

Title (en)

METHOD AND DEVICE FOR SUBSTRATE ETCHING WITH VERY HIGH POWER INDUCTIVELY COUPLED PLASMA

Title (de)

VERFAHREN UND EINRICHTUNG ZUM SUBSTRATÄTZEN MIT INDUKTIV GEKOPPELTEM HÖCHSTLEISTUNGSPLASMA

Title (fr)

PROCEDE ET DISPOSITIF POUR LA GRAVURE DE SUBSTRAT PAR PLASMA INDUCATIF A TRES FORTE PUISSANCE

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2004008816A2] The invention concerns a method and a system wherein the etching process is carried out in a reaction chamber (1) by acting on a substrate (16) polarized by a polarization generator (15) a plasma generated by a plasma source (4) contained in a sealed wall (5) made of dielectric material enclosed with an inductive coupling antenna (6) fed by a radio frequency generator (7). Control means (13) monitor the solenoid valves (12a, 12b, 12c) and the radio frequency generator (7), so as to produce a preparatory step which consists in gradually establishing plasma excitation power, a step which consists in injecting into the reaction chamber (1) a neutral gas such as argon or nitrogen, and in gradually establishing the power delivered by the radio frequency generator (7) until a nominal power is achieved, thereby avoiding heat shocks liable to destroy the sealed wall (5) of dielectric material, thus enabling use of plasma excitation power levels higher than 3000 watts.

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