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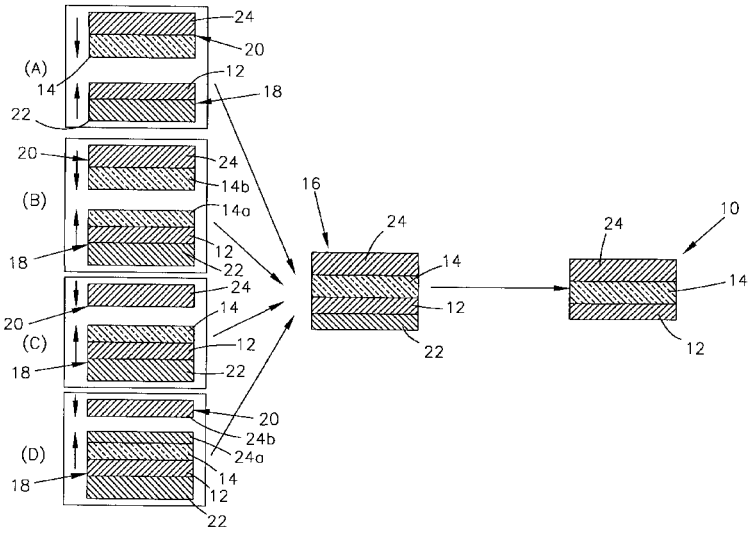
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(54) Title: METHOD OF FORMING STRAINED SILICON ON INSULATOR (SSOI) AND STRUCTURES FORMED THEREBY



(57) Abstract: A SOI structure (10) and a method for its fabrication, in which a strained silicon layer (12) lies directly on an insulator layer (14). The method entails forming the silicon layer (12) on a strain-inducing layer (22) having a different lattice constant than silicon, to that the silicon layer (12) is strained as a result of the lattice mismatch with the strain-inducing layer (22). The resulting multilayer structure (18) is the bonded to a substrate (24) so that an insulating layer (14) is between the strained silicon layer (12) and the substrate (24), and so that the strained silicon layer (12) directly contacts the insulating layer (14). The strain-inducing layer (22) is then removed to yield a strained SOI structure (10) comprising the strained silicon layer (12) directly on the insulating layer (14), in which the strain in the silicon layer (12) is maintained by the SOI structure (10).

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