

# **THEORETICAL APPROACH TO THE BRIGHTNESS OF A. C.THIN-FILM ELECTROLUMINESCENCE DEVICE**

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## **ABSTRACT**

An AC thin film electroluminescence device (ACTFELD) consists of a ultra layered structure of thin film of transparent electrode, insulator, phosphor, insulator, and metal electrode. Considering the fact that charge transfer from semiconductor to insulator layer causes electroluminescence excitation, an expression is derived for electroluminescence brightness. It is found that the brightness B of EL depend on several factors like such as efficiency  $\eta$  , insulator capacitance  $C_i$  ,applied voltage V and voltage across the semiconductor  $U_s(t)$ .

**KEYWORDS:** AC Thin Film Electroluminescence Device (ACTFELD), Brightness-Voltage Relations, Electroluminescence, Luminescence Emission, MISIM Structure