ABSTRACT

Process for Realising a Connecting Structure

The present invention relates to a process for realizing a connecting structure (2200) in a semiconductor substrate (1000), and the semiconductor substrate realized accordingly. The process of the present invention, the semiconductor substrate (1000) having at least a first surface, and being foreseen for a 3D integration with a second substrate (1700) along the first surface, wherein the 3D integration is subject to a lateral misalignment in at least one dimension having a misalignment value, can include the step of growing a diffusion barrier structure (2211) for preventing diffusion of elements out of a conductive layer into the rest of the semiconductor substrate, is characterized in that a first end surface, being the most outward surface of the diffusion barrier structure (2211) being substantially parallel to the first surface, along a direction perpendicular to the first surface and going from the substrate toward the first surface, of the diffusion barrier structure (2211) can have a length, in the direction of the lateral misalignment, the length being dependent on the misalignment value, wherein the length of the diffusion barrier structure (2211) is chosen such that in a 3D integrated structure a diffusion of elements out of a conductive layer of the second substrate (1700) is prevented in the integrated state.

Fig. 3b