

## Editorial

The special issue of Journal of Active and Passive Electron Device contains extended version of 6 selected papers from 2022 IEEE Electron Device Kolkata Conference; where all the papers are in accordance with the theme of the journal in the field of submicron electronic device to photonic devices and plasmonics. In the field of nanoengineering and cutting-edge technologies, the present issue contains research for development of submicron devices, circuits and systems through investigation of novel properties; for the sole purpose of societal benefit. A proper amalgamation of geometrical complexity and material science make the inroad for future novel architecture, circuit and system.

The paper entitled “Inline Coaxial Probe Transition in Ridge Gap Waveguide using Chebyshev Multi-section Matching Transformer for Wideband Applications” written by P. Debnath *et al.* deals with design of resonating structure at microwave frequency with larger bandwidth and extremely low losses, which are essential criteria for MMIC design. Work of R. Jayachandran exhibits novel design of high bandwidth OTA-LC oscillator with large power gain in the paper “A novel tunable frequency sinusoidal OTA –LC Oscillator circuit for High frequency applications”. J. Bhattacharjee shows in-depth analysis of Half and Full Adder using Quantum logic gates, and details operating principles are discussed. In the paper “Investigating Threshold Voltage Roll-off in Submicron DG MOSFET incorporating Effect of Flatband Voltage”, Deyasi *et al.* depicts the threshold roll-off in asymmetrically doped submicron double-gate MOSFET by analytical means considering the effect of flatband, which speaks for the device while design of analog amplifier. All optical inhibitor logic gate is proposed using reflective semiconductor optical amplifier by S. Bosu *et al.* in their work “An alternative approach to design an inhibitor logic gate using reflective semiconductor optical amplifier” which will be the stepping stone for various combinational circuit design using RSOA. The last paper exhibits novel solar cell design whose performance is superior than perovskite based cells as mentioned in the paper “Performance Improvement of CISSe Solar Cell through CuI Back Layer and Optimized Device Structure”.

Overall, the papers already showed novelty in their respective field, and become qualified for publication in this special issue. Hope these works will prove beneficial and open future doorways for budding researchers in this field.

Guest Editors  
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