

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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of The Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): June 4, 2009

Electro-Optical Sciences, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

000-51481
(Commission
File Number)

13-3986004
(IRS Employer
Identification No.)

3 West Main Street, Suite 201,
Irvington, New York
(Address of principal executive offices)

10533
(Zip Code)

Registrant's telephone number, including area code **(914) 591-3783**

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instructions A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
 - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
 - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
 - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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Item 8.01 — Other Events

On June 4, 2009, the Registrant issued a press release announcing the submission to the U.S. Food and Drug Administration of its premarket approval application for MelaFind®. A copy of the press release is attached as Exhibit 99.1 to this report and is incorporated herein by reference.

Item 9.01 — Financial Statements and Exhibits

(d) Exhibits.

EXHIBIT NO.	DESCRIPTION
99.1	Press Release of the Registrant, dated June 4, 2009, titled “Electro-Optical Sciences Submits MelaFind® Pre-Market Approval Application to FDA”

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 hereunto duly authorized.

Electro-Optical Sciences, Inc.

Date: June 4, 2009

By: /s/ Richard I. Steinhart
Chief Financial Officer
(Principal Financial Officer)

EXHIBIT INDEX

EXHIBIT NO.	DESCRIPTION
99.1	Press Release of the Registrant, dated June 4, 2009, titled “Electro-Optical Sciences Submits MelaFind® Pre-Market Approval Application to FDA”



Electro-Optical Sciences Submits MelaFind® Pre-Market Approval Application to FDA

IRVINGTON, NY (June 4, 2009) — Electro-Optical Sciences, Inc. (“EOS”) (NASDAQ: MELA) today announced the submission to the United States Food and Drug Administration (FDA) of its Premarket Approval (PMA) application for MelaFind®, a non-invasive, point-of-care instrument to assist in the early diagnosis of melanoma, the leading cause of death from skin cancer.

Positive top line data from the MelaFind pivotal study, the largest prospective clinical study ever conducted in melanoma detection, were announced in February and subsequently presented at several major international dermatology meetings in March and May of this year. The company’s final analysis of the data demonstrated that for all subgroups analyzed, the sensitivity of MelaFind was greater than 95% (lower confidence bound) and MelaFind specificity was statistically significantly higher than that of study clinicians. As announced previously, the FDA has granted Expedited Review for the MelaFind PMA.

“We believe the final results of the MelaFind pivotal study met the study endpoints and that the pivotal trial satisfied the specifications of the Protocol Agreement with the FDA under which it was conducted,” said Joseph V. Gulfo, MD, President & CEO. “We look forward to working with the FDA in the review of the MelaFind application.”

About Melanoma

Melanoma is the deadliest form of skin cancer, responsible for approximately 80% of skin cancer fatalities. The melanoma rate has continued to increase with an estimated 120,000 new cases projected in 2009. A recent National Cancer Institute report published in the July 10, 2008 online edition of the Journal of Investigative Dermatology indicates that annual incidence of melanoma among young adult Caucasian women rose 50% between 1980 and 2004. Melanoma is the most common cancer in women age 25 to 29 and the number one cancer killer of women age 30 to 35. Although no cure is currently available for advanced-stage melanoma, if caught early, melanoma is virtually 100% curable.

About Electro-Optical Sciences

Electro-Optical Sciences is a medical technology company focused on developing MelaFind, a non-invasive and objective computer vision system intended to aid in the early detection of melanoma. EOS designed MelaFind to assist in the evaluation of pigmented skin lesions, including atypical moles, which have one or more clinical or historical characteristics of melanoma, before a final decision to biopsy has been

rendered. MelaFind acquires and displays multi-spectral (from blue to near infrared) digital images of pigmented skin lesions and uses automatic image analysis and statistical pattern recognition to help identify lesions to be considered for biopsy to rule out melanoma.

For more information on EOS, visit www.eosciences.com.

Safe Harbor

This press release includes “forward-looking statements” within the meaning of the Securities Litigation Reform Act of 1995. These statements include but are not limited to our plans, objectives, expectations and intentions and other statements that contain words such as “expects,” “contemplates,” “anticipates,” “plans,” “intends,” “believes” and variations of such words or similar expressions that predict or indicate future events or trends, or that do not relate to historical matters. These statements are based on our current beliefs or expectations and are inherently subject to significant uncertainties and changes in circumstances, many of which are beyond our control. There can be no assurance that our beliefs or expectations will be achieved. Actual results may differ materially from our beliefs or expectations due to economic, business, competitive, market and regulatory factors.

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