

Title (en)

METHOD AND APPARATUS FOR THE CONTINUOUS VAPOR DEPOSITION OF SILICON ON SUBSTRATES

Title (de)

VERFAHREN UND VORRICHTUNG ZUR KONTINUIERLICHEN GASPHASENABSCHEIDUNG VON SILIZIUM AUF SUBSTRATEN

Title (fr)

PROCÉDÉ ET DISPOSITIF DE DÉPÔT CONTINU EN PHASE GAZEUSE DE SILICIUM SUR DES SUBSTRATS

Publication

EP 3701559 A1 20200902 (DE)

Application

EP 18793404 A 20181025

Priority

- DE 102017125232 A 20171027
- EP 2018079228 W 20181025

Abstract (en)

[origin: WO2019081618A1] A method for the continuous vapor deposition of silicon on substrates, comprising the following steps: a) introducing at least one substrate into a reaction chamber (2); b) introducing a process gas and at least one gaseous silicon precursor compound into the reaction chamber (2); c) forming a gaseous mixture of at least one silicon-based intermediate product coexisting with the gaseous silicon precursor compound and the process gas in the reaction chamber (2); d) forming a silicon layer by vapor deposition of silicon from the gaseous silicon precursor compound and/or the silicon-based intermediate product on the substrate; e) discharging an excess of the gaseous mixture from the reaction chamber (2); characterized in that the method furthermore comprises a step (f) in which at least one of the constituents of the excess of the gaseous mixture, selected from the silicon precursor compound, the silicon-based intermediate product and/or the process gas, is returned into the reaction chamber (2), wherein introducing the gaseous silicon precursor compound into the reaction chamber (2) is regulated in the method in such a way that the molar ratio of the silicon-based intermediate product to the silicon precursor compound has a value of 0.2:0.8 to 0.5:0.5, preferably 0.3:0.7 to 0.5:0.5, particularly preferably 0.5:0.5 in the process gas.

IPC 8 full level

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CPC (source: EP US)

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