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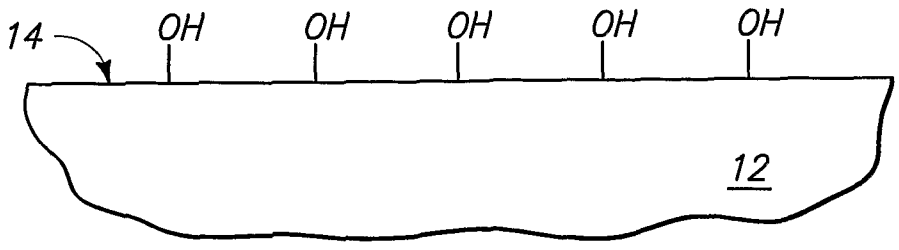
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(54) Title: METHODS OF FORMING A PHOSPHORUS DOPED SILICON DIOXIDE COMPRISING LAYER, AND METHODS OF FORMING TRENCH ISOLATION IN THE FABRICATION OF INTEGRATED CIRCUITRY



(57) Abstract: This invention includes methods of forming a phosphorus doped silicon dioxide comprising layers, and methods of forming trench isolation in the fabrication of integrated circuitry. In one implementation, a method of forming a phosphorus doped silicon dioxide comprising layer includes positioning a substrate within a deposition chamber. First and second vapor phase reactants are introduced in alternate and temporally separated pulses to the substrate within the chamber in a plurality of deposition cycles under conditions effective to deposit a phosphorus doped silicon dioxide comprising layer on the substrate. One of the first and second vapor phase reactants is $PO(OR)_3$ where R is hydrocarbyl, and an other of the first and second vapor phase reactants is $Si(OR)_3OH$ where R is hydrocarbyl.

WO 2005/008746 A2