

## Organic Light Emitting Diodes with pulse DC sputtered Ga-doped ZnO thin films as anodic electrode

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Ga-doped (5%) zinc oxide (GZO) thin films were fabricated at different substrate temperatures by pulsed DC magnetron sputtering method. In this study, we reported the structural, electrical and optical properties. All GZO films exhibit a good transparency in a visible range more than 80%. The film of substrate temperature at 200°C shows a good resistivity of about 40 Ω/□. These GZO thin films have been used as an anodic electrode in organic light emitting diode (OLED). The structure of OLED was consist of aluminum (Al), lithium fluoride (LiF), tris-(8-hydroxyquinoline) aluminum (Alq<sub>3</sub>), N,N'-diphenyl-N,N'-bis(3-methylphenyl)-1,1'-diphenyl-4,4'-diamine (TPD) and GZO, which was used as the top cathode, cathode interfacial layer, emitting layer, hole transport layer and bottom anode, respectively. The OLED characteristics of deposited GZO anode at 200°C substrate temperature shows a good brightness about 10000 cd/m<sup>2</sup>. The results suggest that the GZO films can possibly be applied to serve as an anodic electrode for the next generation of OLED and other devices.