

Joint Chapter of Circuits and Systems and Electron Devices Societies (CAS/EDS)

Presents

Technical Talk(Webinar) on Material Growth, Characterization of Semiconductors and Device Applications Through Atomistic TNL TCAD

By

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Date:

Saturday , 21st November
2020

Time:

17.00 to 18.00 PM

Venue:

Webinar,
<https://ieeemeetings.webex.com/ieeemeetings/onstage/g.php?MTID=e324dca212b57946069f3026c880a044e>

Registration:

**Registration for this
Technical Talk is free.**

Registration is open to all,
interested persons are
requested to register in
advance by

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Abstract:

Abstract- The present state-of-the-art in studying material growth & characterization and device applications including electronic transport in semiconductors is big challenge for industry. A detailed real lattice based epitaxial growth technique for II-VI and III-V compounds through MBE & MOCVD reactor's input conditions using EpiGrow Simulator with self-assembly of adatoms allow any kind of structure to be grown on appropriate substrate. The full electronic band structure is simulated by EPM method (using TNL's FullBand simulator) for better understanding of the structural and electronic properties. The carrier transport properties including multiple appropriate scattering mechanisms associated alloys through the solution of BTE through EMC method (using TNL's ElecMob simulator). The difference in present approach from earlier reported results is attributed to using optimized band structures and estimation of electron mobility based on different scattering mechanisms. Various scattering processes included in present analysis are - acoustic, intervalley, optical (Polar), piezoelectric, ionized impurity, Coulomb, surface roughness.

About the Speaker:

Dr. Praveen Kumar Saxena is serving as Chief Executive officer and Cheif Technology officer of Tech Next Lab Pvt Ltd, Lucknow. He holds Ph.D. degrees in Electronics Engineering from IIT, Banaras Hindu University, India. He is working on Modeling & Designs of different IR technologies since 2005. His research area includes CMOS & Optical devices (photoconductive, photovoltaic, QWIP, SLS type I & II) and MEMS especially on cantilever based applications. He has several years of experience in academia & industry. He is recipient of several national & international awards. He delivered several projects to Indian Defense on development of IR detectors technology and with ISRO on Radiation Detector technology . He was previously Regional Head for South East Asian territory at Silvaco Singapore. He has lot of reputed publications.