Keynote Talk

Pulsed Laser Deposition for field emission device oriented applications

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The use of self assembly of one dimensional semiconductor nanowires in the development of new high performance nanowire devices is the latest addition to the Si technology. Nanowires devices researchers have been facing the challenge of finding future applications for nanowires synthesized from various materials. Pulsed Laser Deposition (PLD) has recently emerged as a technique suitable for the synthesis of device quality ZnO nanowires/nanorods for field electron emission based applications. Similarly, GaN nanowires have been grown by PLD for photonic applications. Another such material is Lanthanum Hexaboride (LaB_6) with known favourable properties as an electron emitter. In an attempt to produce nanocrystalline films, the PLD technique has been effectively used to demonstrate its suitability in synthesizing LaB_6 films on various substrates having nanoprotrusions, forming high performance field emitters. The talk is aimed at reviewing the field emission device oriented research work using PLD technique and describing the work carried out by the author and his collaborators highlighting various aspects of PLD nanocrystalline LaB_6 films.