

Light Emitting Devices from Transition Metal Complexes

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Abstract

We report on the electroluminescent properties of complexes of Ru, Os and Ir featuring various ligands. The performance of devices with indium tin oxide (ITO) and gold contacts appears to be dominated by ionic space charge effects. Their electroluminescence efficiency was limited by the photoluminescence efficiency of the films and not by charge injection from the contacts. Record luminous efficiencies of 10Lm/W and brightness exceeding 300 cd/m² at just 3V are demonstrated in a single layer device with air stable electrodes.

Biography

George Malliaras studied physics at the Aristotle University (Greece) and did his doctoral research in the University of Groningen (the Netherlands). He spent two years at the IBM Almaden Research Center before joining the Department of Materials Science and Engineering at Cornell. His research focuses on the design, fabrication, characterization and computer modeling of organic optoelectronic devices.