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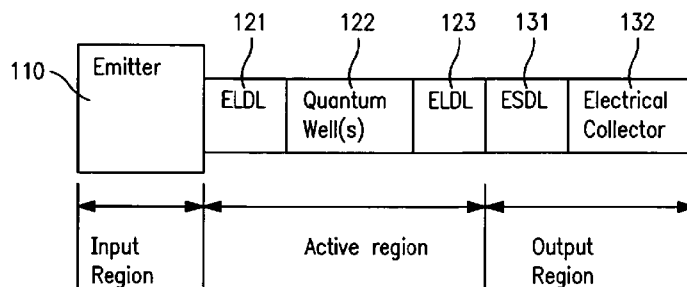


FIG. 1

(57) Abstract: The invention is applicable for use in conjunction with a light-emitting semiconductor structure that includes a semiconductor active region of a first conductivity type containing a quantum size region and having a first surface adjacent a semiconductor input region of a second conductivity type that is operative, upon application of electrical potentials with respect to the active and input regions, to produce light emission from the active region. A method is provided for enhancing operation of the light-emitting semiconductor structure, including the following steps: providing a semiconductor output region that includes a semiconductor auxiliary layer of the first conductivity type adjacent a second surface, which opposes the first surface of the active region, and providing the auxiliary layer as a semiconductor material having a diffusion length for minority carriers of the first conductivity type material that is substantially shorter than the diffusion length for minority carriers of the semiconductor material of the active region.

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INTERNATIONAL SEARCH REPORT

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PCT/US2011/001616**A. CLASSIFICATION OF SUBJECT MATTER****H01L 29/737(2006.01)i, H01L 33/04(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 29/737; H01L 33/00; H01B 1/02; H01S 5/34; H01L 31/00; H01L 29/15

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: diffusion length, minority carrier, light-emitting, base, drain

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2010-0202484 A1 (HOLONYAK, JR. NICK et al.) 12 August 2010 See abstract; paragraphs[0037]-[0044]; figs.7-12	1-23
A	US 2010-0032008 A1 (ADEKORE, BUNMI T.) 11 February 2010 See abstract; paragraphs[0122]-[0136]; figs.9-11	1-23
A	US 2008-0283818 A1 (ODNOBLYUDOV, MAXIM A. et al.) 20 November 2008 See abstract; paragraphs[0033]-[0037]; figs.2-6	1-23
A	US 2005-0116234 A1 (SUMAKERIS, JOSEPH J. et al.) 02 June 2005 See abstract; paragraphs[0070]-[0072]; figs.6-8	1-23

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

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Information on patent family members

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