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

April 25, 2007

Date of Report (date of earliest event reported)

Nanometrics Incorporated

(Exact name of Registrant as specified in charter)

Delaware (State or other jurisdiction

0-13470 (Commission File Number) 94-2276314 (I. R. S. Employer

of incorporation)

1550 Buckeye Drive, Milpitas, California 95035

Identification No.)

(Address of principal executive offices)

Registrant s telephone number, including area code: (408) 435-9600

N/A

(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:

- " 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))

Item 2.02 Results of Operations and Financial Condition.

On April 25, 2007 Nanometrics Incorporated (the Company) issued a press release announcing preliminary financial results for the first quarter ended March 31, 2007. The press release is attached as Exhibit 99.1 to this report and is incorporated herein by reference.

The information in this current report on Form 8-K and the exhibits attached hereto shall not be deemed filed for the purposes of Section 18 of the Securities Exchange Act of 1934 (the Exchange Act) nor otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, or the Exchange Act, regardless of any general incorporation language in such filing.

Item 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

On April 23, 2007, Nanometrics announced that it has appointed Quentin B. Wright, an officer of the company, to replace Douglas J McCutcheon as the company s Chief Financial Officer on an interim basis, effective immediately. The Company will conduct a nationwide search for a permanent replacement for Mr. McCutcheon.

Mr. Wright, 50, has served as the company s Chief Accounting Officer since April 2005. Prior to joining Nanometrics, Mr. Wright provided financial consulting services for various technology clients in Silicon Valley. From May 1999 until November 2003, Mr. Wright served as Director of Accounting of Adaptec, Inc., a manufacturer of storage access solutions. Mr. Wright holds a B.S. degree in Business Administration from Oregon State University.

On April 25, 2007, the company issued a press release relating to these matters. A copy is filed herewith as Exhibit 99.2 and is incorporated herein by reference.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No.	Description
99.1	Press release issued by Nanometrics Incorporated dated April 25, 2007, reporting first quarter financial results
99.2	Press release issued by Nanometrics Incorporated dated April 25, 2007, announcing organizational change

Signature

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.

Dated: April 25, 2007 NANOMETRICS INCORPORATED

/s/ Bruce C. Rhine Bruce C. Rhine

President and Chief Executive Officer

INDEX TO EXHIBITS

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