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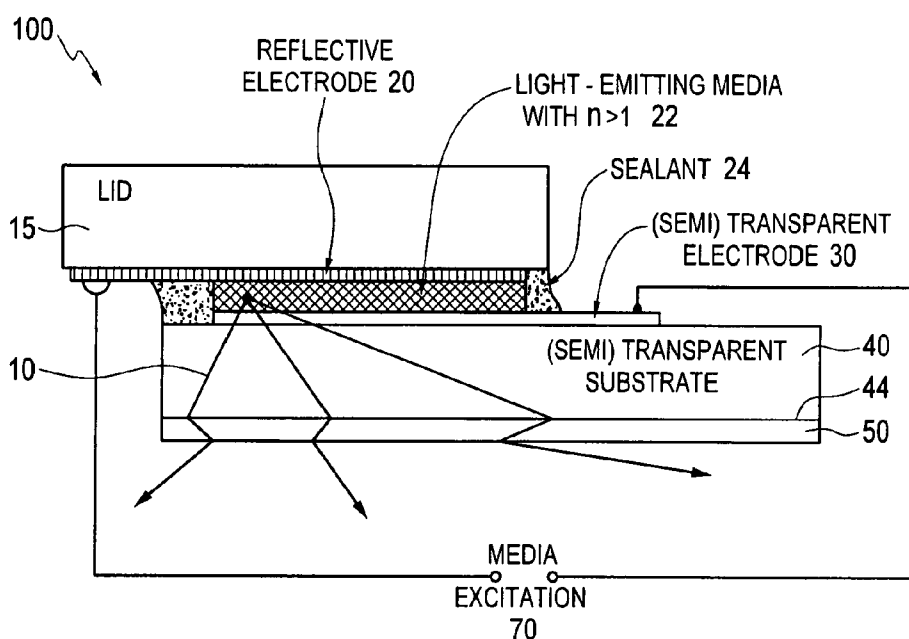
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(54) **Title:** SYSTEM AND METHOD FOR TOTAL LIGHT EXTRACTION FROM FLAT-PANEL LIGHT-EMITTING DEVICES



(57) **Abstract:** A system and method for improving light extraction from luminescent devices such as light-emitting flat-panel displays (for example, light-emitting diode (OLED) flat-panel displays) or flat panel lamps. The system includes a material with negative index of refraction, preferably with  $n = -1$ . The presence of such material on the exit surface of the electro-optic devices such as flat panel display or lamp with light-generating medium sandwiched between materials with refractive index  $n > 1$  fully removes TIR and results in light outcoupling efficiency of about 100%.

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**INTERNATIONAL SEARCH REPORT**

International application No.

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**A. CLASSIFICATION OF SUBJECT MATTER**  
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 USPC: 445/23;313/504,503  
 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. : 445/23; 313/504, 503

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)  
 None

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005/0212406 A1 (Daniels et al.) 29 September 2005 (29.09.2005), figure 11	1-4, 6,7,10-12,14-19,21,22,25
Y, E	US 2006/0238897 A1 (Nishioka) 26 October 2006 (26.10.2006) entire document	1-4,6,7,10-12,14-19,21,25
Y	Shalaev et al. "Negative index of refraction in optical metamaterials" Optics Letters December 15, 2005, Vol. 30, No. 24	4,6,7,14,19,21,22,25

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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
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