The 155th MANA Special Seminar

Pulsed Plasma Deposition: a new enabling technology for novel thin film fabrication

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Thin film are becoming of paramount importance for a large variety of applications and any new material, in order to become applicable, requires to be processed and. The present PVD and CVD technologies have been widely explored for applications and each material has shown to require some particular modification of them. Still a large number of materials have not been fabricated due to the lack of proper technologies. The most promising and versatile technology up to now has been based on ablation caused by laser interaction with materials (PLD). The large cost of industrial laser sources has hampered the wide use of this technology in the industry for wide area applications. At ISMN CNR Bologna and later in Organic Spintronics we have been exploring a new ablation technology based on fast electron pulses, the so called Pulsed Plasma Deposition (PPD). I will show the basic principles and the recent progress in the establishment of fabrication processes of a wide variety of material spanning from TCO to II-VI semiconductors, to complex oxides, manganites, bismutates and DLC. The low temperature operation of PPD allows to fabricate film on delicate substrates like PET. The recent advances of the PPD technology has made possible to reach several hundreds of nanometers of growth in a minute. By this progress the industrial wide area R2R fabrication technology is a reach.

Venue: Seminar Room #409-410 4F, Collaborative Research Bldg.

Date: July 8th Thursday **Time:** 14:30-15:15

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