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Declarations under Rule 4.17:

[Continued on next page]

(54) **Title**: ETCHING PROCESS FOR SEMICONDUCTORS

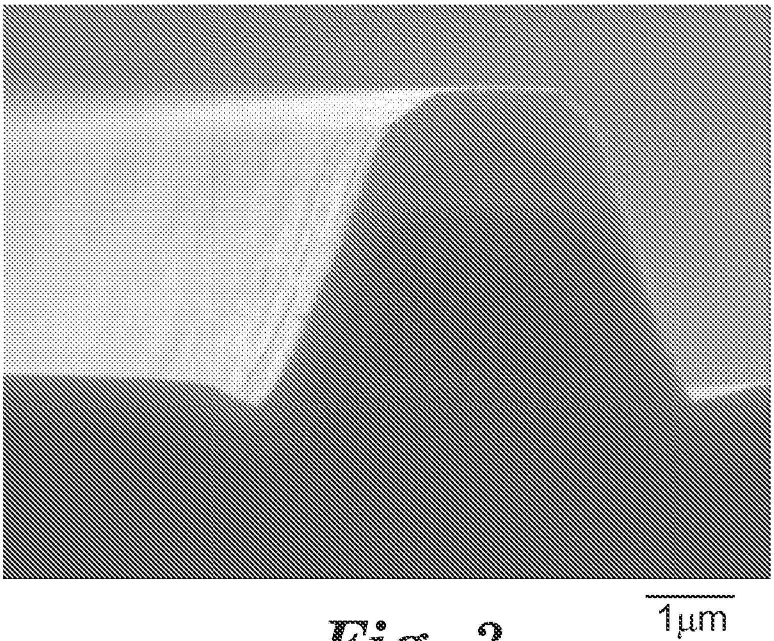

Fig. 3

(57) **Abstract**: A process for etching semiconductors, such as II-VI or III-V semiconductors is provided. The method includes sputter etching the semiconductor through an etching mask using a nonreactive gas, removing the semiconductor and cleaning the chamber with a reactive gas. The etching mask includes a photoresist. Using this method, light-emitting diodes with light extracting elements or nano/micro-structures etched into the semiconductor material can be fabricated.

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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International application No.
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A. CLASSIFICATION OF SUBJECT MATTER

H01L 21/3065(2006.01)i, H01L 33/00(2010.01)i

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 21/3065; H01L 21/302; H01L 21/02; B08B 9/00; H01L 21/461

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: etch, clean, plasma

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6933242 B1 (ANAND SRINIVASAN et al.) 23 August 2005 See column 4, lines 21-34;claims 1-4,20;figures 7A-7B.	1-16
Y	US 6352081 B1 (LU DANNY CHIEN et al.) 05 March 2002 See column 5, line 40-column 12, line 47;claims 1-4;figures 1-4.	1-16
A	US 2008-0050922 A1 (HAIRONG TANG et al.) 28 February 2008 See paragraphs [0024]-[0042];claims 1-4;figures 4,6.	1-16
A	US 2008-0050854 A1 (HIDETO SUGAWARA et al.) 28 February 2008 See paragraphs [0008]-[0012],[0066]-[0107];claims 1-3;figures 1-17.	1-16

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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