

Area: Crystalline and Thin Film Silicon PV.

**RECORD EFFICIENCY INDUSTRIAL SCREEN-PRINTED MULTICRYSTALLINE
SILICON SOLAR CELL**

Hao Jin

Jinko Solar Holdings Co., Ltd, China

In this presentation, we demonstrate industrially feasible large-area solar cells achieving new record efficiency on p-type boron doped multicrystalline Si wafers. Advanced light trapping, passivation and hydrogenation technology are used to achieve excellent light absorption with very low surface recombination velocity. In addition, optimized emitter and anti reflection coating technologies are integrated into the process flow to further reduce recombination and optical losses. The bulk lifetime of the multi-crystalline Si wafers used for the fabrication exceeds 500 μ s after optimized gettering and hydrogenation processes. The high bulk lifetime and excellent surface passivation enable Voc to exceed 670mV. The metallization process is carried out by screen printing and firing in a conventional belt furnace. Detailed performance parameters and quantum efficiency of the cells will be illustrated. By encapsulating similar cell into module, we created highest module power, tested by TUV.