

Title (en)

SPUTTERING APPARATUS WITH ISOLATED COOLANT AND SPUTTERING TARGET THEREFOR

Title (de)

ZERSTÄUBUNGSGERÄT MIT ISOLIERTER KÜHLUNG UND ZERSTÄUBUNGSTARGET HIERFÜR

Title (fr)

APPAREIL DE PULVERISATION AVEC UN FLUIDE DE REFROIDISSEMENT ISOLE ET CIBLE DE PULVERISATION ASSOCIEE

Publication

**EP 0824760 A1 19980225 (EN)**

Application

**EP 95943608 A 19951127**

Priority

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- US 43949095 A 19950511

Abstract (en)

[origin: WO9636065A1] A sputtering apparatus (10) is provided with a cathode assembly (21) formed of a cathode unit (22) having a moveable magnet assembly and a cooling water source therein, and a removable target assembly (23) that includes a replaceable target unit (25) and a removable and preferably reusable cooling jacket (40) that seals to the rear face (33) of the target unit and encloses a cooling cavity (45) therebetween. Ducts (50) are configured to automatically disconnect and reconnect the cooling cavity to the water source when the target assembly is removed from and reconnected in the cathode assembly. The target unit includes a volume of sputtering material on which is a front sputtering face (32), and has a recessed rim (34) surrounding the sputtering face. The rim is configured to form a vacuum seal to the wall of a sputtering chamber and a water seal to the cooling jacket. Thereby, the magnet assembly is isolated from contact with the cooling liquid. A central connection, preferably in the form of a projecting hub (35), is centered at the target unit back and connects to a shaft (65) in the cathode assembly to support the target material against distortion from pressure and heat variances, generally tending to force the center of the target into the processing chamber (13). Preferably, the target (25) is formed of an integral piece of sputtering material, where the material permits, and otherwise the rim and hub may be part of a backing plate (25b) bonded to the target material to form the target unit. In either event, the back of the target unit is intrinsically, or is coated or otherwise treated to be, impermeable to contamination from the cooling water.

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IPC 8 full level

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