

THESIS TITLE	DEPOSITION OF THIN FILM BY D.C. PLANAR MAGNETRON SPUTTERING
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ABSTRACT

D.C. planar magnetron sputtering on electrical discharge process of gas with depositor material target under low atmosphere pressure is the method used for the deposition of thin film. In order to acquire the real relation between sputtering power and deposition rate in different matters and conditions, a 1,000 gauss permanent magnet is placed on the cathode to increase the sputtering rate so that its magnetic field is parallel with the target surface. Next, decrease the mbar pressure by 8×10^{-3} or more in the vacuum chamber to adequately clean the deposition. Then, design the 0 up to 2 ampere D.C. power supply source for a gas discharge system. Next, adjust the current in the target surface and the pressure in the vacuum chamber for Titanium, Copper, Stainless Steel and Aluminium. Then, measure the discharge current, discharge voltage, gas pressure in the vacuum chamber and the deposition rate. After that, compute the power of electricity and the efficiency of the deposition rate. Finally, check the relation between sputtering power and deposition rate that can follow with the planar magnetron sputtering theory and suggest the most facile methode for people to commercially implement it.