

(19)
(12)

(KR)
(A)

(51) 。 Int. Cl. ⁷
C09K 11/06

(11)
(43)

2002 - 0072215
2002 09 14

(21)
(22)

10 - 2002 - 0012316
2002 03 08

(30)

JP - P - 2001 - 00064254 2001 03 08
JP - P - 2002 - 00042522 2002 02 20

(JP)
(JP)

(71)

가 가

3 30 2

(72)

가 1 - 10 - 2

가 2639 - 3

가 가 6 - 5 - 4 - 104

가 가 327 - 16

가 가 4 - 2 - 31 - B - 202

가 가 3 - 26 - 4

가 2 - 6 - 29

(74)

:

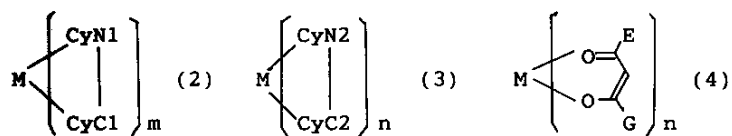
(54)

,

가 . , (1):

ML_m L_n['] (1)

$\{$, M Ir, Pt, Rh Pd ; L L' $\}^2$; m 1, 2 $\}^3$, n 0, $\}^3$ ML' $\}_n$ (2)
 $\}^1$ $\}^2$, m+n $\}^2$ $\}^3$; ML $\}_m$ (3)
 (3) (4) :



1 , CyC1 CyC2 , (5):



}

,

1

1(a), 1(b) 1(c)

2

< >

11: 12:

13: 14:

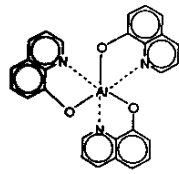
15: 16:

17:

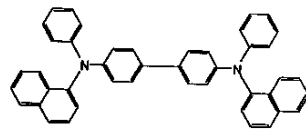
) , , , (" " EL " (1) 가 . (Thin Solid Films, 94 (1982) 171). , 가 , 가 . , Macromol. Symp. 125, 1 - 48(1997) , EL 1 . Alq3) , , ((α - NPD) , 가 가 , . , () (3) , . , 1: (D.F. O'Brien, et al., Applied Physics Letters, Vol. 74, No. 3, p. 422(1999)); 2: (M.A. Baldo, et al., Applied Physics Letters, Vol. 75, No. 1, p. 4(1999)) . 가 , 4 : , Alq3: α - NPD: N4,N4' - - - 1 - - N4,N4' - - - 4,4' - CBP: 4,4' - N,N' - - BCP: 2,9 - - 4,7 - - 1,10 -

PtOEP: -

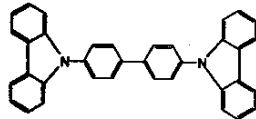
Ir(ppy)₃: -



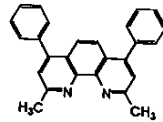
Alq3



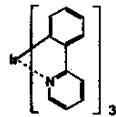
α-NPD



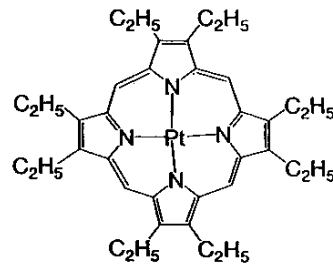
CBP



BCP



Ir(ppy)₃



PtOEP

1 2 , α - NPD , Alq3 , BCP
CBP PtOEP Ir(ppy)₃
6% 가 .
가 1:3
EL , 25% ,
3 , 100%, , 4
가 ,

1.

2.

3.

4.

5.

6.

3

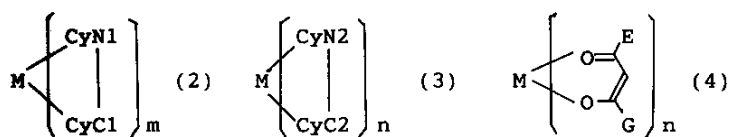
가

(5)

(1):

 $ML_m L'_n (1)$

{ , M Ir, Pt, Rh Pd ; L L' 2 (bidentate) ; m 1, 2
 3 , n 0, 1 2 , m+n 2 3 ; ML_m (2)
 ML'_n (3) (4):

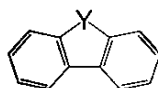


[, CyN1 CyN2 , M ,
; CyC1 CyC2 , M ,
CyN1 CyC1 , CyN2
CyC2 , ;

가
C - 1 , 가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡
(, , 가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡
C - 1 , 2 , 가
1 20)

E G , 가
(, , 가
C - 1 , 가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡
2 , 가
1 20)
;

1 , CyC1 CyC2 , (5):



(5)

[(5) , 가 CyN1, CyN2, CyC1 C
yC2 , (5) , 가 CyC1 CyC2 M

Y C=O, CRR', C=C(CN)₂, O S(, R R'
가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡ C - 1
2 , 가
1 20 (, ,
가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡ C - 1
2 , 가
1 20)) ;

(5) , 가
C - 1 , 가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡
2 , 가
1 20 ,

(
C - , 1 , , 가 -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH=CH- -C≡
가 1 20 , , 가)
 , , 가]
] }

(1)

(1) (3) ML'_n .(1) (4) ML'_n .(1) $n = 0$.

(5) Y가 C=O CRR' .

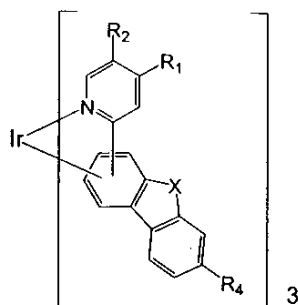
(2) CyC1 (3) CyC2 , 가 가 1 2 CH
 , , , 9 - , , , , ,
 , , , 2 - .

(2) CyN1 (3) CyN2 , , ,
 .

CyN1, CyN2, CyC1 CyC2 , 1 20
 { , -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH=CH- -C≡C-
 1 2 [1 20
 (가 -O- 1 2)] 2가
 }

(1) M .

(6):



{ , X CRR', O S[, R R' : C_nH_{2n+1} - (, n 1 20 , , - O - 1 2)] ;

R2 ; ; : C_nH_{2n+1} - (, n 1 20 , , - O - 1 2) ; 9,9- (, : C_nH_{2n+1} - (, n 1 20 , , - O - 1 2)); ; , 9,9- : C_nH_{2n+1} - (, n 1 20 , , - O - 1 2) } .

, , 1 , 1 (1)

가

가

(EL)

1(a), 1(b) 1(c)

(15) , 50 200nm (14)

(11)

$$1(a) \quad , \quad \text{가} \quad (12) \quad (13) \quad . \quad (14)$$

$$(14) \quad \text{---} \quad (13) \quad \text{ITO}$$

(11)

(12) , () . (13) , , α - NP

D

$$\begin{aligned} & \text{가 } \text{가} \text{ , } \quad (11) \quad \text{가} \text{ , } \quad (12) \quad \text{가} \text{ , } \quad (15) \quad \text{가} \text{ , } \quad (14) \end{aligned}$$

(12) (13) (12) (13)

1(b) (16) 1(a) (11) (12)

(16)

1(c) (14) (13), (12), (17)

(16) 4

(1) (5) 가

가

, MLCT* (metal - to - ligand charge transfer)

$\pi - \pi^*$

(1)

가

(2) () $\Phi()$ $\Phi(st)$

$$\Phi() / \Phi(st) = [\text{Sem}() / \text{Iabs}()] / [\text{Sem}(st) / \text{Iabs}(st)]$$

[, Iabs(st) ; Sem(st)

; Iabs() ; Sem()

]

Ir(ppy)_3 $\Phi = 1$

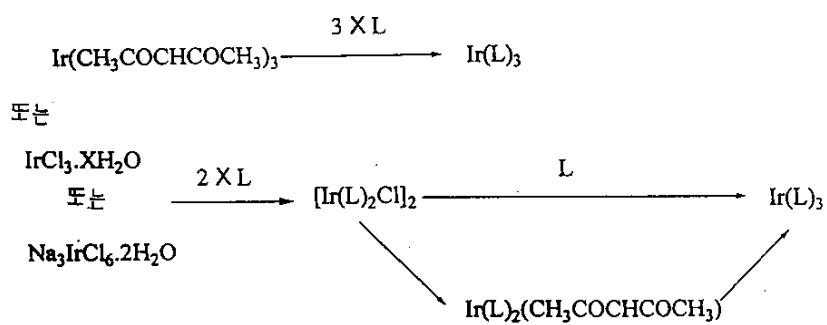
(3)

337nm 0.1 μm (

I_0 , $t()$, $\tau()$:

$$I = I_0 \cdot \exp(-t/\tau)$$

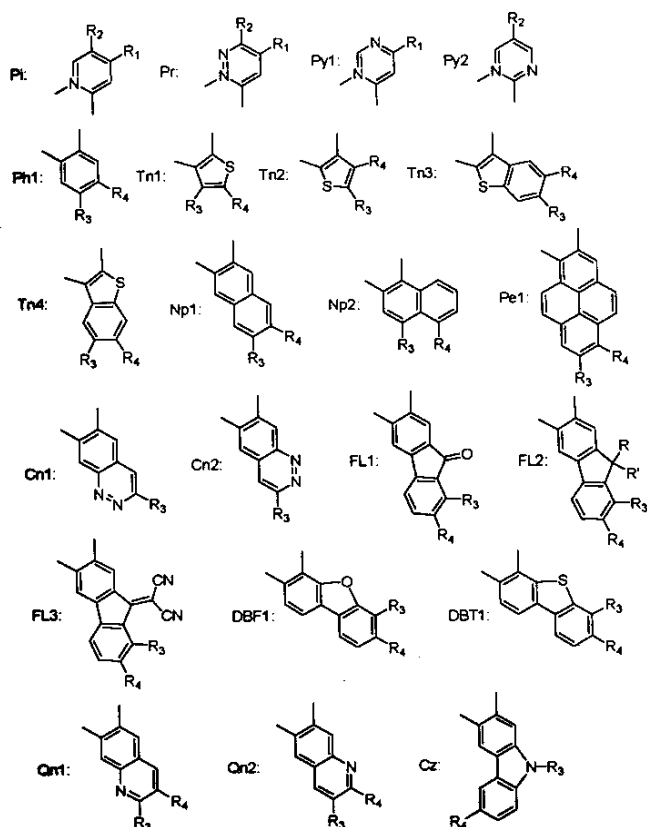
.
 () , 0.11 0.9 0.1 40 μ sec
 , , 가 , 가
 , EL
 , (1) EL 가
 , 가
 (1) , n 0 1, 0 , C=
 O ML 'n (5) , Y (5)
 CRR' . Y가 CRR' (R R' CH₃) , (1)
 , R1 R4(Pi FL2 , CyC1 FL2() (R R' CH₃ , CyN1 Pi)
 , (1) (5) (,
) 가 (5) ,
 , EL
 , (1) (5)
 , (5)
 , 가
 , 1(a), 1(b) 1(c) , (1)
 2 가
 , (TFT)
 2
 2 , EL
 (Gn) , (G1), (G2), (G3), ...,
 가
 가
 (1) , (m+m = 3)
 :



