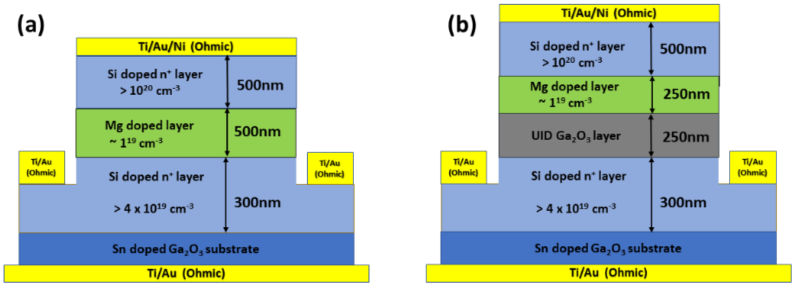

Fig. 1. Cross-sectional schematics of (a) S1-FD (b) S2-PD structures

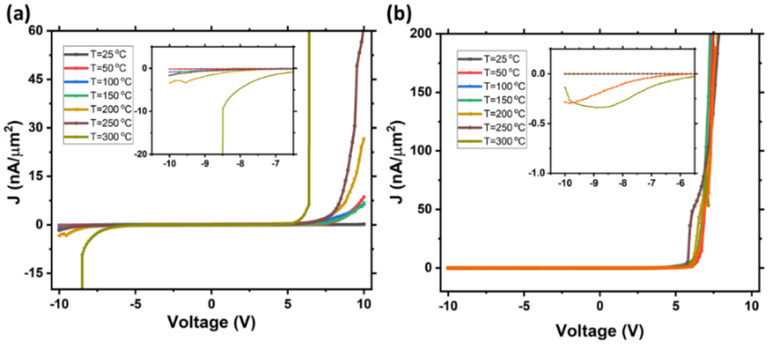

Fig. 2. Current density (J) vs Voltage (V) characteristics at different temperatures showing variation in forward and reverse current densities with temperature for (a) S1-FD and (b) S2-PD. Inset shows the leakage current density vs voltage characteristics in the reverse-bias region.

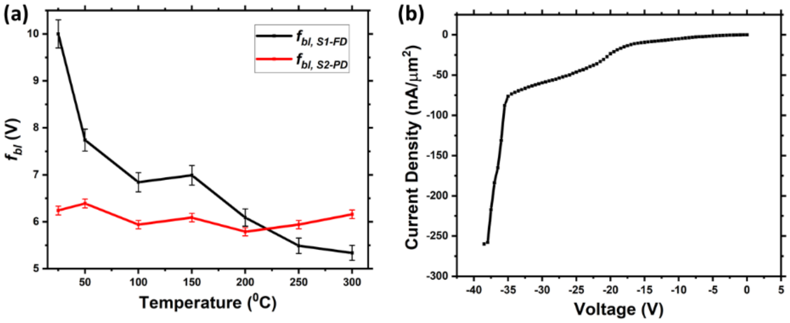

Fig. 3. (a) Forward Blocking Voltage, f_{bl} as a function of temperature for S1-FD and S2-PD (b) Reverse J-V characteristics for S2-PD

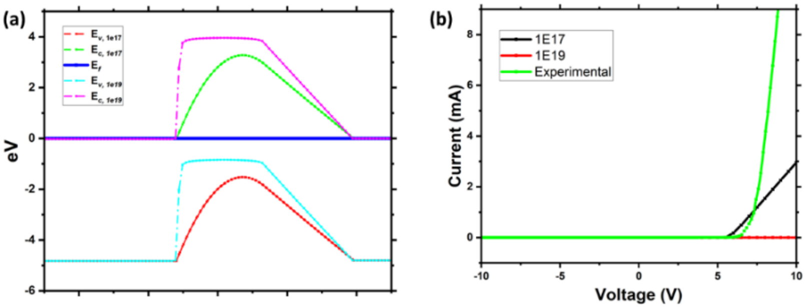

Fig. 4. (a) TCAD simulation of energy band diagram for S2-PD with Mg-doped layer concentration 10^{17} and 10^{19} cm^{-3} (b) Current-Voltage characteristics comparison of TCAD simulation and experimental results for S2-PD