Contribution ID: **126** Type: **Poster**

Effects of substrate materials on boron and gallium co-doped ZnO films by RF magnetron sputtering

Wednesday 20 June 2018 18:00 (20 minutes)

Among the dopants used for the ZnO TCO films, Ga have been one of the most potential candidates because its ionic radius is closed to Zn2+ that could cause only small ZnO lattice distortion even for high Ga concentrations. In addition, Ga is less reactive with oxygen compared with other impurities. B-doped ZnO also get widely investigation because it could perform perfect transparency and better conductivity and improved thermal stability. Therefore, B and Ga co-doped ZnO (BGZO) films are expected to achieve improvements in electrical and optical properties [1, 2].
In general, glass, sapphire, and Si are often used as substrates for epitaxially grown of ZnO-based TCO films. Nowadays, TCO films on flexible substrates have attracted more and more attention because they can meet the expanding needs of modern photoelectrical devices, due to their special merits including lightweight, non-friability, small volume and low cost. Polyimide (PI) and polyethylene terephthalate (PET) films have been the ideal flexible substrate for its physical and chemical performance. In this work, BGZO films were deposited by radio frequency (RF) magnetron sputtering on PI, PET, glass and Si substrates. The effect of substrate materials on the surface morphology, structural, electrical and optical characteristics of BGZO films was researched in detail.

Author: TANG, Ke (Shanghai University)

Co-authors: HUANG, Jian; Dr SHEN, Yue; Dr GU, feng; Dr WANG, Linjun

Presenter: TANG, Ke (Shanghai University)

Session Classification: Poster Session Wednesday

Track Classification: Thin Film & Surface Engineering