

ABSTRACT OF THE DISCLOSURE
METHOD AND APPARATUS FOR MANUFACTURING LOW REFLECTIVITY FILM

A method and an apparatus for manufacturing low reflectivity film at low cost with an enhanced level of productivity are realized by optimizing the ratio of the swinging speed of the magnetron magnetic circuits arranged at the back of a cathode to the moving speed of the substrate. A method according to the invention comprises generating closed loops magnetron plasma on the surface of the target arranged on the cathode showing a same electric potential by respectively means of two magnetron magnetic circuits arranged at the back of the cathode and swinging the magnetron magnetic circuits arranged at the back of the cathode at a speed of not higher than $1/50$ relative to the moving speed of the substrate, thereby moving the plasma obtained as a result of the generation of magnetron plasma along the surface of the target accordingly. An apparatus according to the invention comprises two magnetron magnetic circuits arranged at the back of the cathode showing a same electric potential so as to generate respective closed loops of magnetron plasma, magnetic circuit swinging means for respectively swinging the magnetron magnetic circuits relative to the back surface of the cathode, thereby moving the plasma obtained as a result of the generation of magnetron plasma along the surface of the target accordingly and a control means for controlling the swinging speed of the magnetron magnetic circuits relative to the moving speed of the substrate. (FIG.1)