(M = Pt, Rh, Pd), 가

42 CyN1, CyN2, CyC1 CyC2 Pi CZ .

1 42 , " No" , 1



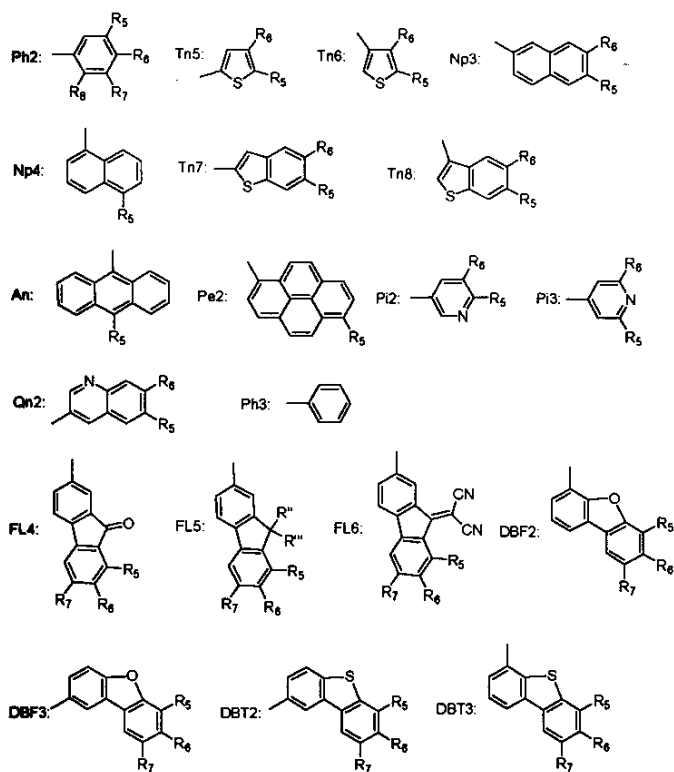
1

42

CyN1, CyN2, CyC1 CyC2
R5 R8

Ph2

DBT3



No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
										CyC1			
										R5	R6	R7	R8
1	Ir	3	0	Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
2	Ir	3	0	Pi	FL1	-	-	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
3	Ir	3	0	Pi	FL1	-	-	CF ₃	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
4	Ir	3	0	Pi	FL1	-	-	H	CH ₃	-	H	-	-
						-	-	H	H	-	-	-	-
5	Ir	3	0	Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	OC ₄ H ₉	-	-	-	-
6	Ir	3	0	Pi	FL1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
7	Ir	3	0	Pi	FL1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
8	Ir	3	0	Pi	FL1	-	-	H	FL6	H	H	H	-
						-	-	H	H	-	-	-	-
9	Ir	3	0	Pi	FL1	-	-	H	DBF2	H	H	H	-
						-	-	H	H	-	-	-	-
10	Ir	3	0	Pi	FL1	-	-	H	DBT3	H	H	H	-
						-	-	H	H	-	-	-	-
11	Ir	3	0	Pi	FL1	-	-	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
12	Ir	3	0	Pi	FL1	-	-	H	Ph2	H	C ₃ H ₇	H	H
						-	-	H	H	-	-	-	-
13	Ir	3	0	Pi	FL1	-	-	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
14	Ir	3	0	Pi	FL1	-	-	H	Np4	H	-	-	-
						-	-	H	H	-	-	-	-
15	Ir	3	0	Pi	FL1	-	-	H	Tn7	H	H	-	-
						-	-	H	H	-	-	-	-
16	Ir	3	0	Pi	Ph1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
										CyC1			
										R5	R6	R7	R8
17	Ir	3	0	Pi	Np2	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
18	Ir	3	0	Pi	FL1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
19	Ir	3	0	Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	FL4	H	H	H	H	-
20	Ir	3	0	Pi	Ph1	-	-	H	H	-	-	-	-
						C ₂ H ₅	C ₂ H ₅	FL5	H	H	H	H	-
21	Ir	3	0	Pi	Ph1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
22	Ir	3	0	Pi	Np2	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
23	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
24	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
25	Ir	3	0	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
26	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	CH ₃	-	-	-	-
						-	-	H	H	-	-	-	-
27	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	OC ₄ H ₉	-	-	-	-
28	Ir	3	0	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
29	Ir	3	0	Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
30	Ir	3	0	Pi	FL2	C ₄ H ₉	C ₄ H ₉	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
31	Ir	3	0	Pi	FL2	C ₅ H ₁₁	C ₅ H ₁₁	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
32	Ir	3	0	Pi	FL2	C ₆ H ₁₃	C ₆ H ₁₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
										CyC1			
										R5	R6	R7	R8
33	Ir	3	0	Pi	FL2	C ₇ H ₁₅	C ₇ H ₁₅	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
34	Ir	3	0	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
35	Ir	3	0	Pi	FL2	C ₁₀ H ₂₁	C ₁₀ H ₂₁	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
36	Ir	3	0	Pi	FL2	C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	H	-	-	-	-
						-	-	H	OC ₄ H ₉	-	-	-	-
37	Ir	3	0	Pi	FL2	C ₂₀ H ₄₁	C ₂₀ H ₄₁	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
38	Ir	3	0	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
39	Ir	3	0	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
40	Ir	3	0	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
41	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
42	Ir	3	0	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
43	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
44	Ir	3	0	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	FL5	H	H	H	-
						C ₂ H ₅	C ₂ H ₅	H	H	-	-	-	-
45	Ir	3	0	Pi	FL2	C ₅ H ₁₁	C ₅ H ₁₁	H	FL5	H	H	H	-
						C ₅ H ₁₁	C ₅ H ₁₁	H	H	-	-	-	-
46	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
47	Ir	3	0	Pi	FL2	C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	FL5	H	H	H	-
						C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	H	-	-	-	-
48	Ir	3	0	Pi	FL2	Ph3	Ph3	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
										CyC1			
										R5	R6	R7	R8
49	Ir	3	0	Pi	FL2	CH ₃	Ph3	H	FL5	H	H	H	-
						CH ₃	Ph3	H	H	-	-	-	-
50	Ir	3	0	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
51	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL6	H	H	H	-
						-	-	H	H	-	-	-	-
52	Ir	3	0	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	DBF2	H	H	H	-
						-	-	H	H	-	-	-	-
53	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	DBT3	H	H	H	-
						-	-	H	H	-	-	-	-
54	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
55	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	CF ₃	H	H	H
						-	-	H	H	-	-	-	-
56	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OCH ₂ C ₅ F ₁₁	H	H
						-	-	H	H	-	-	-	-
57	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OC≡C-C ₇ H ₁₅	H	H
						-	-	H	H	-	-	-	-
58	Ir	3	0	Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	Tn5	H	H	-	-
						-	-	H	H	-	-	-	-
59	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Tn6	H	H	-	-
						-	-	H	H	-	-	-	-
60	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Np3	H	H	-	-
						-	-	H	H	-	-	-	-
61	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Np4	H	-	-	-
						-	-	H	H	-	-	-	-
62	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Tn7	H	H	-	-
						-	-	H	H	-	-	-	-
63	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Tn8	H	H	-	-
						-	-	H	H	-	-	-	-
64	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	An	H	-	-	-
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
65	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Pe2	H	-	-	-
						-	-	H	H	-	-	-	-
66	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Pi2	H	H	-	-
						-	-	H	H	-	-	-	-
67	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Pi3	H	H	-	-
						-	-	H	H	-	-	-	-
68	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Qn2	H	H	-	-
						-	-	H	H	-	-	-	-
69	Ir	3	0	Pi	FL2	Ph3	Ph3	H	Np4	H	-	-	-
						-	-	H	H	-	-	-	-
70	Ir	3	0	Pi	FL2	CH ₃	Ph3	H	An	H	-	-	-
						-	-	H	H	-	-	-	-
71	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
72	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Ph2	H	H	H	H
73	Ir	3	0	Pi	FL2	Ph3	Ph3	H	FL5	H	Ph3	H	-
						Ph3	Ph3	H	Ph2	H	H	H	H
74	Ir	3	0	Pi	FL2	CH ₃	Ph3	H	FL5	H	Ph3	H	-
						CH ₃	Ph3	H	Ph2	H	H	H	H
75	Ir	3	0	Pi	FL2	CH ₃	Ph3	H	FL5	H	Ph3	H	-
						CH ₃	Ph3	H	Ph2	H	H	H	H
76	Ir	3	0	Pi	FL2	(CH ₂) ₃ Ph3	(CH ₂) ₃ Ph3	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Ph2	H	H	H	H
77	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Tn5	C ₃ H ₇	H	-	-
78	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Tn6	H	H	-	-
79	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Np3	H	H	-	-
80	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Np4	H	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
81	Ir	3	0	Pi	FL2	CH ₃	Ph3	H	FL5	H	Ph3	H	-
						CH ₃	Ph3	H	Tn7	H	H	-	-
82	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Tn8	H	H	-	-
83	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	An	H	-	-	-
84	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Pe2	H	-	-	-
85	Ir	3	0	Pi	FL2	CH ₃	Ph3	H	FL5	H	Ph3	H	-
						CH ₃	Ph3	H	Pi2	C ₂ H ₅	H	-	-
86	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Pi3	H	H	-	-
87	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Qn2	H	H	-	-
88	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	DBT3	H	H	-	-
89	Ir	3	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
90	Ir	3	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						C ₅ H ₁₁	C ₅ H ₁₁	H	H	-	-	-	-
91	Ir	3	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	CF3	-	-	-	-
92	Ir	3	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
93	Ir	3	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	Ph3	H	H	-	-	-	-
94	Ir	3	0	Pi	Tn1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
95	Ir	3	0	Pi	Tn2	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
96	Ir	3	0	Pi	Tn3	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
97	Ir	3	0	Pi	Tn4	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
98	Ir	3	0	Pi	Np1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
99	Ir	3	0	Pi	Np2	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
100	Ir	3	0	Pi	Pe1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
101	Ir	3	0	Pi	Np2	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
102	Ir	3	0	Pi	Pe2	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
103	Ir	3	0	Pi	Cn1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	-	-	-	-	-
104	Ir	3	0	Pi	Cn2	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	-	-	-	-	-
105	Ir	3	0	Pi	FL3	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
106	Ir	3	0	Pi	DBF1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
107	Ir	3	0	Pi	DBT1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
108	Ir	3	0	Pi	Qn1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
109	Ir	3	0	Pi	Qn2	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
110	Ir	3	0	Pi	Cz	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	Ph3	H	-	-	-	-
111	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
112	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Tn5	FL5	H	-	-
						CH ₃	CH ₃	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
113	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Tn6	FL5	H	-	-
						CH ₃	CH ₃	H	H	-	-	-	-
114	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Np3	FL5	H	-	-
						CH ₃	CH ₃	H	H	-	-	-	-
115	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Np4	FL5	-	-	-
						CH ₃	CH ₃	H	H	-	-	-	-
116	Ir	3	0	Pi	FL2	Ph3	Ph3	H	Tn7	FL5	H	-	-
						Ph3	Ph3	H	H	-	-	-	-
117	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Tn8	FL5	H	-	-
						Ph3	Ph3	H	H	-	-	-	-
118	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	An	FL5	-	-	-
						CH ₃	CH ₃	H	H	-	-	-	-
119	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Pe2	FL5	-	-	-
						CH ₃	CH ₃	H	H	-	-	-	-
120	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Qn2	FL5	H	-	-
						CH ₃	CH ₃	H	H	-	-	-	-
121	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL4	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
122	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
123	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL6	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
124	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	DBF2	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
125	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	DBF3	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
126	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	DBT2	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
127	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	DBT3	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
128	Ir	3	0	Pi	Ph1	-	-	H	H	-	-	-	-
						C ₆ H ₁₇	C ₆ H ₁₇	FL5	H	H	H	H	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
129	Ir	3	0	Pi	Tn1	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
130	Ir	3	0	Pi	Tn2	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
131	Ir	3	0	Pi	Tn3	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
132	Ir	3	0	Pi	Tn4	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
133	Ir	3	0	Pi	Np2	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
134	Ir	3	0	Pi	Pe1	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
135	Ir	3	0	Pi	Cn1	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	-	H	H	H	-
136	Ir	3	0	Pi	Cn2	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	-	H	H	H	-
137	Ir	3	0	Pi	FL3	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
138	Ir	3	0	Pi	DBF1	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
139	Ir	3	0	Pi	DBT1	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
140	Ir	3	0	Pi	Qn1	-	-	H	H	-	-	-	-
						CH ₃	Ph3	FL5	H	H	H	H	-
141	Ir	3	0	Pi	Qn2	-	-	H	H	-	-	-	-
						C ₅ H ₁₁	C ₅ H ₁₁	FL5	H	H	H	H	-
142	Ir	3	0	Pi	Cz	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
143	Ir	3	0	Pi	Ph1	-	-	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
144	Ir	3	0	Pi	FL3	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
										CyC1			
										R5	R6	R7	R8
145	Ir	3	0	Pi	FL3	-	-	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
146	Ir	3	0	Pi	DBF1	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
147	Ir	3	0	Pi	DBT1	CH ₃	CH ₃	H	CH ₃	-	-	-	-
						-	-	H	H	-	-	-	-
148	Ir	3	0	Pi	FL3	-	-	H	FL6	H	H	H	-
						-	-	H	H	-	-	-	-
149	Ir	3	0	Pi	DBF1	-	-	H	DBF2	H	H	H	-
						-	-	H	H	-	-	-	-
150	Ir	3	0	Pi	DBT1	-	-	H	DBT3	H	H	H	-
						-	-	H	H	-	-	-	-
151	Rh	3	0	Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
152	Rh	3	0	Pi	FL1	-	-	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
153	Rh	3	0	Pi	FL1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
154	Rh	3	0	Pi	FL1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
155	Rh	3	0	Pi	FL1	-	-	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
156	Rh	3	0	Pi	FL1	-	-	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
157	Rh	3	0	Pi	FL1	-	-	H	Np4	H	-	-	-
						-	-	H	H	-	-	-	-
158	Rh	3	0	Pi	Ph1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
159	Rh	3	0	Pi	Np2	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
160	Rh	3	0	Pi	FL1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
161	Rh	3	0	Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	FL4	H	H	H	H	-
162	Rh	3	0	Pi	Ph1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
163	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
164	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
165	Rh	3	0	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
166	Rh	3	0	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
167	Rh	3	0	Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
168	Rh	3	0	Pi	FL2	C ₄ H ₉	C ₄ H ₉	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
169	Rh	3	0	Pi	FL2	C ₅ H ₁₁	C ₅ H ₁₁	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
170	Rh	3	0	Pi	FL2	C ₆ H ₁₃	C ₆ H ₁₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
171	Rh	3	0	Pi	FL2	C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	H	-	-	-	-
						-	-	H	OC ₄ H ₉	-	-	-	-
172	Rh	3	0	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
173	Rh	3	0	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
174	Rh	3	0	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
175	Rh	3	0	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
176	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
										CyC1			
177	Rh	3	0	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	FL5	H	H	H	-
						C ₂ H ₅	C ₂ H ₅	H	H	-	-	-	-
178	Rh	3	0	Pi	FL2	C ₅ H ₁₁	C ₅ H ₁₁	H	FL5	H	H	H	-
						C ₅ H ₁₁	C ₅ H ₁₁	H	H	-	-	-	-
179	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
180	Rh	3	0	Pi	FL2	C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	FL5	H	H	H	-
						C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	H	-	-	-	-
181	Rh	3	0	Pi	FL2	Ph3	Ph3	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
182	Rh	3	0	Pi	FL2	CH ₃	Ph3	H	FL5	H	H	H	-
						CH ₃	Ph3	H	H	-	-	-	-
183	Rh	3	0	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
184	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	FL6	H	H	H	-
						-	-	H	H	-	-	-	-
185	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
186	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	CF ₃	H	H	H
						-	-	H	H	-	-	-	-
187	Rh	3	0	Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	Tn5	H	H	-	-
						-	-	H	H	-	-	-	-
188	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	Np3	H	H	-	-
						-	-	H	H	-	-	-	-
189	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	Np4	H	-	-	-
						-	-	H	H	-	-	-	-
190	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	Tn8	H	H	-	-
						-	-	H	H	-	-	-	-
