

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202111023463 A

(19) INDIA

(22) Date of filing of Application :26/05/2021

(43) Publication Date : 03/03/2023

(54) Title of the invention : CZTSSE BASED SOLAR CELL WITH TIN SULPHIDE (SN2S3) BACK SURFACE FIELD LAYER

(51) International classification	:H01L0031032000, H01L0031180000, H01L0031022400, C03C0017360000, H01B0001020000	(71)Name of Applicant : 1)Chitkara Innovation Incubator Foundation Address of Applicant :SCO: 160-161, Sector - 9c, Madhya Marg, Chandigarh- 160009, India. Chandigarh India
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Filing Date	:NA	4)SHARMA, Rajnish
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The present disclosure pertains to a CZTSSe based solar cell (100). The solar cell (100) includes a tin sulphide (Sn2S3) layer(102) embedded as a Back Surface Field (BSF) for a CZTSSe layer (104), where the CZTSSe layer (104) is fabricated above the (Sn2S3) layer (102). The solar cell (100) includes a cadmium sulphide (CdS) layer (106) fabricated between the CZTSSe layer (104) and a zinc oxide(i-ZnO) layer (108), where the zinc oxide (i-ZnO) layer (108) is fabricated above the CdS layer (106). The solar cell (100) includes a zinc oxide (ZnO) layer (110) fabricated above the i-ZnO layer (108), where an interface of the CZTSSe layer (104) and the Sn2S3 layer (102) facilitates restricting flow of a set of electrons. The set of electrons are directed towards the CZTSSe layer (104), and where the Sn2S3 layer (102) facilitates increasing power conversion efficiency of the solar cell (100).

No. of Pages : 18 No. of Claims : 6