

Supplementary Information

An indenocarbazole-based host material for solution processable green phosphorescent organic light emitting diodes

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Table 1S. Comparison of solubilities for several arylamine compounds (Unit: mg/mL)

Solvents	PCIC (this work)	CBP	NPB
Toluene	120	9	< 0.05
Chlorobenzene	104	19	< 0.05

CBP: 4,4'-Bis(N-carbazolyl)-1,1'-biphenyl

NPB: N,N'-Di(1-naphthyl)-N,N'-diphenyl-(1,1'-biphenyl)-4,4'-diamine

Device Configuration

Device A : ITO / AQ1200 (40 nm) / X-HTL (15 nm) / PCIC:Ir(mppy)₃ (30 nm, 5 mol%) / B-EBL (5 nm) / TPBI (35 nm) / LiF (1 nm) / Al (100 nm)

Device B : ITO / AQ1200 (40 nm) / X-HTL (15 nm) / PCIC:Ir(mppy)₃ (30 nm, 5 mol%) / B-EBL (3 nm) / BH:DH (15 nm) / TPBI (22 nm) / LiF (1 nm) / Al (100 nm)

Device C : ITO / AQ1200 (40 nm) / X-HTL (15 nm) / PCIC:Ir(mppy)₃ (30 nm, 5 mol%) / B-EBL (5 nm) / BH:DH (15 nm) / TPBI (20 nm) / LiF (1 nm) / Al (100 nm)

Device D : ITO / AQ1200 (40 nm) / X-HTL (15 nm) / PCIC:Ir(mppy)₃ (30 nm, 5 mol%) / B-EBL (7 nm) / BH:DH (15 nm) / TPBI (18 nm) / LiF (1 nm) / Al (100 nm)

Device E : ITO / AQ1200 (30 nm) / X-HTL (25 nm) / PCIC:Ir(mppy)₃ (30 nm, 5 mol%) / B-EBL (5 nm) / BH:DH (15 nm) / TPBI (20 nm) / LiF (1 nm) / Al (100 nm)

Device F : ITO / AQ1200 (20 nm) / X-HTL (35 nm) / PCIC:Ir(mppy)₃ (30 nm, 5 mol%) / B-EBL (5 nm) / BH:DH (15 nm) / TPBI (20 nm) / LiF (1 nm) / Al (100 nm)

HOD A : PEDOT:PSS (40 nm) / PCIC (30 nm) / MoO₃ (1 nm) / Al (100 nm)

HOD B : PEDOT:PSS (40 nm) / PCIC:Ir(mppy)₃ (30 nm, 5 mol%) / MoO₃ (1 nm) / Al (100 nm)

EOD A : ZnO and PEI (40 nm) / PCIC (30 nm) / Al (100 nm)

EOD B : ZnO and PEI (40 nm) / PCIC:Ir(mppy)₃ (30 nm, 5 mol%) / Al (100 nm)