191	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	An	H	-	-	-
						-	-	H	H	-	-	-	-
192	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	Pe2	H	-	-	-
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
193	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
194	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Ph2	H	H	H	H
195	Rh	3	0	Pi	FL2	Ph3	Ph3	H	FL5	H	Ph3	H	-
						Ph3	Ph3	H	Ph2	H	H	H	H
196	Rh	3	0	Pi	FL2	CH ₃	Ph3	H	FL5	H	Ph3	H	-
						CH ₃	Ph3	H	Ph2	H	H	H	H
197	Rh	3	0	Pi	FL2	(CH ₂) ₃ Ph3	(CH ₂) ₃ Ph3	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Ph2	H	H	H	H
198	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Tn5	C ₃ H ₇	H	-	-
199	Rh	3	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
200	Rh	3	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						C ₅ H ₁₁	C ₅ H ₁₁	H	H	-	-	-	-
201	Rh	3	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	CF3	-	-	-	-
202	Rh	3	0	Pi	Tn4	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
203	Rh	3	0	Pi	Np2	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
204	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
205	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	Tn5	FL5	H	-	-
						CH ₃	CH ₃	H	H	-	-	-	-
206	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	Tn6	FL5	H	-	-
						CH ₃	CH ₃	H	H	-	-	-	-
207	Rh	3	0	Pi	FL2	CH ₃	CH ₃	H	Np3	FL5	H	-	-
						CH ₃	CH ₃	H	H	-	-	-	-
208	Rh	3	0	Pi	Ph1	-	-	H	H	-	-	-	-
						C ₈ H ₁₇	C ₈ H ₁₇	FL5	H	H	H	H	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
209	Rh	3	0	Pi	Tn1	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
210	Rh	3	0	Pi	Ph1	-	-	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
211	Pt	2	0	Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
212	Pt	2	0	Pi	FL1	-	-	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
213	Pt	2	0	Pi	FL1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
214	Pt	2	0	Pi	FL1	-	-	H	DBT3	H	H	H	-
						-	-	H	H	-	-	-	-
215	Pt	2	0	Pi	FL1	-	-	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
216	Pt	2	0	Pi	FL1	-	-	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
217	Pt	2	0	Pi	FL1	-	-	H	Np4	H	-	-	-
						-	-	H	H	-	-	-	-
218	Pt	2	0	Pi	Ph1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
219	Pt	2	0	Pi	Np2	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
220	Pt	2	0	Pi	FL1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
221	Pt	2	0	Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	FL4	H	H	H	H	-
222	Pt	2	0	Pi	Ph1	-	-	H	H	-	-	-	-
						C ₂ H ₅	C ₂ H ₅	FL5	H	H	H	H	-
223	Pt	2	0	Pi	Np2	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
224	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
225	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
226	Pt	2	0	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
227	Pt	2	0	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
228	Pt	2	0	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
229	Pt	2	0	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
230	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
231	Pt	2	0	Pi	FL2	C ₅ H ₁₁	C ₅ H ₁₁	H	FL5	H	H	H	-
						C ₅ H ₁₁	C ₅ H ₁₁	H	H	-	-	-	-
232	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
233	Pt	2	0	Pi	FL2	Ph3	Ph3	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
234	Pt	2	0	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
235	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
236	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	CF ₃	H	H	H
						-	-	H	H	-	-	-	-
237	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OCH ₂ C ₅ F ₁₁	H	H
						-	-	H	H	-	-	-	-
238	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OC≡C-C ₇ H ₁₅	H	H
						-	-	H	H	-	-	-	-
239	Pt	2	0	Pi	FL2	CH ₃	Ph3	H	An	H	-	-	-
						-	-	H	H	-	-	-	-
240	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
241	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Ph2	H	H	H	H
242	Pt	2	0	Pi	FL2	Ph3	Ph3	H	FL5	H	Ph3	H	-
						Ph3	Ph3	H	Ph2	H	H	H	H
243	Pt	2	0	Pi	FL2	(CH ₂) ₃ Ph3	(CH ₂) ₃ Ph3	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Ph2	H	H	H	H
244	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Tn5	C ₃ H ₇	H	-	-
245	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	DBT3	H	H	-	-
246	Pt	2	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
247	Pt	2	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						C ₅ H ₁₁	C ₅ H ₁₁	H	H	-	-	-	-
248	Pt	2	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	CF3	-	-	-	-
249	Pt	2	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
250	Pt	2	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	Ph3	H	H	-	-	-	-
251	Pt	2	0	Pi	Tn1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
252	Pt	2	0	Pi	Np2	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
253	Pt	2	0	Pi	Pe2	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
254	Pt	2	0	Pi	Cn1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	-	-	-	-	-
255	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
256	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	Tn5	FL5	H	-	-
						CH ₃	CH ₃	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
										CyC1			
257	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	Tn6	FL5	H	-	-
						CH ₃	CH ₃	H	H	-	-	-	-
258	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	FL4	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
259	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	FL5	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
260	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	FL6	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
261	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	DBF2	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
262	Pt	2	0	Pi	FL2	CH ₃	CH ₃	H	DBF3	FL5	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
263	Pt	2	0	Pi	Ph1	-	-	H	H	-	-	-	-
						C ₈ H ₁₇	C ₈ H ₁₇	FL5	H	H	H	H	-
264	Pt	2	0	Pi	Tn1	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
265	Pt	2	0	Pi	Tn2	-	-	H	H	-	-	-	-
						CH ₃	CH ₃	FL5	H	H	H	H	-
266	Pt	2	0	Pi	Ph1	-	-	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
267	Pt	2	0	Pi	FL3	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
268	Pt	2	0	Pi	FL3	-	-	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
269	Pt	2	0	Pi	DBF1	-	-	CF ₃	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
270	Pt	2	0	Pi	DBT1	-	-	H	CH ₃	-	-	-	-
						-	-	H	H	-	-	-	-
271	Pd	2	0	Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
272	Pd	2	0	Pi	FL1	-	-	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
										CyC1			
										R5	R6	R7	R8
273	Pd	2	0	Pi	FL1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
274	Pd	2	0	Pi	FL1	-	-	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
275	Pd	2	0	Pi	FL1	-	-	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
276	Pd	2	0	Pi	FL1	-	-	H	Np4	H	-	-	-
						-	-	H	H	-	-	-	-
277	Pd	2	0	Pi	Ph1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
278	Pd	2	0	Pi	Np2	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
279	Pd	2	0	Pi	FL1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
280	Pd	2	0	Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	FL4	H	H	H	H	-
281	Pd	2	0	Pi	Np2	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
282	Pd	2	0	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
283	Pd	2	0	Pi	FL2	CH ₃	CH ₃	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
284	Pd	2	0	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
285	Pd	2	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
286	Pd	2	0	Pi	FL2	C ₅ H ₁₁	C ₅ H ₁₁	H	FL5	H	H	H	-
						C ₅ H ₁₁	C ₅ H ₁₁	H	H	-	-	-	-
287	Pd	2	0	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
288	Pd	2	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
										CyC1			
289	Pd	2	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	CF ₃	H	H	H
						-	-	H	H	-	-	-	-
290	Pd	2	0	Pi	FL2	CH ₃	CH ₃	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
291	Pd	2	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Ph2	H	H	H	H
292	Pd	2	0	Pi	FL2	Ph3	Ph3	H	FL5	H	Ph3	H	-
						Ph3	Ph3	H	Ph2	H	H	H	H
293	Pd	2	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	DBT3	H	H	-	-
294	Pd	2	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
295	Pd	2	0	Pi	Ph1	-	-	H	FL5	H	H	H	-
						C ₅ H ₁₁	C ₅ H ₁₁	H	H	-	-	-	-
296	Pd	2	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
297	Pd	2	0	Pi	FL2	CH ₃	CH ₃	H	Tn5	FL5	H	-	-
						CH ₃	CH ₃	H	H	-	-	-	-
298	Pd	2	0	Pi	Ph1	-	-	H	H	-	-	-	-
						C ₈ H ₁₇	C ₈ H ₁₇	FL5	H	H	H	H	-
299	Pd	2	0	Pi	Ph1	-	-	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
300	Pd	2	0	Pi	DBT1	-	-	H	CH ₃	-	-	-	-
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''			R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
						R	R'	CyN2-R1	CyN2-R2	CyN2			
										R5	R6	R7	R8
						R''	R'''	CyC2-R3	CyC2-R4	CyC2			
										R5	R6	R7	R8
301	Ir	2	1	Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
302	Ir	2	1	Pi	FL1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
303	Ir	2	1	Pi	FL1	-	-	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
304	Ir	2	1	Pi	FL1	-	-	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
305	Ir	2	1	Pi	FL1	-	-	H	Np4	H	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
306	Ir	2	1	Pi	Ph1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
307	Ir	2	1	Pi	Np2	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
308	Ir	2	1	Pi	FL1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
309	Ir	2	1	Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	FL4	H	H	H	H	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
310	Ir	2	1	Pi	Ph1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''			R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1			
										R5	R6	R7	R8
311	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	H	CyN2			
										R5	R6	R7	R8
				Pi	Ph1	-	-	H	H	CyC2			
										R5	R6	R7	R8
312	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	CF ₃	-	-	-	-
										-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
										-	-	-	-
313	Ir	2	1	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-
										-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
										-	-	-	-
314	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
										-	-	-	-
				Pi	Ph1	-	-	H	OC ₄ H ₉	-	-	-	-
										-	-	-	-
315	Ir	2	1	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
										-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
										-	-	-	-
316	Ir	2	1	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-
										-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
										-	-	-	-
317	Ir	2	1	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-
										-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
										-	-	-	-
318	Ir	2	1	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
										-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
										-	-	-	-
319	Ir	2	1	Pi	FL2	H	H	H	FL5	H	H	H	-
				Pi	Ph1	CH ₃	CH ₃	H	H	-	-	-	-
320	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
				Pi	Ph1	CH ₃	CH ₃	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R'	R''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1			
						R''	R'''	CyC2-R3	CyC2-R4	R5	R6	R7	R8
										CyN2			
										R5	R6	R7	R8
				CyC2									
				R5	R6	R7	R8						
321	Ir	2	1	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	FL5	H	H	H	-
						C ₂ H ₅	C ₂ H ₅	H	H	-	-	-	-
				Pr	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
322	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
				Pr	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
323	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OCH ₂ C ₅ F ₁₁	H	H
						-	-	H	H	-	-	-	-
				Py1	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
324	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OC≡C-C ₇ H ₁₅	H	H
						-	-	H	H	-	-	-	-
				Py2	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
325	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Ph2	H	H	H	H
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	CH ₃	H	-	-	-	-
326	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Tn8	H	H	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Br	H	-	-	-	-
327	Ir	2	1	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	CF ₃	H	-	-	-	-
328	Ir	2	1	Pi	Ph1	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	C ₅ H ₁₁	H	-	-	-	-
329	Ir	2	1	Pi	Np2	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	OCH ₃	H	-	-	-	-
330	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Cl	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''			R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1			
										R5	R6	R7	R8
										CyN2			
						R''	R'''	CyC2-R3	CyC2-R4	CyC2			
										R5	R6	R7	R8
331	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Tn1	-	-	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
332	Ir	2	1	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Tn1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
333	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	OC ₄ H ₉	-	-	-	-
				Pi	Tn2	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
334	Ir	2	1	Pi	FL2	C ₄ H ₉	C ₄ H ₉	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Tn3	-	-	H	H	-	-	-	-
						-	-	H	CH ₃	-	-	-	-
335	Ir	2	1	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Tn4	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
336	Ir	2	1	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Np1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
337	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Np2	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
338	Ir	2	1	Pi	FL2	C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	FL5	H	H	H	-
						C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	H	-	-	-	-
				Pi	Pe1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
339	Ir	2	1	Pi	FL2	CH ₃	Ph3	H	FL5	H	H	H	-
						CH ₃	Ph3	H	H	-	-	-	-
				Pi	Cn1	-	-	H	H	-	-	-	-
						-	-	H	-	-	-	-	-
340	Ir	2	1	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Cn2	-	-	H	H	-	-	-	-
						-	-	H	-	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1					
						R''	R'''			CyC1-R3	CyC1-R4	R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1					
						R''	R'''			CyC2-R3	CyC2-R4	R5	R6	R7	R8
						CyN2									
						CyC2									
R5	R6	R7	R8												
341	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	DBT3	H	H	H	-		
						-	-	H	H	-	-	-	-		
				Pi	FL1	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
342	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H		
						-	-	H	H	-	-	-	-		
				Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
343	Ir	2	1	Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	Tn5	H	H	-	-		
						-	-	H	H	-	-	-	-		
				Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
344	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	Np3	H	H	-	-		
						-	-	H	H	-	-	-	-		
				Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
345	Ir	2	1	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
346	Ir	2	1	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
347	Ir	2	1	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	FL3	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
348	Ir	2	1	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	DBF1	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
349	Ir	2	1	Pi	FL2	H	H	H	FL5	H	H	H	-		
						CH ₃	CH ₃	H	H	-	-	-	-		
				Pi	DBT1	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
350	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-		
						CH ₃	CH ₃	H	H	-	-	-	-		
				Pi	Qn1	-	-	H	H	-	-	-	-		
						-	-	Cl	H	-	-	-	-		

