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(71) Applicant (for all designated States except US): **APOLLO DIAMOND, INC.** [US/US]; P.o. Box 670, Framingham, Massachusetts 01704 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **LINARES, Robert** [US/US]; P.o. Box 336, Sherborn, MA 01770 (US).

(74) Agents: **STEFFEY, Charles, E.** et al.; Schwegman, Lundberg, Woessner & Kluth, P.A., P.o. Box 2938, Minneapolis, Minnesota 55402 (US).

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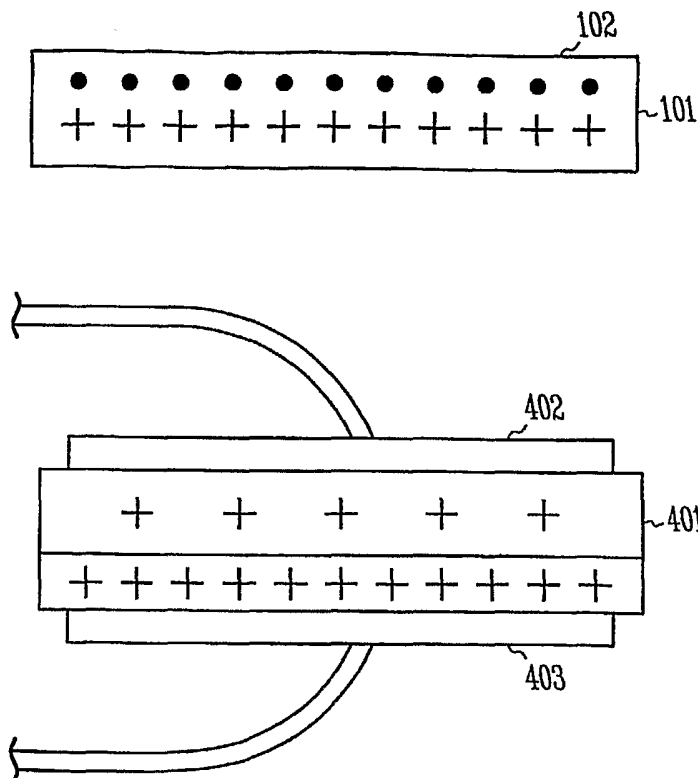
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(54) Title: BORON-DOPED DIAMOND SEMICONDUCTOR



(57) Abstract: First and second synthetic diamond regions are doped with boron. The second synthetic diamond region is doped with boron to a greater degree than the first synthetic diamond region, and in physical contact with the first synthetic diamond region. In a further example embodiment, the first and second synthetic diamond regions form a diamond semiconductor, such as a Schottky diode when attached to at least one metallic lead. The diamond is highly ¹²C enriched diamond in order to increase the thermal conductivity. The manufacturing process involves the separation of one of the diamond layers along a hydrogen implant layer.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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A. CLASSIFICATION OF SUBJECT MATTER

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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)

H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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

EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	US 5 285 084 A (VON WINDHEIM ET AL) 8 February 1994 (1994-02-08)	1-4, 33-36, 43-46
Y	column 4, lines 28-42; figures 1,2 column 5, lines 39-44	5-32, 37-42
Y	US 2001/001385 A1 (NAKAMURA KAZUO ET AL) 24 May 2001 (2001-05-24) paragraphs [0005] - [0010], [0017], [0020]; tables 3,5	5-14, 19-32, 37-42
Y	US 6 534 380 B1 (YAMAUCHI SHOICHI ET AL) 18 March 2003 (2003-03-18) column 13, lines 18-28; figures 3,6 -/-	15-18, 24-29

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Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Dauw, Xavier

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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