

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

Publication

EP 0842531 A1 19980520 (EN)

Application

EP 96925907 A 19960801

Priority

- GB 9601864 W 19960801
- GB 9515902 A 19950803

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 $(\text{Me}_2\text{N})_3\text{-X}$, 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] = $(\text{Me}_2\text{N})_3\text{As}$, tris(dimethylamino)antimony [TDMASb] = $(\text{Me}_2\text{N})_3\text{Sb}$, and tris(dimethylamino)phosphine [TDMAP] = $(\text{Me}_2\text{N})_3\text{P}$. 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.

IPC 1-7

H01L 21/306

IPC 8 full level

H01L 21/306 (2006.01)

CPC (source: EP)

H01L 21/02052 (2013.01)

Citation (search report)

See references of WO 9706555A1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

WO 9706555 A1 19970220; EP 0842531 A1 19980520; GB 9515902 D0 19951004

DOCDB simple family (application)

GB 9601864 W 19960801; EP 96925907 A 19960801; GB 9515902 A 19950803