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1			
										R5	R6	R7	R8
						R	R'	CyN2-R1	CyN2-R2	CyN2			
										R5	R6	R7	R8
						R	R'	CyC2-R3	CyC2-R4	CyC2			
										R5	R6	R7	R8
351	Ir	2	1	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	FL5	H	H	H	-
						C ₂ H ₅	C ₂ H ₅	H	H	-	-	-	-
				Pr	Qn2	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
352	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
				Pr	Cz	-	-	H	H	-	-	-	-
						-	-	Ph3	H	-	-	-	-
353	Rh	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OCH ₂ C ₅ F ₁₁	H	H
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
354	Rh	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OC≡C-C ₇ H ₁₅	H	H
						-	-	H	H	-	-	-	-
				Py2	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
355	Rh	2	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Ph2	H	H	H	H
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	CH ₃	H	-	-	-	-
356	Rh	2	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Tn8	H	H	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Br	H	-	-	-	-
357	Rh	2	1	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	CF ₃	H	-	-	-	-
358	Rh	2	1	Pi	Ph1	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	C ₅ H ₁₁	H	-	-	-	-
359	Rh	2	1	Pi	Np2	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	OCH ₃	H	-	-	-	-
360	Rh	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Cl	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''			CyC1-R3	CyC1-R4	R5	R6
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1			
						R''	R'''			CyC2-R3	CyC2-R4	R5	R6
										CyN2			
										CyC2			
				R5	R6	R7	R8						
361	Ir	1	2	Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
362	Ir	1	2	Pi	FL1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
363	Ir	1	2	Pi	FL1	-	-	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
364	Ir	1	2	Pi	FL1	-	-	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
365	Ir	1	2	Pi	FL1	-	-	H	Np4	H	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
366	Ir	1	2	Pi	Ph1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
367	Ir	1	2	Pi	Np2	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
368	Ir	1	2	Pi	FL1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
369	Ir	1	2	Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	FL4	H	H	H	H	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
370	Ir	1	2	Pi	Ph1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''			R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
						R''	R'''	CyN2-R1	CyN2-R2	CyN2			
										R5	R6	R7	R8
								CyC2-R3	CyC2-R4	CyC2			
										R5	R6	R7	R8
371	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
372	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
373	Ir	1	2	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
374	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	OC ₄ H ₉	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
375	Ir	1	2	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
376	Ir	1	2	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
377	Ir	1	2	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
378	Ir	1	2	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
379	Ir	1	2	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
380	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Cl	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''			R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1			
						R''	R'''			R5	R6	R7	R8
381	Ir	1	2	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	FL5	CyN2			
						C ₂ H ₅	C ₂ H ₅			R5	R6	R7	R8
				Pr	Ph1	-	-	H	H	CyC2			
						-	-			R5	R6	R7	R8
382	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	Ph2				
						-	-			H	H	H	H
				Pr	Ph1	-	-	H	H				
						-	-			-	-	-	-
383	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	Ph2				
						-	-			H	OCH ₂ C ₅ F ₁₁	H	H
				Py1	Ph1	-	-	H	H				
						-	-			-	-	-	-
384	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	Ph2				
						-	-			H	OC≡C-C ₇ H ₁₅	H	H
				Py2	Ph1	-	-	H	H				
						-	-			-	-	-	-
385	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	FL5				
						CH ₃	CH ₃			H	Ph3	H	-
				Pi	Ph1	-	-	H	H				
						-	-			-	-	-	-
386	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	FL5				
						CH ₃	CH ₃			H	Ph3	H	-
				Pi	Ph1	-	-	H	H				
						-	-			-	-	-	-
387	Ir	1	2	Pi	Ph1	-	-	H	FL5				
						CH ₃	CH ₃			H	H	H	-
				Pi	Ph1	-	-	H	H				
						-	-			-	-	-	-
388	Ir	1	2	Pi	Ph1	-	-	H	FL5				
						Ph3	Ph3			H	H	H	-
				Pi	Ph1	-	-	H	H				
						-	-			-	-	-	-
389	Ir	1	2	Pi	Np2	-	-	H	FL5				
						Ph3	Ph3			H	H	H	-
				Pi	Ph1	-	-	H	H				
						-	-			-	-	-	-
390	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	Ph2				
						CH ₃	CH ₃			H	FL5	H	H
				Pi	Ph1	-	-	H	H				
						-	-			-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1					
						R''	R'''			CyC1-R3	CyC1-R4	R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1					
						R''	R'''			CyC2-R3	CyC2-R4	R5	R6	R7	R8
										CyN2					
										R5	R6	R7	R8		
				CyC2											
				R5	R6	R7	R8								
391	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	Tn1	-	-	H	CF ₃	-	-	-	-		
						-	-	H	H	-	-	-	-		
392	Ir	1	2	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	Tn1	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
393	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-		
						-	-	H	OC ₄ H ₉	-	-	-	-		
				Pi	Tn2	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
394	Ir	1	2	Pi	FL2	C ₄ H ₉	C ₄ H ₉	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	Tn3	-	-	H	H	-	-	-	-		
						-	-	H	CH ₃	-	-	-	-		
395	Ir	1	2	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	Tn4	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
396	Ir	1	2	Pi	FL2	H	H	H	FL5	H	H	H	-		
						CH ₃	CH ₃	H	H	-	-	-	-		
				Pi	Np1	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
397	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-		
						CH ₃	CH ₃	H	H	-	-	-	-		
				Pi	Np2	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
398	Ir	1	2	Pi	FL2	C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	FL5	H	H	H	-		
						C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	H	-	-	-	-		
				Pi	Pe1	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
399	Ir	1	2	Pi	FL2	CH ₃	Ph3	H	FL5	H	H	H	-		
						CH ₃	Ph3	H	H	-	-	-	-		
				Pi	Cn1	-	-	H	H	-	-	-	-		
						-	-	H	-	-	-	-	-		
400	Ir	1	2	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	FL5	H	H	H	-		
						CH ₃	CH ₃	H	H	-	-	-	-		
				Pi	Cn2	-	-	H	H	-	-	-	-		
						-	-	H	-	-	-	-	-		

