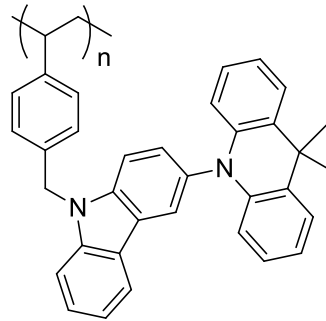


Novel carbazole-acridine-based hole transport polymer for low turn-on voltage of green quantum dot light-emitting diodes

Product Specifications

LT-N1015	P-CzAc
Grade	Mw>10000
Formula	(C ₃₆ H ₃₂ N ₂) _n
UV	348 nm(Toluene)
HOMO/LUMO	-5.33/-1.94 eV



*Reference: DOI: 10.1039/d1py00497b

Features

- In this study, P-CzAc HTL improves the hole mobility and balances the number of holes and electrons in the EML, to achieve a lower turn-on/driving voltage and higher efficiency of the QD-LED compared to those of the PVK HTL-based control devices.
- Compared to PVK(HOMO = -5.58 eV), P-CzAc exhibited a relatively high-lying HOMO level of -5.33 eV, the hole mobility (μ_h) of P-CzAc was estimated to be $2.24 \times 10^{-6} \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$, which is much higher than that of PVK ($\mu_h = 4.11 \times 10^{-9} \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$).
- In solution-processed green QD-LEDs, the P-CzAc-based device exhibited a relatively low V_{on} of 2.8 V and a high maximum EQE of 11.6%. In comparison with a PVK-based device ($V_{on} = 4.4 \text{ V}$; EQE = 8.6%).

Device Application

Device: ITO / PEDOT:PSS / P-CzAc / QDs / Zn_{0.85}Mg_{0.15}O / Al.

