XXR IBC backcontact

What is Interdigitated Back-Contact (IBC) electrode configuration?
Interdigitated back-contact (IBC) electrode configuration is a novel approach toward highly efficient Photovoltaic (PV) cells. Unlike conventional planar or sandwiched configurations,the IBC architecture positions the cathode and anode contact electrodes on the rear side of the solar cell.

What is Interdigitated Back Contact (IBC) architecture?
Interdigitated back contact (IBC) architecture can yield among the highest silicon wafer-based solar cell conversion efficiencies. Since both polarities are realized on the rear side,there is a definite need for a patterning step. Some of the common patterning techniques involve photolithography,inkjet patterning,and laser ablation.

How do you design emitter and base regions in an IBC cell?
Designing the emitter and base regions in an IBC cell involves ensuring that the emitter fraction exceeds the base fraction at a ratio of 3:1 or 60 % with a compensating or inactive region between them .

How is a final IBC-CNT cell achieved?
A final IBC-CNT cell is achieved by metallization of a patterned comb,which defines the emitter of the CNT:Nafion/patterned Ag and the gap between the emitter and the Mg/Ag ESC (Figure 1e).

Can boron diffusion be a dopant barrier for IBC solar cells?
It was also observed that the remaining SiO 2 layerunder the laser-doped regions after patterning was sufficient to act as a dopant barrier for the subsequent boron diffusion process,making the processing of the IBC solar cells robust and streamlined.

Will low-cost IBC technology become dominant in bifacial configuration?
Besides the fact that niche markets,such as rooftops,building integration (BI) PVs,vehicle integration (VI) PVs and product integration (PI) PVs,are already at a large GW scale,low-cost IBC technology has the potentialto become dominant in its bifacial configuration at the utility scale as well.

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