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''			R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1			
						R''	R'''			R5	R6	R7	R8
401	Ir	1	2	Pi	FL2	R	R'	CyN2-R1	CyN2-R2	CyN2			
						R''	R'''			R5	R6	R7	R8
				Pi	FL1	R	R'	CyC2-R3	CyC2-R4	CyC2			
						R''	R'''			R5	R6	R7	R8
402	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	DBT3	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
403	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
				Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
404	Ir	1	2	Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	Tn5	H	H	-	-
						-	-	H	H	-	-	-	-
				Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
405	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	Np3	H	H	-	-
						-	-	H	H	-	-	-	-
				Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
406	Ir	1	2	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
407	Ir	1	2	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	FL3	C ₃ H ₇	C ₃ H ₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
408	Ir	1	2	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	DBF1	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
409	Ir	1	2	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	DBT1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
410	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Qn1	-	-	H	H	-	-	-	-
						-	-	Cl	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''			R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
411	Ir	1	2	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	FL5	CyN2			
										R5	R6	R7	R8
				Pr	Qn2	-	-	H	H	CyC2			
										R5	R6	R7	R8
412	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
				Pr	Cz	-	-	H	H	-	-	-	-
						-	-	Ph3	H	-	-	-	-
413	Rh	1	2	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OCH ₂ C ₅ F ₁₁	H	H
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
414	Rh	1	2	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OC≡C-C ₇ H ₁₅	H	H
						-	-	H	H	-	-	-	-
				Py2	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
415	Rh	1	2	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Ph2	H	H	H	H
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	CH ₃	H	-	-	-	-
416	Rh	1	2	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Tn8	H	H	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Br	H	-	-	-	-
417	Rh	1	2	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	CF ₃	H	-	-	-	-
418	Rh	1	2	Pi	Ph1	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	C ₅ H ₁₁	H	-	-	-	-
419	Rh	1	2	Pi	Np2	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	OCH ₃	H	-	-	-	-
420	Rh	1	2	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Cl	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1			
						R''	R'''	CyC2-R3	CyC2-R4	R5	R6	R7	R8
										CyN2			
										CyC2			
				R5	R6	R7	R8						
421	Pt	1	1	Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
422	Pt	1	1	Pi	FL3	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
423	Pt	1	1	Pi	FL1	-	-	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
424	Pt	1	1	Pi	FL1	-	-	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
425	Pt	1	1	Pi	FL1	-	-	H	Np4	H	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
426	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
427	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
428	Pt	1	1	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
429	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	OC ₄ H ₉	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
430	Pt	1	1	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1					
						R''	R'''			CyC1-R3	CyC1-R4	R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1					
						R''	R'''			CyC2-R3	CyC2-R4	R5	R6	R7	R8
										CyN2					
										R5	R6	R7	R8		
				CyC2											
				R5	R6	R7	R8								
431	Pt	1	1	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	FL5	H	H	H	-		
						C ₂ H ₅	C ₂ H ₅	H	H	-	-	-	-		
				Pr	Ph1	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
432	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H		
						-	-	H	H	-	-	-	-		
				Pr	Ph1	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
433	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OCH ₂ C ₅ F ₁₁	H	H		
						-	-	H	H	-	-	-	-		
				Py1	Ph1	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
434	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OC≡C-C ₇ H ₁₅	H	H		
						-	-	H	H	-	-	-	-		
				Py2	Ph1	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
435	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-		
						CH ₃	CH ₃	H	Ph2	H	H	H	H		
				Pi	Ph1	-	-	H	H	-	-	-	-		
						-	-	CH ₃	H	-	-	-	-		
436	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	Tn1	-	-	H	CF ₃	-	-	-	-		
						-	-	H	H	-	-	-	-		
437	Pt	1	1	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	Tn1	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
438	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-		
						-	-	H	OC ₄ H ₉	-	-	-	-		
				Pi	Tn2	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
439	Pt	1	1	Pi	FL2	C ₆ H ₉	C ₆ H ₉	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	Tn3	-	-	H	H	-	-	-	-		
						-	-	H	CH ₃	-	-	-	-		
440	Pt	1	1	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
				Pi	Tn4	-	-	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''			R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1			
						R''	R'''			R5	R6	R7	R8
441	Pt	1	1	Pi	FL2	R	R'	CyN2-R1	CyN2-R2	CyN2			
						R''	R'''			R5	R6	R7	R8
				Pi	FL1	R	R'	CyC2-R3	CyC2-R4	CyC2			
						R''	R'''			R5	R6	R7	R8
441	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	DBT3	H	H	H	-
						-	-			-	-	-	-
				Pi	FL1	-	-	H	H	-	-	-	-
						-	-			-	-	-	-
442	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-			-	-	-	-
				Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-			-	-	-	-
443	Pt	1	1	Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	Tn5	H	H	-	-
						-	-			-	-	-	-
				Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-			-	-	-	-
444	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	Np3	H	H	-	-
						-	-			-	-	-	-
				Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-			-	-	-	-
445	Pt	1	1	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
						-	-			-	-	-	-
				Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-			-	-	-	-
446	Pt	1	1	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	FL5	H	H	H	-
						C ₂ H ₅	C ₂ H ₅			-	-	-	-
				Pr	Qn2	-	-	H	H	-	-	-	-
						-	-			-	-	-	-
447	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-			-	-	-	-
				Pr	Cz	-	-	H	H	-	-	-	-
						-	-			-	-	-	-
448	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OCH ₂ C ₅ F ₁₁	H	H
						-	-			-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-			-	-	-	-
449	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OC≡C-C ₇ H ₁₅	H	H
						-	-			-	-	-	-
				Py2	Ph1	-	-	H	H	-	-	-	-
						-	-			-	-	-	-
450	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃			H	H	H	H
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-			-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''			R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1			
						R''	R'''			R5	R6	R7	R8
451	Pt	1	1	Pi	Ph1	R	R'	CyN2-R1	CyN2-R2	CyN2			
						R''	R'''			R5	R6	R7	R8
				Pi	Ph1	R	R'	CyC2-R3	CyC2-R4	CyC2			
						R''	R'''			R5	R6	R7	R8
451	Pt	1	1	Pi	Ph1	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
452	Pt	1	1	Pi	Np2	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
453	Pt	1	1	Pi	FL1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
454	Pt	1	1	Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	FL4	H	H	H	H	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
455	Pt	1	1	Pi	Ph1	-	-	H	Ph2	H	FL4	H	H
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
456	Pt	1	1	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
457	Pt	1	1	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
458	Pt	1	1	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
459	Pt	1	1	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
460	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Cl	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
										R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyN2			
										R5	R6	R7	R8
						R''	R'''	CyC2-R3	CyC2-R4	CyC2			
										R5	R6	R7	R8
461	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Tn8	H	H	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Br	H	-	-	-	-
462	Pt	1	1	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	CF ₃	H	-	-	-	-
463	Pt	1	1	Pi	Ph1	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	C ₅ H ₁₁	H	-	-	-	-
464	Pt	1	1	Pi	Np2	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	OCH ₃	H	-	-	-	-
465	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Cl	H	-	-	-	-
466	Pd	1	1	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Np1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
467	Pd	1	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Np2	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
468	Pd	1	1	Pi	FL2	C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	FL5	H	H	H	-
						C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	H	-	-	-	-
				Pi	Pe1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
469	Pd	1	1	Pi	FL2	CH ₃	Ph3	H	FL5	H	H	H	-
						CH ₃	Ph3	H	H	-	-	-	-
				Pi	Cn1	-	-	H	H	-	-	-	-
						-	-	H	-	-	-	-	-
470	Pd	1	1	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Cn2	-	-	H	H	-	-	-	-
						-	-	H	-	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyC1			
						R''	R'''	CyC2-R3	CyC2-R4	R5	R6	R7	R8
										CyN2			
										R5	R6	R7	R8
				CyC2									
				R5	R6	R7	R8						
471	Pd	1	1	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
472	Pd	1	1	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	FL3	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
473	Pd	1	1	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	DBF1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
474	Pd	1	1	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	DBT1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
475	Pd	1	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Qn1	-	-	H	H	-	-	-	-
						-	-	Cl	H	-	-	-	-
476	Pd	1	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Tn8	H	H	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Br	H	-	-	-	-
477	Pd	1	1	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	CF ₃	H	-	-	-	-
478	Pd	1	1	Pi	Ph1	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	C ₅ H ₁₁	H	-	-	-	-
479	Pd	1	1	Pi	Np2	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	OCH ₃	H	-	-	-	-
480	Pd	1	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	Cl	H	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
										CyC1			
										R5	R6	R7	R8
										R5	R6	R7	R8
481	Ir	3	0	Pi	FL1	-	-	H	H	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
482	Ir	3	0	Pi	FL1	-	-	H	CF ₃	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
483	Ir	3	0	Pi	FL1	-	-	H	FL4	H	H	H	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
484	Ir	3	0	Pi	FL1	-	-	H	Ph2	H	H	H	H
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
485	Ir	3	0	Pi	FL1	-	-	H	FL4	H	Ph3	H	-
						-	-	-CH=CH-CH=CH-	H	H	H	H	H
486	Ir	3	0	Pi	FL1	-	-	H	Np4	H	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
487	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
488	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	CF ₃	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
489	Ir	3	0	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
490	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	CH ₃	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
491	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
492	Ir	3	0	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	H	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
493	Ir	3	0	Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	H	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
494	Ir	3	0	Pi	FL2	C ₄ H ₉	C ₄ H ₉	H	H	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
495	Ir	3	0	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
496	Ir	3	0	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
497	Ir	3	0	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	-CH=CH-CH=CH-	-	-	-	-	-
498	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	-CH=CH-CH=CH-	-	-	-	-	-
499	Ir	3	0	Pi	FL2	C ₂ H ₅	C ₂ H ₅	H	FL5	H	H	H	-
						C ₂ H ₅	C ₂ H ₅	-CH=CH-CH=CH-	-	-	-	-	-
500	Ir	3	0	Pi	FL2	C ₅ H ₁₁	C ₅ H ₁₁	H	FL5	H	H	H	-
						C ₅ H ₁₁	C ₅ H ₁₁	-CH=CH-CH=CH-	-	-	-	-	-
501	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						C ₈ H ₁₇	C ₈ H ₁₇	-CH=CH-CH=CH-	-	-	-	-	-
502	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	-CH=CH-CH=CH-	-	-	-	-	-

