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(54) Title: METHOD OF FORMING AN OXIDE THIN FILM

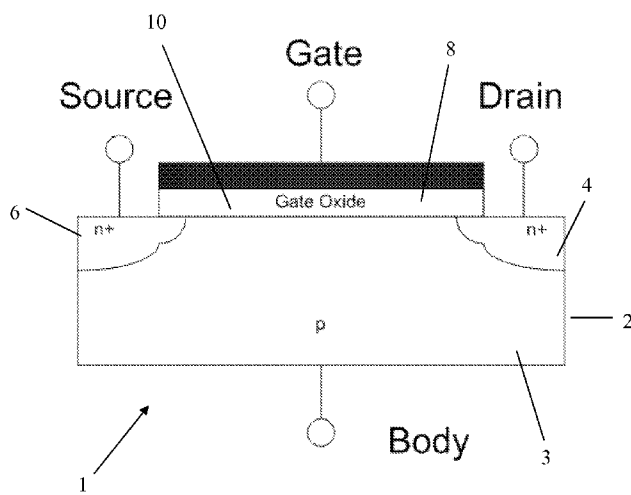


Fig. 1

(57) Abstract: A thin oxide film is formed by atomic layer deposition (ALD) onto a substrate by exposing the substrate to a first precursor comprising a metal organic alkoxide or amide or heteroleptic derivatives thereof and subsequently exposing the substrate to a second precursor comprising an ALD compatible carboxylic acid or carboxyl acid derivative compound. The sequential exposure to the first and second precursors may be repeated until a sufficient film thickness of an oxide of the metal has been deposited on the substrate. This process allows growth of an oxide thin film or nanostructure, on any suitable substrate. It permits formation of a high-κ dielectric oxide thin film on the substrate with similar dielectric properties to a much thinner SiO₂ film. Furthermore, the films grown can exhibit very good structural and physical properties. The process also provides high self-control of thin film growth with high reproducibility and reliability. In particular, the films can be synthesized with excellent similarity even on uneven surfaces and present a very smooth surface finish with very low roughness.

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/198069 A1 (METZNER CRAIG [US] ET AL) 7 October 2004 (2004-10-07) paragraphs [0048], [0054]	1-16,21
X	US 2004/043632 A1 (VAARTSTRA BRIAN A [US]) 4 March 2004 (2004-03-04) paragraphs [0008], [0027], [0028], [0061] - [0066], [0074]	16-20
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