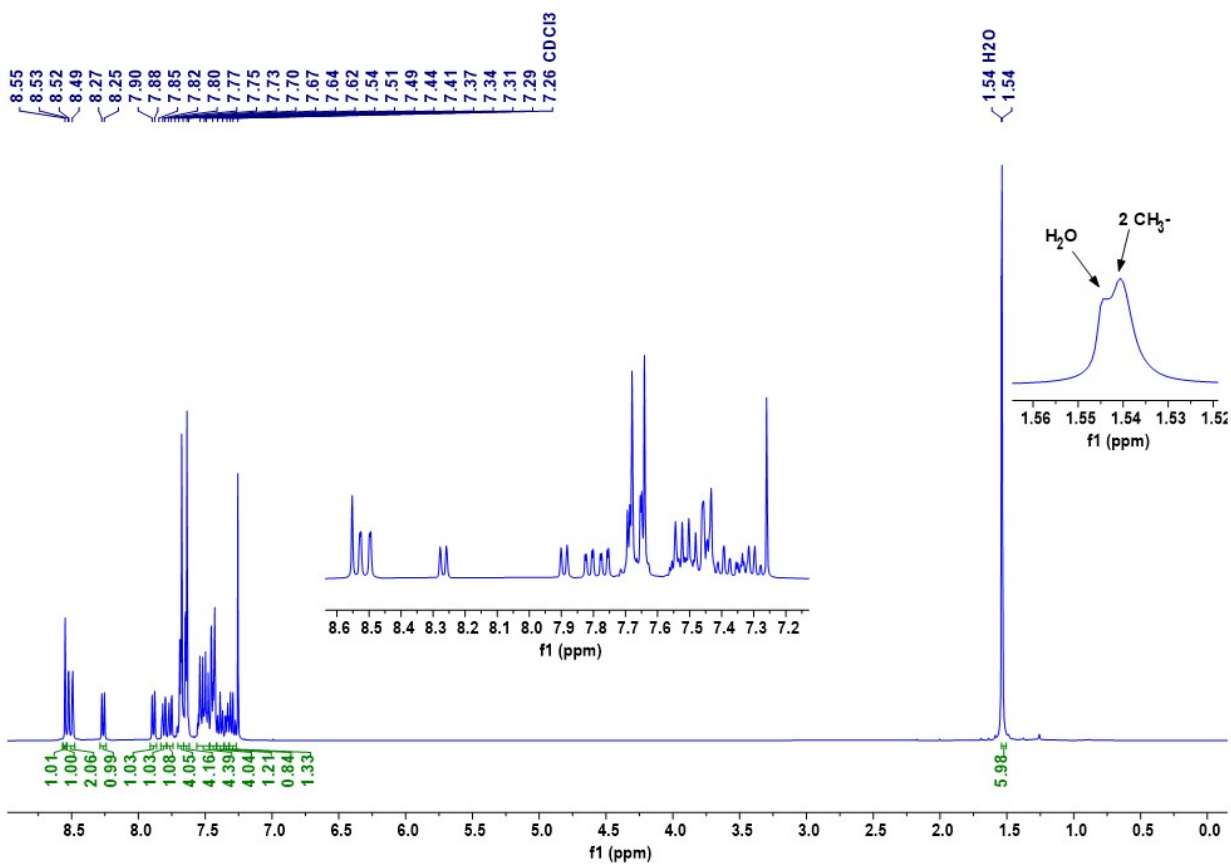


Figure 1S. ¹H NMR spectrum of PCIC in CDCl₃.

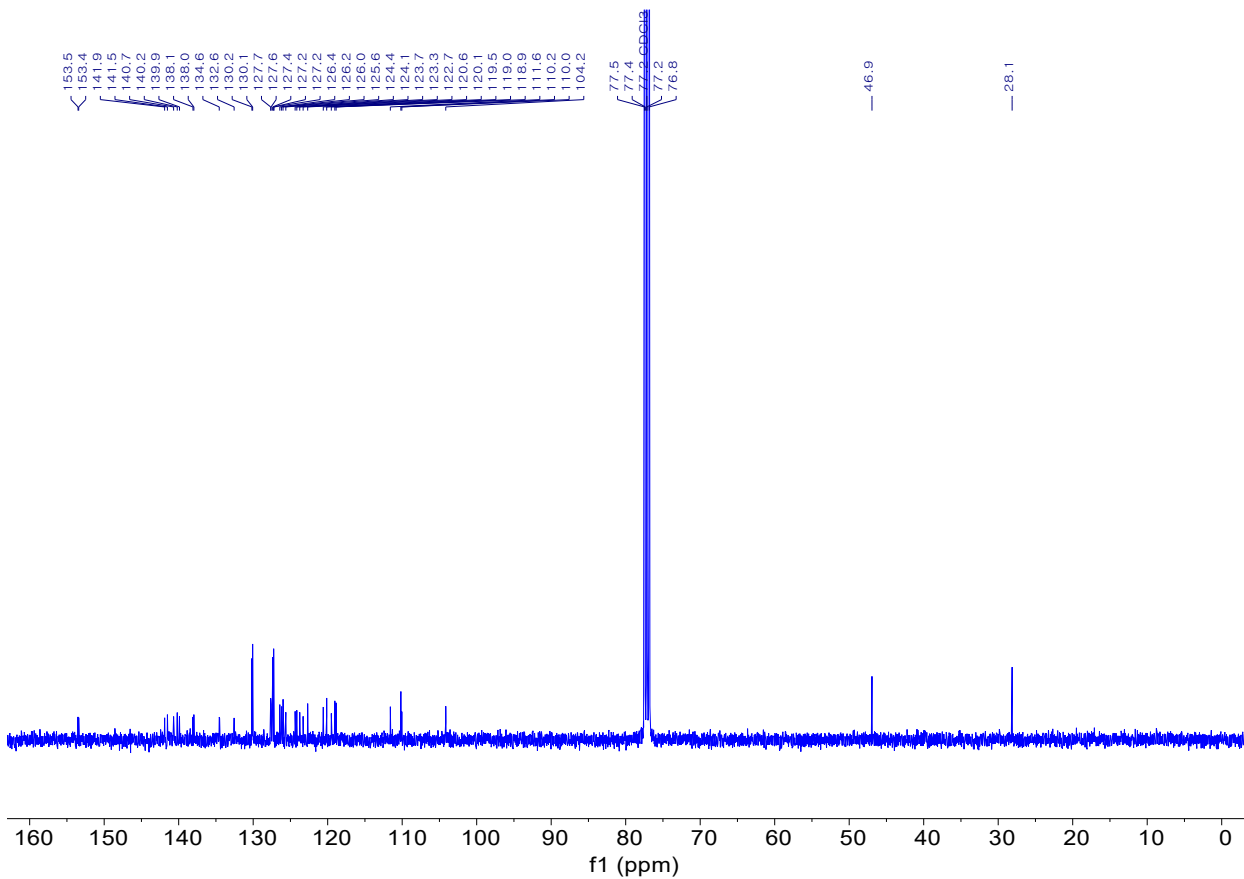


Figure 2S. ^{13}C NMR spectrum of PCIC in CDCl_3 .

