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Biography

Hang Zhou received BSc degree in Physics from the Sun Yat-Sen University in 2004, and Ph.D. degree from the Engineering Department, University of Cambridge in 2010. He is currently an associate professor in the School of Electronic and Computer Engineering, Peking University Shenzhen. He currently serves as vice director of the Shenzhen Key Lab of Thin Film Transistors and Advanced Display. He has published more than 20 journal papers. His research interests cover mainly thin film solar cells, photodetectors, image sensors and flexible energy storage devices.

Optimization of perovskite solar cells via spray assisted two-step deposition

Morphology and composition control of the perovskite thin films are of importance to develop high efficient perovskite solar cells. Previously, my group has demonstrated a 13% power conversion efficiency perovskite solar cells using two-step ultrasonic spray techniques. In this talk, I will present our attempts to optimize the perovskite thin film crystallinity and composition. Seed growth method is introduced to grow platelet nanostructured PbI2 thin film on organic transport layer PEDOT:PSS. The platelet PbI_2 is discovered to be more effectively converted into perovskite films when subject to sprayed droplets of methylammonium, which enables a thicker perovskite to be formed with less unreacted PbI_2, compared to those converted from compact PbI_2 thin films. The influence of adding MABr in the PbI2 solution on the resulting solar cells will also be presented.