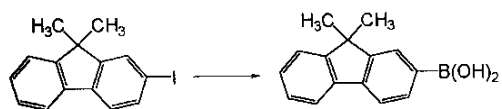
No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
										CyC1			
										R5	R6	R7	R8
503	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	CF ₃	H	H	H
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
504	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OCH ₂ C ₅ F ₁₁	H	H
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
505	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OC≡C-C ₇ H ₁₅	H	H
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
506	Ir	3	0	Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	Tn5	H	H	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
507	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Tn6	H	H	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
508	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Np3	H	H	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
509	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Np4	H	-	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
510	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Tn7	H	H	-	-
						-	-	-CH=CH-CH=CH-	-	-	-	-	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
										CyC1			
										R5	R6	R7	R8
										E			
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
511	Ir	2	1	Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
						CH ₃	-	-	-	-	-	-	-
						CH ₃	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-
512	Ir	2	1	Pi	FL1	-	-	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
						CF ₃	-	-	-	-	-	-	-
						CF ₃	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-
513	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
						CH ₃	-	-	-	-	-	-	-
						CH ₃	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-
514	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
						Ph2	-	-	-	H	H	H	H
						Ph2	-	-	-	H	H	H	H
						-	-	-	-	-	-	-	-
515	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	OC ₄ H ₉	-	-	-	-
						Ph2	-	-	-	H	C ₃ H ₇	H	H
						Ph2	-	-	-	H	C ₃ H ₇	H	H
						-	-	-	-	-	-	-	-
516	Ir	2	1	Pi	FL2	C ₆ H ₁₃	C ₆ H ₁₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
						CH ₃	-	-	-	-	-	-	-
						FL5	CH ₃	CH ₃	-	H	H	H	-
						-	-	-	-	-	-	-	-
517	Ir	2	1	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
						Tn5	-	-	-	H	H	-	-
						Tn5	-	-	-	H	H	-	-
						-	-	-	-	-	-	-	-
518	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
						Tn6	-	-	-	H	H	-	-
						Tn6	-	-	-	H	H	-	-
						-	-	-	-	-	-	-	-
519	Ir	2	1	Pi	FL2	Ph3	Ph3	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
						CH ₃	-	-	-	-	-	-	-
						CH ₃	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-
520	Ir	2	1	Pi	FL2	CH ₃	Ph3	H	FL5	H	H	H	-
						CH ₃	Ph3	H	H	-	-	-	-
						CF ₃	-	-	-	-	-	-	-
						CF ₃	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-

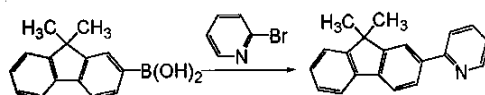
No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''			CyC1			
										R5	R6	R7	R8
						E	R''			E			
										R5	R6	R7	R8
						G	R''			G			
										R5	R6	R7	R8
521	Ir	2	1	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
						Np3	-	-	-	CH ₃ O	H	-	-
						Np3	-	-	-	CH ₃ O	H	-	-
522	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
						Np4	-	-	-	F	-	-	-
						Np4	-	-	-	F	-	-	-
523	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OCH ₂ C ₅ F ₁₁	H	H
						-	-	H	H	-	-	-	-
						Tn7	-	-	-	CH ₃	-	-	-
						Tn7	-	-	-	CH ₃	-	-	-
524	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OC≡C-C ₇ H ₁₅	H	H
						-	-	H	H	-	-	-	-
						Tn8	-	-	-	H	-	-	-
						Tn8	-	-	-	H	-	-	-
525	Ir	2	1	Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	Tn5	H	H	-	-
						-	-	H	H	-	-	-	-
						Pe2	-	-	-	H	-	-	-
						Pe2	-	-	-	H	-	-	-
526	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
						Pi2	-	-	-	H	H	-	-
						Pi2	-	-	-	H	H	-	-
527	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	FL5	H	Ph3	H	-
						CH ₃	CH ₃	H	Ph2	H	H	H	H
						Pi3	-	-	-	CH ₃	CH ₃	H	H
						Pi3	-	-	-	CH ₃	CH ₃	H	H
528	Ir	2	1	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
						FL4	-	-	-	H	H	H	-
						FL4	-	-	-	H	H	H	-
529	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	FL5	H	H
						CH ₃	CH ₃	H	H	-	-	-	-
						FL5	C ₂ H ₅	C ₂ H ₅	-	H	H	H	-
						FL5	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	-	H	H	H	-
530	Ir	2	1	Pi	Ph1	-	-	H	H	-	-	-	-
						C ₈ H ₁₇	C ₈ H ₁₇	FL5	H	H	H	H	-
						DBF2	-	-	-	H	H	H	-
						DBF2	-	-	-	H	H	H	-

