

論文 / 著書情報  
Article / Book Information

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Title(English)	Zinc Silicate Thin Films for the Electron Injection/Transport Layer of OLED Lighting Devices
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To realize OLEDs for lighting with high out-coupling efficiency and reliability, properties of zinc silicate were elucidated, and OLEDs with very thick zinc silicate film as electron injection and transport layer fabricated on the originally developed scattering layer with high refractive index glass matrix were evaluated. It was revealed that the zinc silicate films consist of aggregates of nanoscale ZnO crystals and areas of a-ZnO-SiO<sub>2</sub>, and this structure: zinc oxide nanocrystals isolated by thin a-ZnO-SiO<sub>2</sub> governs exceptional properties: low work function, higher mobility etc. OLEDs with very thick zinc silicate film and the scattering layer keeps the high out-coupling efficiency ( $\times 1.7$ ), and the leak current can be suppressed. This indicates that OLEDs for lighting with high out-coupling efficiency and reliability will be obtained by these technologies.