost of commercialization activities, including product marketing and building a domestic direct sales force;
- the emergence of competing or complementary technological developments;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other rights, including litigation costs and the results of such litigation;
- the costs involved in defending any patent infringement actions brought against us by third parties; and
- our ability to establish and maintain any collaborative, licensing or other arrangements, and the terms and timing of any such arrangements.

If we are unable to obtain adequate financing on a timely basis, we may be required to significantly curtail or cease one or more of our development and marketing programs. We could be required to seek funds through arrangements with collaborators or others that may require us to relinquish rights to some of our technologies, product candidates or products that we would otherwise pursue on our own. We also may have to reduce marketing, customer support and other resources devoted to our products. If we raise additional funds by issuing equity securities, our then-existing stockholders will experience ownership dilution, could experience declines in our share price and the terms of any new equity securities may have preferences over our common stock.

Our stock price is likely to be volatile, meaning purchasers of our common stock could incur substantial losses.

Our stock price is likely to be volatile. Between October 28, 2005 (the date of our initial public offering) and March 31, 2009, our stock price has ranged from $2.29 to $9.99 per share. The stock market in general and the market for medical technology companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. The following factors, in addition to other risk factors described in this section and general market and economic conditions, may have a significant impact on the market price of our common stock:

- results of our research and development efforts and our clinical trials;
- the timing of regulatory approval for our products;
- failure of any of our products, if approved, to achieve commercial success;
- the announcement of new products or product enhancements by us or our competitors;
- regulatory developments in the US and foreign countries;
- ability to manufacture our products to commercial standards;
- developments concerning our clinical collaborators, suppliers or marketing partners;
- changes in financial estimates or recommendations by securities analysts;
- public concern over our products;
- developments or disputes concerning patents or other intellectual property rights;
- product liability claims and litigation against us or our competitors;
- the departure of key personnel;

- the strength of our balance sheet;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of and third-party reimbursement in the US and other countries;
- changes in accounting principles or practices;
- general economic, industry and market conditions; and
- future sales of our common stock.

A decline in the market price of our common stock could cause you to lose some or all of your investment and may adversely impact our ability to attract and retain employees and raise capital. In addition, stockholders may initiate securities class action lawsuits if the market price of our stock drops significantly. Whether or not meritorious, litigation brought against us could result in substantial costs and could divert the time and attention of our management. Our insurance to cover claims of this sort, if brought, may not be adequate, or in certain circumstances, not provide coverage.

If our directors, executive officers, and principal stockholders choose to act together, they may have the ability to influence all matters submitted to stockholders for approval.

As of March 31, 2009, our directors, executive officers, holders of more than 5% of our common stock, and their affiliates in the aggregate, beneficially owned approximately 16% of our outstanding common stock. As a result, these stockholders, subject to any fiduciary duties owed to our other stockholders under Delaware law, could be able to exercise a controlling influence over matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions, and will have significant control over our management and policies. Some of these persons or entities may have interests that are different from yours. For example, these stockholders may support proposals and actions with which you may disagree or which are not in your interests. The concentration of ownership could delay or prevent a change in control of our company or otherwise discourage a potential acquirer from attempting to obtain control of our company, which in turn could reduce the price of our common stock. In addition, these stockholders, some of whom have representatives sitting on our Board of Directors, could use their voting influence to maintain our existing management and directors in office, delay or prevent changes of control of our company, or support or reject other management and board proposals that are subject to stockholder approval, such as amendments to our employee stock plans and approvals of significant financing transactions.

Results could be impacted by the effects of, and changes in, world-wide economic and capital market conditions

The Company’s business may be adversely affected by factors in the United States and other countries that are beyond its control, such as disruptions in the financial markets or downturns in economic activity. The current world-wide economic conditions could have an adverse impact on the availability and cost of capital, interest rates, tax rates, or regulations.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

