

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

SCHEDULE 13D
Under the Securities Exchange Act of 1934
(Amendment No. 2)*

METRON TECHNOLOGY N.V.

(Name of Issuer)

Common Shares, par value € 0.44 per share

(Title of Class of Securities)

N5665B105

(CUSIP Number)

Applied Materials, Inc.
3050 Bowers Avenue
P.O. Box 58039
Santa Clara, California 95054
Attention: Joseph J. Sweeney,
Group Vice President, Legal Affairs and Intellectual Property, and Corporate Secretary
(408) 727-5555

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

With a copy to:

Richard Millard, Esq.
Weil, Gotshal & Manges LLP
201 Redwood Shores Parkway
Redwood Shores, California 94065
(650) 802-3000

October 29, 2004

(Date of Event Which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of Rule 13d-1(e), 13d-1(f) or 13d-1(g), check the following box .

Note. Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. *See* Rule 13d-7 for other parties to whom copies are to be sent.

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

(Continued on following pages)

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1 NAMES OF REPORTING PERSONS

I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

APPLIED MATERIALS, INC.**94-1655526****2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP:**(a) (b) **3 SEC USE ONLY****4 SOURCE OF FUNDS***

WC

5 CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEM 2(d) OR 2(e): **6 CITIZENSHIP OR PLACE OF ORGANIZATION:**

State of Delaware

7 SOLE VOTING POWER:

0

NUMBER OF
SHARES
BENEFICIALLY
OWNED BY
EACH
REPORTING
PERSON
WITH**8 SHARED VOTING POWER:**4,181,182¹**9 SOLE DISPOSITIVE POWER:**

0

10 SHARED DISPOSITIVE POWER:

0

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY REPORTING PERSON:4,181,182¹**12 CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES:** **13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11):**30.20%²**14 TYPE OF REPORTING PERSON:**

CO

¹ 4,181,182 common shares are subject to the Voting Agreements between Applied Materials, Inc. and certain officers and shareholders of Metron Technology N.V. (as described in Items 3 and 4 of the Original Statement and Item 4 of the First Amended Statement), of which 3,181,952 common shares are outstanding and 999,230 common shares are issuable upon exercise of outstanding options that are either currently vested or will vest within 60 days of September 30, 2004.

² Based upon 13,842,961 common shares outstanding after the issuance of 999,230 common shares upon exercise of outstanding options subject to the Voting Agreements (as described in Items 3 and 4 of the Original Statement and Item 4 of the First Amended Statement) that are either currently vested or will vest within 60 days of September 30, 2004. Based upon 12,843,731 common shares outstanding as contained in Metron's Proxy Statement on Schedule 14A, filed November 1, 2004.

This Amendment No. 2 amends and supplements the statement on Schedule 13D originally filed with the Securities and Exchange Commission (the “SEC”) on August 26, 2004 (the “Original Statement”) by Applied Materials, Inc. (“Applied”), relating to Metron Technology N.V., a company organized under the laws of The Netherlands (“Metron” or “Issuer”) in order to correct certain typographical errors contained in the Amended and Restated Schedule B contained in Amendment No. 1 to the Original Statement filed with the SEC on November 3, 2004 (the “First Amended Statement”). The Original Statement, as amended, is referred to herein as the “Amended Statement.”

Item 1. Security and Issuer

This Amended Statement on Schedule 13D relates to the common shares, par value € 0.44 per share (“Common Shares”), of Metron Technology N.V. The principal executive offices of Metron are located at 4425 Fortran Drive, San Jose, California 95134.

Item 2. Identity and Background

No amendments to Item 2 of the Amended Statement.

Item 3. Source and Amount of Funds or Other Consideration

No amendments to Item 3 of the Amended Statement.

Item 4. Purpose of Transaction

No amendments to Item 4 of the Amended Statement.

Item 5. Interest in Securities of the Issuer

Item 5 of the Amended Statement is hereby amended and supplemented as follows:

(a) - (b) The Amended and Restated Schedule B contained in the First Amended Statement is hereby deleted and the Second Amended and Restated Schedule B attached hereto is substituted in its place.

(c) – (e) No amendments to Item 5(c) – (e) of the Amended Statement.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer

No amendments to Item 6 of the Amended Statement.

Item 7. Material to Be Filed as Exhibits

Not applicable.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Date: November 5, 2004

APPLIED MATERIALS, INC.

By: /s/ Joseph J. Sweeney

Joseph J. Sweeney
Group Vice President,
Legal Affairs and Intellectual Property, and
Corporate Secretary

SECOND AMENDED AND RESTATED SCHEDULE B
SHAREHOLDERS PARTY TO A VOTING AGREEMENT
WITH APPLIED MATERIALS, INC.

The following table sets forth the name and present principal occupation or employment of each Shareholder of Metron who is party to a currently effective Voting Agreement with Applied in connection with the Purchase Agreement, and the aggregate number of Metron Common Shares beneficially owned by each such Shareholder as of September 30, 2004. Except as otherwise indicated below, the business address of each person set forth on this Schedule B is: c/o Metron Technology, 4425 Fortran Drive, San Jose, CA 95134.

Shareholder Party to Voting Agreement

Shares Beneficially Owned

Entegris Inc. 3500 Lyman Boulevard Chaska, Minnesota 55318	1,052,887 shares and 0 shares upon the exercise of outstanding options, warrants or other rights
FSI International, Inc. 3455 Lyman Boulevard Chaska, Minnesota 55318	1,497,003 shares and 30,000 shares upon the exercise of outstanding options, warrants or other rights
Segal Investments LP	129,528 shares and 0 shares upon the exercise of outstanding options, warrants or other rights
Edward D. Segal, Chairman, Chief Executive Officer and Managing Director of Metron	458,959 shares and 626,886 shares upon the exercise of outstanding options, warrants or other rights
Douglas McCutcheon, Senior Vice President, Chief Financial Officer and Managing Director of Metron	22,138 shares and 60,000 shares upon the exercise of outstanding options, warrants or other rights
Dennis R. Riccio, President, Chief Operating Officer and Managing Director of Metron	21,437 shares and 253,594 shares upon the exercise of outstanding options, warrants or other rights
Greg Greskovich, Vice President (Fab Solutions) and Managing Director of Metron	0 shares and 28,750 shares upon the exercise of outstanding options, warrants or other rights