Title (en)

DEVICE FOR DEPOSITION OF DIELECTRIC OPTICAL THIN FILMS BY THE HELP OF SPUTTERING PLASMA SOURCES AND SOURCES OF ENERGY IONS

Title (de)

VORRICHTUNG ZUR ABSCHEIDUNG DIELEKTRISCHER OPTISCHER DÜNNSCHICHTEN MITHILFE VON SPUTTERING-PLASMAQUELLEN UND QUELLEN VON ENERGIE-IONEN

Title (fr)

DISPOSITIF POUR LE DÉPÔT DE FILMS MINCES OPTIQUES DIÉLECTRIQUES À L'AIDE DE SOURCES DE PLASMA DE PULVÉRISATION CATHODIQUE ET DE SOURCES D'IONS À ÉNERGIE

Publication

EP 4081671 A4 20230927 (EN)

Application

EP 20964203 A 20201203

Priority

CZ 2020000053 W 20201203

Abstract (en)

[origin: WO2022117130A1] Device for deposition of dielectric optical thin films by the help of sputtering plasma sources and sources of energy ions which is formed with a vacuum chamber (1) whose inner volume (101) is through a regulation valve (2) connected with a vacuum pump (3), where the vacuum chamber (1) is in its upper part equipped with an entrance flange (102) for possibility of supply of working gas which is Into the inner volume (101) blown through a mas flowmeter (4) whereas in the Inner volume (101) are opposed a controlled ion source (5) and a pivoted and heated substrate holder (6) and between them are placed a system of sputtering plasma sources (?) which together with the ion source (S) generate flow of neutral and ionized particles. The essence of the invention is that above the pivoted substrate holder (8) is placed a system of at least two stationary high frequency probes (8) for possibility of measurement in real time ion flow and ion energy distribution function of landing ions at given place of placement of the samples of the substrate (9) on the substrate holder (8) whereas not only the ion source (5) is connected with the first power supply unit (10) and the sputtering plasma sources (?) with the second power supply unit (11) when both power supply units (10) and (11) are placed outside of the vacuum chamber (1) but also the substrate holder (6) is connected with a control unit (12) which is also placed outside of the vacuum chamber (1) and also there is, as an integrated part of the device, a processing and control unit (13) which is also placed outside of the vacuum chamber (1) and which is in parallel connected with the first power supply unit (10), the second power supply unit (11) and Individually with each stationary high frequency probe (8) when the connection with particular stationary high frequency probes (8) is realized through digitizers (14) which are placed outside of the vacuum chamber (1).

IPC 8 full level

H01J 37/32 (2006.01); **C23C 14/54** (2006.01)

CPC (source: EP)

C23C 14/3442 (2013.01); **C23C 14/544** (2013.01); **H01J 37/32917** (2013.01); **H01J 37/32935** (2013.01); **H01J 37/34** (2013.01); **H01J 37/3417** (2013.01)

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