

Title (en)

A METHOD FOR THE LOW TEMPERATURE CLEANING OF SUBSTRATES CONTAINING INDIUM OR ANTIMONY

Title (de)

EIN VERFAHREN ZUM NIEDERTEMPERATUR-REINIGEN VON SUBSTRATEN, DIE INDIUM UND ANTIMON ENTHALTEN

Title (fr)

PROCEDE DE NETTOYAGE A BASSE TEMPERATURE DE SUBSTRATS CONTENANT DE L'INDIUM OU DE L'ANTIMOINE

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Abstract (en)

[origin: WO9706555A1] A method for low temperature cleaning of group III-V semiconductor substrates, in particular substrates containing indium or antimonide, whereby the substrate is heated in an oxygen-free environment and exposed to a chemical cleaning agent. The chemical is of the form (Me₂N)₃-X, where X is a group V element (e.g. arsenic (As), antimony (Sb), phosphorus (P)), also present in the substrate. Examples of the chemicals are tris(dimethylamino)arsine [TDMAAs] = (Me₂N)₃As, tris(dimethylamino)antimony [TDMASb] = (Me₂N)₃Sb, and tris(dimethylamino)phosphine [TDMAP] = (Me₂N)₃P. The cleaning process removes the native oxide layer on the surface of the substrate, leaving a smooth, atomically flat surface suitable for epitaxial growth. The process is of particular importance to thermally unstable substrates, for example indium antimonide (InSb), which are difficult to clean using conventional techniques.

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