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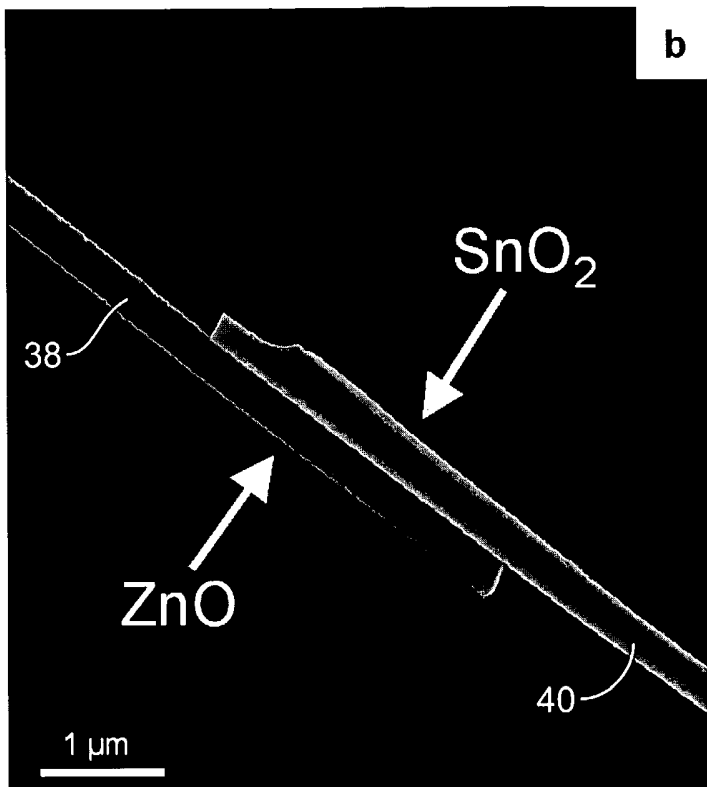
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(54) Title: NANOWIRES AND NANORIBBONS AS SUBWAVELENGTH OPTICAL WAVEGUIDES AND THEIR USE AS COMPONENTS IN PHOTONIC CIRCUITS AND DEVICES



(57) Abstract: Nanoribbons 40 and nanowires 38 having diameters less than the wavelength of light, as shown for example in Fig. 7B, are used in the formation of optical circuits and devices. Such nano structures function as subwavelength optical waveguides which form a fundamental building block for optical integration. The extraordinary length, flexibility and strength of these structures enable their manipulation on surfaces, including the precise positioning and optical linking of nanoribbon/wire waveguides 40, 38 and other nanoribbon/wire elements to form optical networks and devices. In addition, such structures provide for waveguiding in liquids, enabling them to further be used in other applications such as optical probes and sensors.

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<p><b>A. CLASSIFICATION OF SUBJECT MATTER</b>                  IPC(7) : G02B 6/12                  US CL : 385/14                  According to International Patent Classification (IPC) or to both national classification and IPC</p>												
<p><b>B. FIELDS SEARCHED</b>                  Minimum documentation searched (classification system followed by classification symbols)                  U.S. : 385/14; 257/734; 438/487; 235/491; 257/14; 257/1</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)                  EAST</p>												
<p><b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b></p> <table border="1"> <thead> <tr> <th>Category *</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>US 2002/0175408 A1 (Majumdar et al) 28 November 2002 (28.11.02), see entire document, especially figures 35-43; paragraphs 64, 68, 91, 189, and 243.</td> <td>1-27</td> </tr> </tbody> </table>			Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 2002/0175408 A1 (Majumdar et al) 28 November 2002 (28.11.02), see entire document, especially figures 35-43; paragraphs 64, 68, 91, 189, and 243.	1-27				
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<p>Name and mailing address of the ISA/US                  Mail Stop PCT, Attn: ISA/US                  Commissioner for Patents                  P.O. Box 1450                  Alexandria, Virginia 22313-1450                  Facsimile No. (571) 273-3201</p>		<p>Authorized officer                  Frank G. Font <i>Chesnee Carter</i>                  Telephone No. (571)272-1550  <i>for</i></p>										