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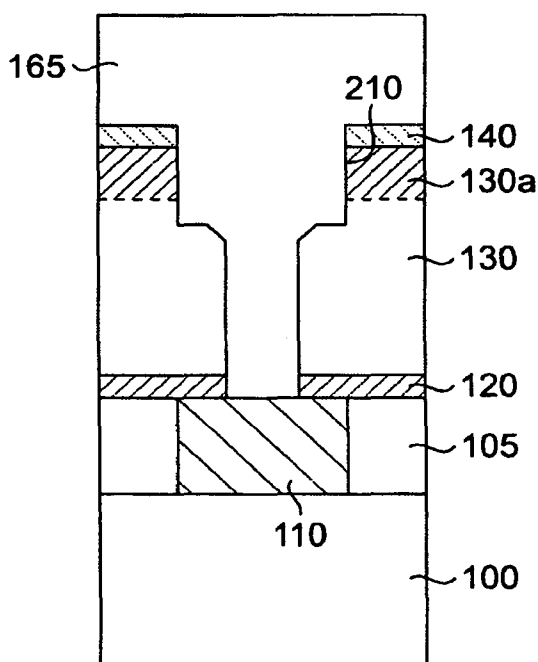
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(54) Title: DAMASCENE INTERCONNECTION HAVING POROUS LOW K LAYER WITH IMPROVED MECHANICAL PROPERTIES



(57) Abstract: A method is provided for fabricating a damascene interconnection. The method begins by forming on a substrate (100) a porous dielectric layer (130) and imparting a porogen material into an upper portion of the porous dielectric layer to define a less porous dielectric sublayer (130a) within the dielectric layer. A capping layer (140) is formed on the less porous dielectric sublayer and a resist pattern (145) is formed over the capping layer to define a first interconnect opening (150). The capping layer and the dielectric layer are etched through the resist pattern to form the first interconnect opening. The resist pattern is removed and an interconnection is formed by filling the first interconnect opening with conductive material (165). The interconnection is planarized to remove excess conductive material.

INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC: H01L 21/4763(2006.01)

USPC: 438/637

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. : 438/409,584,597,598,618,622,623,640

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2004/0101633 A1 (Zheng et al) 27 May 2004 (27.05.2004) fig. 3-6G with related text	1-15
Y	US 2004/0175928 A1 (Abell) 09 September 2004 (09.09.2004), fig. 2-6 with related text	1-15
Y	US 2004/0018717 A1 (Fornof et al) 29 January 2004 (29.01.2004) fig. 1B with paragraph 24	11-12
E	US 7,166,531 B1 (Van Den Hoek et al) 23 January 2007 (23.01.2007), fig. 1C with related text	1-15



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