On May 7, 2009, the Company entered into a Committed Equity Financing Facility arrangement, or CEFF, with Kingsbridge Capital Limited (Kingsbridge) in which Kingsbridge has committed to purchase, subject to certain conditions and at the Company's sole discretion, up to the lesser of $45 million or 19.99 % of the Company's outstanding shares at the subscription date, through May 7, 2012. Under the terms of the CEFF, the Company is not obligated to utilize any of the $45 million available under the CEFF and there are no minimum commitments or minimum use penalties. The Company has access, at its discretion, to the funds through the sale of newly-issued restricted shares of the Company's common stock. The funds that can be raised under the CEFF over the three year term will depend on the then-current price for the Company's common stock and the number of shares actually sold. The Company may access capital under the CEFF by providing Kingsbridge with common stock at discounts ranging from 6 to 10 percent of the Volume Weighted Average Price (VWAP); the discount depending on the VWAP of the Company's common stock during the applicable pricing period. In connection with the CEFF, the Company issued a warrant to Kingsbridge to purchase 200,000 shares of the Company's common stock at an exercise price of $11.35 (150% of the 5-day average closing bid price preceding the subscription date) per share. The warrant will become exercisable on November 7, 2009, the six-month anniversary of the date of the Purchase Agreement (May 7, 2009), and will remain exercisable, subject to certain exceptions, for a period of five years thereafter. Pursuant to the CEFF and as a condition to the stock issuance, the Company is obligated to have effective a registration statement with respect to the resale of shares issued pursuant to the CEFF and underlying the warrant. Legal fees of up to $75 and broker fees of $75 will be paid under this agreement. In addition, the Company must pay Kingsbridge $12.5 per quarter for each quarter it does not make a drawdown of at least 2% of the Company's market capitalization.

The Company will file a resale registration statement with the Securities and Exchange Commission on Form S-3 to register up to approximately 3,527,000 of its authorized common shares to be available for purchase under this financing arrangement and issuance under the warrant.

In issuing such warrant and entering into the committed equity financing facility with Kingsbridge, we relied upon Section 4(2) of the Securities Act of 1933, as amended, as a transaction by an issuer not involving any public offering and Regulation D of the Securities Act. In connection with such transaction, we made certain inquiries of Kingsbridge to establish that our sales of securities qualified for such exemption from the registration requirements under Section 4(2) of the Securities Act .

Item 3. Defaults Upon Senior Securities.

Not applicable.

Item 4. Submission of Matters to a Vote of Security Holders.

Not applicable.

Item 5. Other Information

(a) Not applicable

(b) Not applicable

Item 6. Exhibits

Exhibit Number	Exhibit Title
31.1#	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended.
31.2#	Certification of Chief Financial Officer Pursuant to Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended.
32.1#	Certification of Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

Filed herewith

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ELECTRO-OPTICAL SCIENCES, INC.

By: /s/ Richard I. Steinhart
Richard I. Steinhart
Vice President and Chief Financial Officer
(Principal Accounting and Financial Officer)

Date: May 11, 2009

EXHIBIT INDEX

Exhibit No.	Description
31.1	Certification by the Chief Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended.
31.2	Certification by the Chief Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended.
32.1	Certification Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

CERTIFICATION BY THE CHIEF EXECUTIVE OFFICER PURSUANT TO RULE 13A-14(A) or RULE 15D-14(A) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Joseph V. Gulfo, certify that:

1. I have reviewed this report on Form 10-Q of Electro-Optical Sciences, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):

   a) all significant deficiencies and material weaknesses in the design or operations of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) any fraud whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 11, 2009

/s/ Joseph V. Gulfo, M.D.
Joseph V. Gulfo, M.D.
President and Chief Executive Officer
(Principal Executive Officer)

CERTIFICATION BY THE CHIEF FINANCIAL OFFICER PURSUANT TO RULE 13A-14(A) or RULE 15D-14(A) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Richard I. Steinhart, certify that:

1. I have reviewed this report on Form 10-Q of Electro-Optical Sciences, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors (or persons performing the equivalent functions):

   a) all significant deficiencies and material weaknesses in the design or operations of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) any fraud whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 11, 2009

/s/ Richard I. Steinhart
Richard I. Steinhart
Vice President and Chief Financial Officer
(Principal Accounting and Financial Officer)

ELECTRO-OPTICAL SCIENCES, INC.
CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Each of the undersigned officers of Electro-Optical Sciences, Inc. (the "Company") hereby certifies to his knowledge that the Company's quarterly report on Form 10-Q for the period ended March 31, 2009 (the "Report"), as filed with the Securities and Exchange Commission on the date hereof, fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended, and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Joseph V. Gulfo
Joseph V. Gulfo
President and Chief Executive Officer
(Principal Executive Officer)
May 11, 2009

/s/ Richard I. Steinhart
Richard I. Steinhart
Vice President & Chief Financial Officer
(Principal Accounting and Financial Officer)
May 11, 2009

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* A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to Electro-Optical Sciences, Inc. and will be retained by Electro-Optical Sciences, Inc. and furnished to the Securities and Exchange Commission or its staff upon request. This written statement accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission, and will not be incorporated by reference into any filing of Electro-Optical Sciences, Inc. under the Securities Act of 1933 or the Securities Exchange Act of 1934, irrespective of any general incorporation language contained in such filing.