No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1								
										E	R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8
															CyC1			
															R5	R6	R7	R8
															G			
R5	R6	R7	R8															
531	Ir	2	1	Pi	Ph1	-	-	H	Ph2	H	FL5	H	H					
						CH ₃	CH ₃	H	H	-	-	-	-					
						DBT3	-	-		H	H	H	-					
						DBT3	-	-		H	H	H	-					
532	Rh	2	1	Pi	FL3	CH ₃	CH ₃	H	H	-	-	-	-					
						-	-	H	H	-	-	-	-					
						CH ₃	-	-		-	-	-	-					
						CH ₃	-	-		-	-	-	-					
533	Rh	2	1	Pi	DBF1	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-					
						-	-	H	H	-	-	-	-					
						CF ₃	-	-		-	-	-	-					
						CF ₃	-	-		-	-	-	-					
534	Rh	2	1	Pi	FL1	-	-	H	FL5	H	H	H	-					
						CH ₃	CH ₃	H	H	-	-	-	-					
						Qn2	-	-		H	H	-	-					
						Qn2	-	-		H	H	-	-					
535	Rh	2	1	Pi	Np2	-	-	H	FL4	H	H	H	-					
						-	-	H	H	-	-	-	-					
						Np3	-	-		H	H	-	-					
						Np3	-	-		H	H	-	-					
536	Pt	1	1	Pi	FL2	C ₂ H ₇	C ₃ H ₇	H	H	-	-	-	-					
						-	-	H	H	-	-	-	-					
						CH ₃	-	-		-	-	-	-					
						CH ₃	-	-		-	-	-	-					
537	Pt	1	1	Pi	FL2	C ₅ H ₁₁	C ₅ H ₁₁	H	H	-	-	-	-					
						-	-	H	H	-	-	-	-					
						CF ₃	-	-		-	-	-	-					
						CF ₃	-	-		-	-	-	-					
538	Pd	1	1	Pi	FL2	C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	FL5	H	H	H	-					
						C ₁₅ H ₃₁	C ₁₅ H ₃₁	H	H	-	-	-	-					
						CH ₃	-	-		-	-	-	-					
						CH ₃	-	-		-	-	-	-					
539	Pd	1	1	Pi	FL2	CH ₃	CH ₃	H	Np3	H	H	-	-					
						-	-	H	H	-	-	-	-					
						CF ₃	-	-		-	-	-	-					
						CF ₃	-	-		-	-	-	-					
540	Ir	1	2	Pi	Tn4	-	-	H	FL5	H	H	H	-					
						CH ₃	CH ₃	H	H	-	-	-	-					
						CH ₃	-	-		-	-	-	-					
						CH ₃	-	-		-	-	-	-					

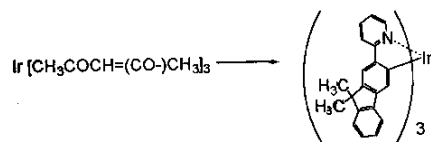
1 1(23)



3 30 ℓ , 2 - 9,9 - 307.3g(960mM) THF()
 10 ℓ , - 72 70 , n -
 1.6M 1 , 2 , - 73 - 71 ,
 , THF 1.3 ℓ 209.5g(2016mM) 2 ,
 , 4N - 1.6 ℓ 0 - 7 0.5 가 , 1
 , 가 가 ,
 (: / = 1/1) , 2 - (9,9 -)
 () 32.0g(: 14.0%) .



3 300Mℓ , 2 - 8.5g(53.8mM), 2 - (9,9 -) 12.8g(53.8m
 M), 55Mℓ, 27Mℓ 2M - 55Mℓ ,
 () (0) 1.97g(1.70mM) 가 , 5.5
 , 가
 , (: /THF
 = 10/1) (/ = 8/1) , 2 - { 2 - (9,9 -) } ()
) 12.2g(: 83.6%) .

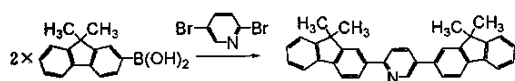


4 100Mℓ , 50Mℓ , 130 140 2 가 .
 , 100 , 2 - { 2 - (9,9 -) } 1.69g(6.23mM)
 (III) 0.50g(1.02mM) 가 , 176 219 5 가
 , 1N - 300Mℓ , 10
 0 5 .
 , [2 - (9,9 - - 2 -) - C³,N] (III) 0.17g(=21.3%)
 . MALDI - TOF MS(matrix - assisted laser desorption ionization - time of flight mass spectroscopy)
 , 1003.4 M⁺ (1) .

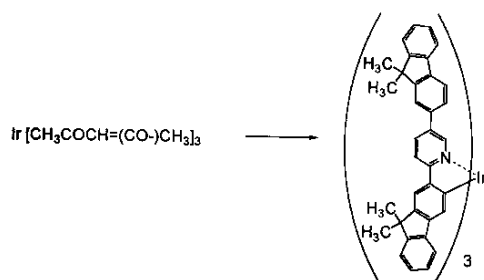
, λ max()=545nm, 0.23 .

, (23) , , 가

2 2(43)



3 100Mℓ , 2,5 - 1.18g(4.98mM), 1 2 - (9,9 -
) 3.57g(15.0mM), 10Mℓ, 5Mℓ 2M - 10Mℓ ,
 , () (0) 0.35g(0.30mM) 가 . ,
 12 . ,
 . 100Mℓ 가 , , ,
 (:) , 2 - { 2 - (9,9 -) } ()
 2.10g(: 91.0%) .



4 100Mℓ , 50Mℓ , 130 140 2 가 .
 , 100 , 2 - { 2 - (9,9 -) } 1.85g(3.99mM)
 (III) 0.40g(0.82mM) 가 , 180 235 5 가
 , 1N - 300Mℓ , 10
 0 5 .
 , [2,5 - (9,9 - - 2 -) - C³,N] (III) 0.10g(=7.7%)
 . MALDI - TOF MS , 1589.6 M⁺ .

, λ max = 591nm, 0.12 .

3 11 3 11

1(b) .

1.1mm ((15)) , ITO(indium tin oxide) 100nm ((14))
 , , 100nm, 10nm(, 110nm) 10
 0 .

ITO가 , 3 2 , (10⁻⁴ Pa)
 가 () .

1((13))(40nm): α - NPD

2((12))(30nm): CBP : (45)(95:5)

3((16))(30nm): Alq3

1((11))(15nm): Al - Li (Li = 1.8 %)

2((11))(100nm): Al

1 2(Al - Li Al) , 100nm, 10nm(= 110nm) 100
 20 ITO , ITO
 3mm² 15 Al(Al - Li) ,

, , () , ()

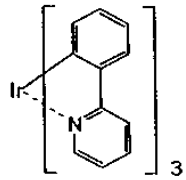
, ITO() () Al() () 70mA/cm²
 가 , ()
 (60 220cd/cm²) 1/2 () .

45 .

1 1

3 11 , Ir (45 Ir - (Ir(ppy)₃)

:



3 11 가 가 .
45 .

[1]

									(Hr)
3	4	5	6	7	8	9	62343547299118153440I	7008509508008507506007006	
10	11	1	r(ppy) ₃					50350	

45 , (1) , Ir(ppy)₃
() EL 가 (1)

12 12

2 EL .

, 6,114,715 가 .

, 1.1mm , TFT , ,
() .

, ITO 700nm ()
. ITO , 100nm Al ()
, , (128×128) .

3 ((R), (G) (B)) .

< R >

α - NPD(40nm)/CBP: 487(93:7) (30nm)/BCP(20nm)/Alq3(40nm)

< G >

α - NPD(50nm)/Alq3(50nm)

< B >

α - NPD(50nm)/BCP(20nm)/Alq3(50nm)

EL

,

,

13(24) 13(24)

1 2 - 2 - - 5 - ()
1 가[2 - (9,9 - - 2 -) - 5 - - C³,N] (III).

14(25) 14(25)

1 2 - 2 - - 4,5 - () (Oakwo
od Products Inc.)) , 1 가 .[2 - (9,9 - - 2 -) - 4,5 - () - C³,N] (III).

15(26) 15(26)

1 2 - 2 - - 5 - () ,
1 가[2 - (9,9 - - 2 -) - 5 - - C³,N] (III).

16(28) 16(28)

가 11 - 510535 (5,708,130) 32 1
2 - 2 - - 9,9 - , ()
1 가 2 - (9,9 -) , 2 - 2 - {2 - (9,9
) } , 1 가 (III)
1 가 .[2 - (9,9 - - 2 -) - C³,N] (III).

17(29) 17(29)

16 1 - () , 16
가 .{2 - [9,9 - (1 -) - 2 -] - C³,N} (III).

18(30) 18(30)

16 1 - () , 16
가 .{2 - [9,9 - (1 -) - 2 -] - C³,N} (III).

19(31) 19(31)

가 16 1 - () , 16

{2 - [9,9 - (1 -) - 2 -] - C³,N} (III).

20(32) 20(32)

가 16 1 - () , 16

{2 - [9,9 - (1 -) - 2 -] - C³,N} (III).

