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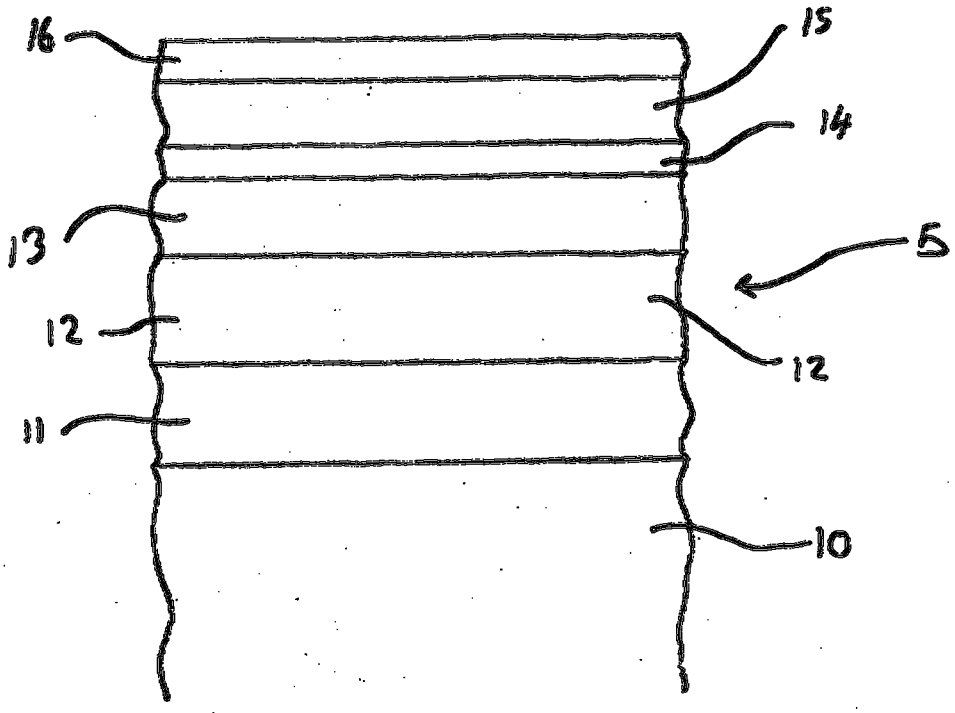
(54) Title: PREPARATION OF SEMICONDUCTOR SUBSTRATES


(57) Abstract

An indium phosphide semiconductor substrate (10) is prepared for subsequent growth of epitaxial layers (12 to 16) to form a semiconductor device (5). In the preparation, the substrate (10) is first annealed to promote any tendency for surface accumulation of impurity atoms by diffusion from the substrate and to promote impurity atom removal from the surface of the substrate. The substrate (10) is then surface etched to remove further impurities and to provide a clean, flat surface for subsequent epitaxial layer growth. The final stage of preparation involves growing a semi-insulating buffer layer (11) on the substrate to isolate the device epitaxial layers (12 to 16) from the substrate.