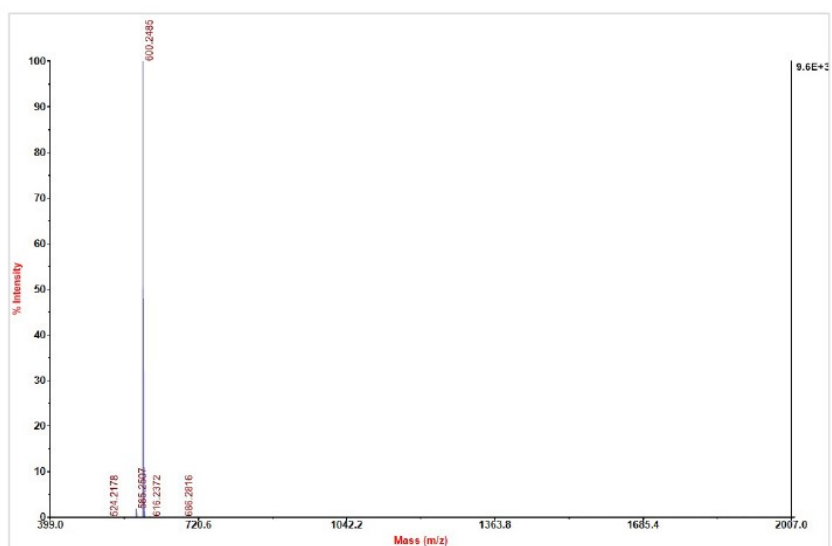


Figure 3S. MALDI-TOF mass spectrum of PCPI.

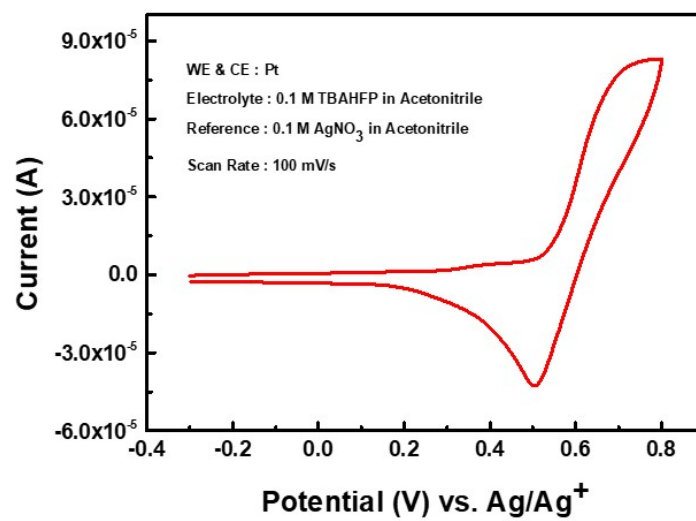


Figure 4S. Cyclic voltammogram of PCIC.

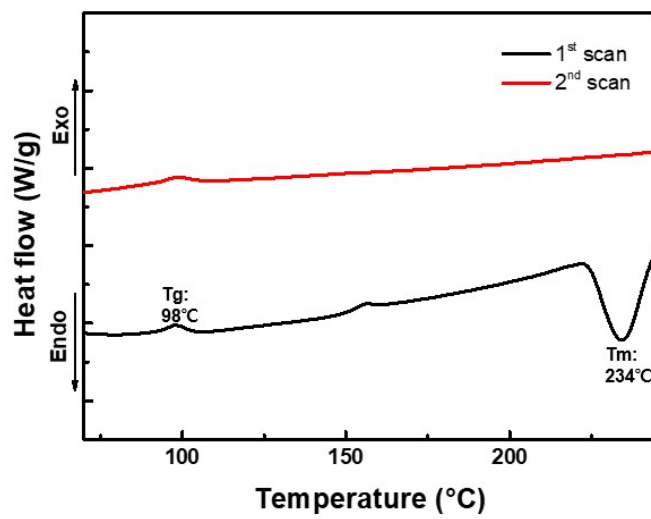


Figure 5S. DSC Curves of PCIC.

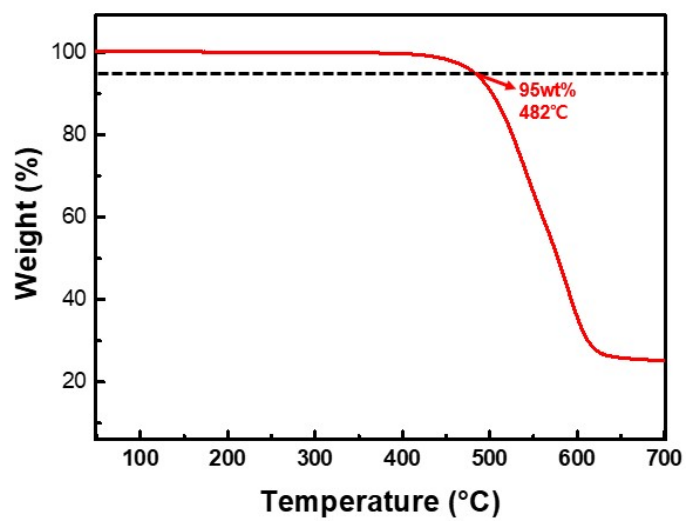


Figure 6S. TGA Curve of PCIC in CDCl₃.