Title (en)

PLASMA UNIFORMITY CONTROL BY GAS DIFFUSER CURVATURE

Title (de)

STEUERUNG DER PLASMAEINHEITLICHKEIT DURCH GASDIFFUSORKRÜMMUNG

Title (fr)

MAITRISE DE L'UNIFORMITE DU PLASMA PAR LA COURBURE DU DIFFUSEUR

Publication

EP 1789605 A2 20070530 (EN)

Application

EP 05764564 A 20050707

Priority

- US 2005024165 W 20050707
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- US 96293604 A 20041012
- US 2141604 A 20041222
- US 14350605 A 20050602

Abstract (en)

[origin: WO2006017136A2] Embodiments of a gas distribution plate for distributing gas in a processing chamber are provided. In one embodiment, a gas distribution assembly for a plasma processing chamber comprises a diffuser plate with gas passages passing between its upstream and downstream sides and hollow cathode cavities at the downstream side of the gas passages. The downstream side of the diffuser plate has a curvature to improve the thickness uniformity and film property uniformity of thin films deposited by PECVD, particularly SiN and amorphous silicon films. The curvature is preferably described by an arc of a circle or ellipse, the apex thereof located at the center point of the diffuser plate. In one aspect, the hollow cathode cavity volume density, surface area density, or the cavity density of the diffuser increases from the center of the diffuser to the outer edge. Methods for manufacturing such a diffuser plate are also provided.

IPC 8 full level

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CPC (source: EP KR)

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