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(54) **Title:** NOVEL SILICON PRECURSORS TO MAKE ULTRA LOW-K FILMS WITH HIGH MECHANICAL PROPERTIES BY PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION

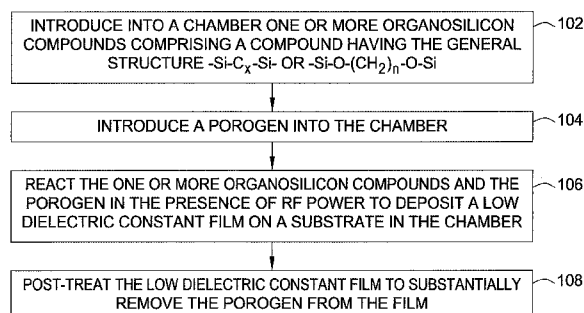


FIG. 1

(57) **Abstract:** A method for depositing a low dielectric constant film on a substrate is provided. The low dielectric constant film is deposited by a process comprising reacting one or more organosilicon compounds and a porogen and then post-treating the film to create pores in the film. The one or more organosilicon compounds include compounds that have the general structure Si-C_x-Si or -Si-O-(CH₂)_n-O-Si-. Low dielectric constant films provided herein include films that include Si-C_x-Si bonds both before and after the post-treatment of the films. The low dielectric constant films have good mechanical and adhesion properties, and a desirable dielectric constant.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/051983**A. CLASSIFICATION OF SUBJECT MATTER****H01L 21/31(2006.01)i, H01L 21/205(2006.01)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 21/31; C23C 16/40; C23C 16/56; H01L 21/469; H01L 21/4763

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

(Chinese Patents and application for patent)

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

eKOMPASS(KIPO internal) & Keywords: organosilicon, porogen

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	WO 2005-078155 A1 (APPLIED MATERIALS, INC. et al.) 25 August 2005 See paragraphs 16-29	1,2,5,6,12-15 3
Y	US 2007-0117408 A1 (SON VAN NGUYEN et al.) 24 May 2007 See claim 3	3
X	US 2002-0142579 A1 (JEAN LOUISE VINCENT et al.) 03 October 2002 See paragraphs 65-67, 74, 77 and Table 1	7-10
A	US 2006-0079099 A1 (SON VAN NGUYEN et al.) 13 April 2006 See claims 1,3,5,24	1-15
A	US 2007-0161256 A1 (STEPHEN M.GATES et al.) 12 July 2007 See abstract and fig. 1	1-15
A	US 7169715 B2 (ANDREW W.OTT et al.) 30 January 2007 See abstract	1-15

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

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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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