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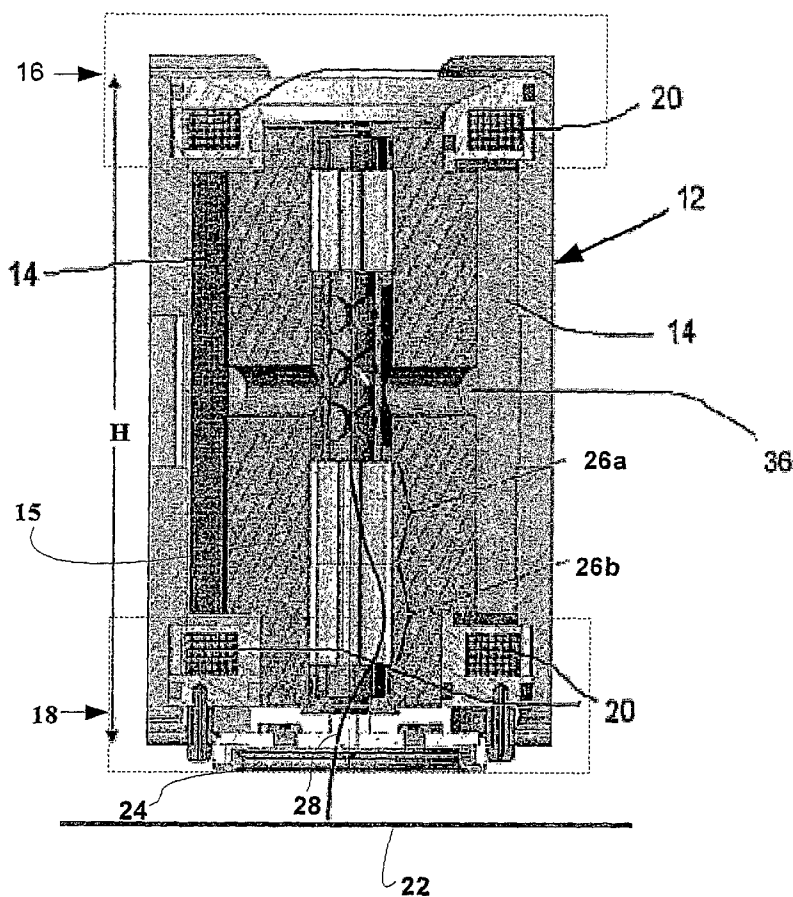
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[Continued on next page]

(54) Title: ELECTRON MICROSCOPE ARRAY FOR INSPECTION AND LITHOGRAPHY



(57) Abstract: A system and method for rapidly processing a specimen. The method includes generating a plurality of charged-particle beams traveling substantially along respective axes of an array of charged-particle beam columns (12) by providing each beam column with two permanent magnets (14) having at least one magnetic dipole disposed in a plane perpendicular to the axis. The trajectory of the beams is independently controlled and the beam is focused onto the specimen using additional correctional coils (20). The beams are deflected while maintaining incidence of the beam on the specimen parallel to the axis. Preferably, the charged particle beams include non-crossover charged particle beams. Preferably, the method further includes detecting charged particles scattered from the specimen using a detector at least partially immersed in a magnetic field, by utilizing at least in part the magnetic field.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC: **H01J 37/141**(2007.01);**H01J 37/26**(2007.01)
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USPC: 250/310,396ML,492.2

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 250/310, 396ML, 492.2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 EAST, PLUS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-------------------|--|------------------------------------|
| X,T --- Y,T | US 7,067,809 B2 (LO ET AL) 27 JUNE 2006 (26.06.2006). SEE ENTIRE DOCUMENT | 1-11, 13, 16-18, 22-24, 30-36 |
| A | US 6,410,924 B1 (WANG) 25 JUNE 2002 (25.06.2002), SEE ENTIRE DOCUMENT | ----- 12, 14, 15 1-24, 30-36 |
| A | US 2003/0155521 A1 (FAUERBAUM) 21 AUGUST 2003 (21.08.2006), SEE ENTIRE DOCUMENT | 1-24, 30-36 |

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