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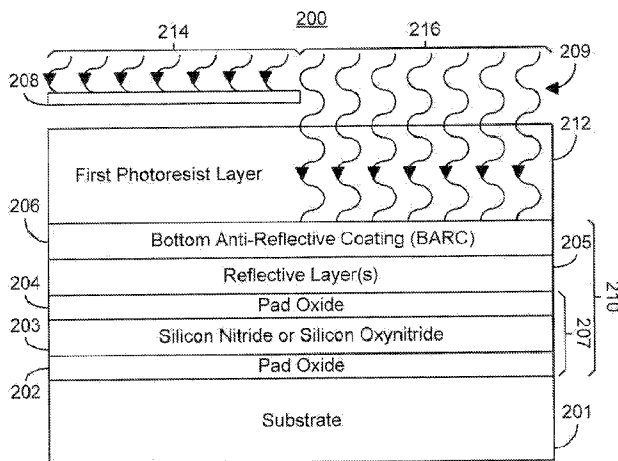
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(54) Title: METHOD AND SYSTEM FOR CREATING SELF-ALIGNED TWIN WELLS WITH CO-PLANAR SURFACES IN A SEMICONDUCTOR DEVICE



(57) Abstract: A method and system for providing a twin well in a semiconductor device is described. The method and system include providing at least one interference layer and providing a first mask that covers a first portion of the semiconductor device and uncovers a second portion of the semiconductor device. The first and second portions of the semiconductor device are adjacent. The method and system also include implanting a first well in the second portion of the semiconductor device after the first mask is provided. The method and system also include providing a second mask. The interference layer(s) are configured such that energy during a blanket exposure develops the second mask that uncovers the first portion and covers the second portion of the semiconductor device. The method and system also include implanting a second well in the first portion of the semiconductor device after the second mask is provided.

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INTERNATIONAL SEARCH REPORT

International application No.
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<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - H01L 21/426 (2008.04) USPC - 438/527; 257/E21.474 According to International Patent Classification (IPC) or to both national classification and IPC</p>																							
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) USPC - 438/527; 257/E21.474 IPC(8) - H01L 21/426 (2008.04)</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC - 438/527; 257/E21.474, 257/23 IPC(8) - H01L 21/426 (2008.04)</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST(USPT,PGPB,EPAB,JPAB); DialogPRO(Engineering); Google Scholar Search Terms: reflective layer on BARC, BARC layer, twin well and reflective layer, pad oxide, twin wells, forming twin wells, silicon nitride</p>																							
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Category*</th> <th style="width:70%;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width:20%;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>US 5,670,395 A (Pan) 23 September 1997 (23.09.1997), entire document especially abstract; col. 2, ln 5-13, 14-16, 19-20, 33-40, 45-47</td> <td>1, 6, 18</td> </tr> <tr> <td>----- Y</td> <td></td> <td>2-5, 7-17</td> </tr> <tr> <td>Y</td> <td>US 6,723,649 B2 (Chang et al.) 20 April 2004 (20.04.2004), entire document especially col. 2, ln 57-60; col. 3, ln 50-55)</td> <td>2-5, 7-16</td> </tr> <tr> <td>Y</td> <td>US 6,297,170 B1 (Gabriel et al.) 02 October 2001 (02.10.2001), entire document especially col. 1, ln 52-57; col. 2, ln 5-15; col. 4, ln 53-60</td> <td>4-5, 7-17</td> </tr> <tr> <td>Y</td> <td>US 5,393,692 A (Wu) 28 February 1995 (28.02.1995), entire document especially abstract</td> <td>14, 16</td> </tr> <tr> <td>Y</td> <td>US 4,881,236 A (Brueck et al.) 14 November 1989 (14.11.1989), entire document especially col. 2, ln 10-15</td> <td>13</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 5,670,395 A (Pan) 23 September 1997 (23.09.1997), entire document especially abstract; col. 2, ln 5-13, 14-16, 19-20, 33-40, 45-47	1, 6, 18	----- Y		2-5, 7-17	Y	US 6,723,649 B2 (Chang et al.) 20 April 2004 (20.04.2004), entire document especially col. 2, ln 57-60; col. 3, ln 50-55)	2-5, 7-16	Y	US 6,297,170 B1 (Gabriel et al.) 02 October 2001 (02.10.2001), entire document especially col. 1, ln 52-57; col. 2, ln 5-15; col. 4, ln 53-60	4-5, 7-17	Y	US 5,393,692 A (Wu) 28 February 1995 (28.02.1995), entire document especially abstract	14, 16	Y	US 4,881,236 A (Brueck et al.) 14 November 1989 (14.11.1989), entire document especially col. 2, ln 10-15	13
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<p>Date of the actual completion of the international search</p> <p>23 August 2008 (23.08.2008)</p>		<p>Date of mailing of the international search report</p> <p align="center">08 SEP 2008</p>																					
<p>Name and mailing address of the ISA/US</p> <p>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:</p> <p align="center">Lee W. Young</p> <p>PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</p>																					