

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202311041416 A

(19) INDIA

(22) Date of filing of Application :19/06/2023

(43) Publication Date : 21/07/2023

(54) Title of the invention : A 33.8 % EFFICIENT ALL PEROVSKITE TANDEM SOLAR CELL

<p>(51) International classification :H01L 273000, H01L 310725, H01L 310780, H01L 311800, H01L 514200</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)Chitkara University Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India Rajpura -----</p> <p>2)Chitkara Innovation Incubator Foundation Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1)Mr. Nikhil Shrivastav Address of Applicant :Research Scholar, Department of Electronics & Communication Engineering, Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India Rajpura -----</p> <p>2)Dr. Jaya Madan Address of Applicant :Assistant Professor, Department of Electronics & Communication Engineering, Chitkara University, Chandigarh-Patiala National Highway (NH-64), Village Jhansla, Rajpura, Punjab – 140401, India Rajpura -----</p> <p>3)Dr. Rahul Pandey Address of Applicant :Assistant Professor, Department of Electronics & Communication Engineering, Chitkara University, Chandigarh-Patiala National Highway (NH-64), Village Jhansla, Rajpura, Punjab - 140401, India. Rajpura -----</p>
--	--

(57) Abstract :

ABSTRACT A 33.8 % EFFICIENT ALL PEROVSKITE TANDEM SOLAR CELL The present disclosure describes all perovskite tandem solar cell (100) comprising a top cell (102) of perovskite material, wherein the top cell (102) an Indium Zinc Oxide (IZO) layer 106, Tin Oxide (SnO₂) layer 108, C60 layer 110, Perovskite Layer 112, Me₄PACz also known as tetramethyltetrakis(4-aminophenyl)porphyrin 114. Furthermore, the bottom cell 104 includes an SnO₂ layer 116, PCBM C60 118, Perovskite 120, Nickel Oxide (NiO) 122. The top and the bottom cells are optimized for efficiency and are electrically coupled with each other to form a tandem configuration efficiently in a cost-effective manner.

No. of Pages : 20 No. of Claims : 9