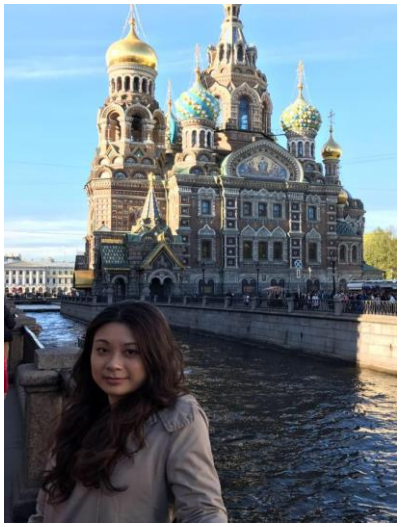


Title: Investigation of CZTSe Solar Cells with Different Back Contacts

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This paper presents a thorough investigation over characteristics and device performance of Cu2ZnSnSe4 (CZTSe) thin films and CZTSe solar cells prepared on Mo substrate, and on transparent oxide layers including SnO2:F (FTO) layer, and In2O3:Sn (ITO) layer. The re-sultant CZTSe thin film is characterized by X-ray dif-fraction (XRD), field emission scanning electron micro-scope (FESEM), and photoluminescence (PL), and is subsequently fabricated into CZTSe solar cell. The CZTSe solar cells using FTO substrate has the best elec-trical characteristics among CZTSe solar cells using Mo substrate and ITO substrate, which is verified by cur-rent-voltage measurements of their pn junction operation. The CZTSe solar cell with Mo substrate that shows the highest photo-current conversion efficiency of 1.78 %, while CZTSe solar cells with FTO substrate and ITO substrate shows 1.56 % and 0.02 %, respectively.

Biography

Dr. Lai has completed his PhD degree in Electro-Optical Engineering from NCTU in 2005. She is the associate professor of Department of Photonics Engineering, Yuan-Ze University. Dr. Lai has been authored and co-authored more than 80 international journals related to compound semiconductor materials and devices.

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