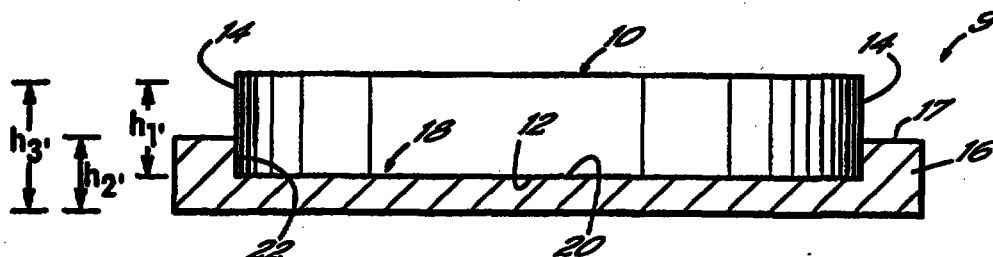




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(21) International Application Number: PCT/US99/22369 (22) International Filing Date: 28 September 1999 (28.09.99) (30) Priority Data: 09/172,311 14 October 1998 (14.10.98) US (71) Applicant: MATERIALS RESEARCH CORPORATION [US/US]; 542 Route 303, Orangeburg, NY 10962 (US). (72) Inventors: HUNT, Thomas, J.; 891 Lockwood Drive, Peekskill, NY 10566 (US). GILMAN, Paul, S.; 5 Marget Ann Lane, Suffern, NY 10901 (US). (74) Agents: FREI, Donald, F. et al.; Wood, Herron & Evans, L.L.P., 2700 Carew Tower, Cincinnati, OH 45202 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>

(54) Title: SPUTTER TARGET/BACKING PLATE ASSEMBLY AND METHOD OF MAKING SAME

**(57) Abstract**

This invention is directed to improve bonded sputter target/backing plate assembly (9) and method of making same. The assembly includes sputter target (10) having side (14) and bottom (12) bonding surfaces bonded within a recess (18) in an underlying backing plate (16), the recess (18) having top (20) and side (22) bonding surfaces. The assembly method includes treating the bonding surfaces of either the target (10) or backing plate recess (18) by roughening at least a portion thereof to a surface roughness (R_a) of at least about 120 micro-inches. The method further includes orienting target (10) within backing plate recess (18) to form one assembly having a parallel interface defined by top (20) and bottom (12) bonding surfaces and a side interface defined by side bonding surfaces (14/22), and subjecting the assembly to heat and pressure in a controlled atmosphere, thereby bonding the bonding surfaces.