21(33) 21(33)

가 16 1 - () , 1

{2 - [9,9 - (1 -) - 2 -] - C³,N} (III).

22(34) 22(34)

가 16 1 - () , 16

{2 - [9,9 - (1 -) - 2 -] - C³,N} (III).

23(35) 23(35)

2 - 16 - 5 - 1 - () , 2 - 16 가 () ,

{2 - [9,9 - (1 -) - 2 -] - 5 - - C³,N} (III).

24(37) 24(37)

가 16 1 - () , 16

{2 - [9,9 - (1 -) - 2 -] - C³,N} (III).

25(44) 25(44)

2 2 - (9,9 -) 2 - (9,9 -)

가 , 2 가 .

[2,5 - (9,9 - - 2 -) - C³,N} (III).

26(45) 26(45)

2 2 - (9,9 -) 2 - [9,9 - (1 -)]
 , 2 가 .

{2,5 - [9,9 - (1 -) - 2 -] - C^3 ,N} (III).

27(47) 27(47)

2 2 - (9,9 -) 2 - [9,9 - (1 -)]
 , 2 가 .

{2,5 - [9,9 - (1 -) - 2 -] - C^3 ,N} (III).

28(146) 28(146)

1 2 - (9,9 -) - 4 - ()
 , 1 가 .

[2 - (- 4 -) - C^3 ,N] (III).

29(147) 29(147)

1 2 - (9,9 -) - 4 - ()
 , 1 가 .

[2 - (- 4 -) - C^3 ,N] (III).

30(149) 30(149)

1 2 - (9,9 -) - 4 - ()
 , 2 가 .

[2,5 - (- 4 -) - C^3 ,N] (III).

31(150) 31(150)

2 2 - (9,9 -) - 4 - ()
 , 2 가 .

[2,5 - (- 4 -) - C^3 ,N] (III).

32 32

1(c) EL .

1.1mm 100nm ITO () , 0.1nm/
 (10^{-4} Pa) α - NPD 40nm . , 가
 0.1nm/ (CBP) 0.09nm/ () CBP :
 23 (93:7) 40nm () , 0.1nm/
 BCP() 40nm , 0.1nm/
 Alq3 20nm . , 0.1nm/
 150nm () .

EL , 100cd/m² 12.4 lm/W, 600cd/m²
 13.6 lm/W, , $\lambda_{\text{max}} = 545\text{nm}$ EL .

33 33

1 [2 - (9,9 - - 2 -) - C³,N] (III)(23)
 [2,5 - (9,9 - - 2 -) - - C³,N] (III)(43)
 32 가 EL 가 .

EL , 100cd/m² 2.4 lm/W, 300cd/m²
 1.9 lm/W, , $\lambda_{\text{max}} = 590\text{nm}$ EL .

34(54) 34(54)

1 2 - 4 - - 1 - ()
 1 가 .

[2 - (9,9 - - 2 -) - 4 - - C³,N] (III).

, , (5) (1)
 , (1)
 () , 가 , ,
 .

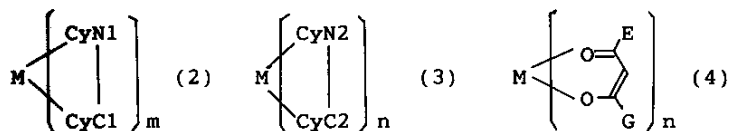
(57)

1.

(1):

$ML_m L'_n (1)$

{ , M Ir, Pt, Rh Pd ; L L' 2 ; m 1, 2 3 , n 0,
 1 2 , , m+n 2 3 ; ML_m (2) , ML'_n
 (3) (4):

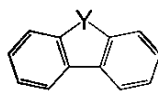


[, CyN1 CyN2 , M ,
; CyC1 CyC2 , M ,
CyN1 CyC1 , CyN2
CyC2 , ;

가
C - 1 , 가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡
2 , , 가
(, , 가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡
C - 1 2 1 20 , , 가
1 20)

E G , 가
(, , 가
C - 1 , 가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡
2 , , 가
1 20)
;

1 , CyC1 CyC2 , (5):



(5)

[(5) , 가 CyN1, CyN2, CyC1 C
yC2 , (5) , 가 CyC1 CyC2 M

Y C=O, CRR', C=C(CN)₂, O S(, R R' , 1 8
가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡ C - 1
2 , , 가
(, , 가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡ C - 1
2 , , 가
1 20)) ;

(5) , , 가
C - 1 , 가 - O - , - S - , - CO - , - CO - O - , - O - CO - , - CH=CH - - C ≡
2 , , 가
1 20 ,

(
C- , 1 , , 가 -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH=CH- -C≡
2 , , 가
1 20)
 , , 가
] }

2.

1 , (1) (3) ML'_n
.

3.

1 , (1) (4) ML'_n
.

4.

1 , (1) $n = 0$.

5.

1 , (5) Y가 C=O CRR' .

6.

1 , CyC1 CyC2 , 가 , 가 1 2 CH
, , , 9- , , , , ,
.

7.

1 , CyC1 CyC2 , 2-
.

8.

1 , CyN1 CyN2 , , ,
.

9.

1 , 가 .

10.

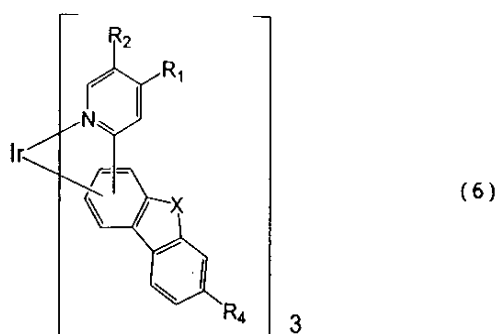
1, CyN1, CyN2, CyC1, CyC2
 $\{ \text{---O---}, \text{---S---}, \text{---CO---}, \text{---CO---O---}, \text{---O---CO---}, \text{---CH=CH---} \}$
 $\text{---C}\equiv\text{C---}$
 (---O---)
 2가 } .

11.

1, (1) M .

12.

1, (6):



$\{ \text{---X---CRR'}, \text{O---S[---R---R'} : \text{C}_n\text{H}_{2n+1} \text{---} (\text{---}, n \text{---} 1 \text{---} 20 \text{---}, \text{---O---} \text{---}) \}$

R2 ; ; $\text{C}_n\text{H}_{2n+1} \text{---} (\text{---}, n \text{---} 1 \text{---} 20 \text{---}, \text{---O---} \text{---})$
 ; 9,9- [$\text{C}_n\text{H}_{2n+1} \text{---} (\text{---}, n \text{---} 1 \text{---} 20 \text{---}, \text{---O---} \text{---})$]
 ;
 ; 9,9-
 $\text{C}_n\text{H}_{2n+1} \text{---} (\text{---}, n \text{---} 1 \text{---} 20 \text{---}, \text{---O---} \text{---})$
) }

13.

1, 1
 ,

1 (1)

.

14.

13 , 가

.

15.

13 , 가

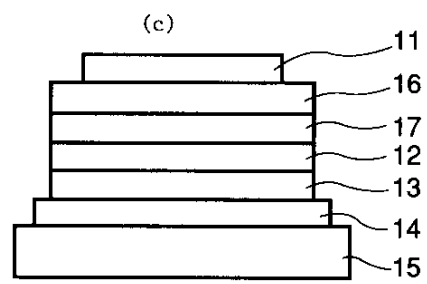
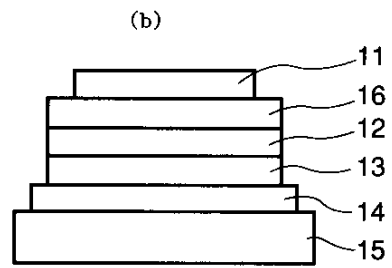
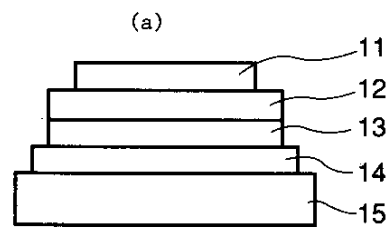
.

16.

13

.

1



2

[illegible]

专利名称(译)	金属配位化合物，发光器件和显示器件		
公开(公告)号	KR1020020072215A	公开(公告)日	2002-09-14
申请号	KR1020020012316	申请日	2002-03-08
[标]申请(专利权)人(译)	佳能株式会社		
申请(专利权)人(译)	佳能sikki有限公司		
当前申请(专利权)人(译)	佳能sikki有限公司		
[标]发明人	TAKIGUCHI TAKAO 타키구치타카오 OKAKA SHINJIRO 오카다신지로 TSUBOYAMA AKIRA 츠보야마아키라 MIURA SEISHI 미우라세이시 MORIYAMA TAKASHI 모리야마타카시 KAMATANI JUN 카마타니준 FURUGORI MANABU 후루고리마나부		
发明人	타키구치타카오 오카다신지로 츠보야마아키라 미우라세이시 모리야마타카시 카마타니준 후루고리마나부		
IPC分类号	H01L51/00 C07F15/00 H01L51/50 H01L51/30 C09K11/06		
CPC分类号	C07F15/0033 H01L51/5012 H01L51/0059 H01L51/0085 H01L51/0081		
代理人(译)	SHIN , JOONG HOON		
优先权	2001064254 2001-03-08 JP 2002042522 2002-02-20 JP		
其他公开文献	KR100488869B1		
外部链接	Espacenet		

摘要(译)

提供了一种具有含有特定金属配位化合物的层的电致发光器件。其中金属配位化合物由下式 (1) 表示： $ML_m L\&\#39;n (1) - 1$ - 其中M是Ir, Pt, Rh或Pd的金属原子; L和L&\#39;是不同的双末端配体; m为1,2或3, n为0,1或2, 条件是m + n为2或3;部分结构ML m由下面的公式 (2) 表示, 部分结构ML&\#39;n由下面的公式 (3) 或 (4) 表示 环状基团的任意取代基和环状基团CyCl和CyC2中的至少一个通过包括具有由下式 (5) 表示的取代基的环状基团来表示: 具有芳族基团的金属配位化合物对于提供高效发光和长期高亮度是有效的。 1

