

(19)
(12)

(KR)
(A)

(51) 。 Int. Cl. ⁷
C09K 11/06

(11)
(43)

2002 - 0072215
2002 09 14

(21) 10 - 2002 - 0012316
(22) 2002 03 08

(30) JP - P - 2001 - 00064254 2001 03 08 (JP)
JP - P - 2002 - 00042522 2002 02 20 (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

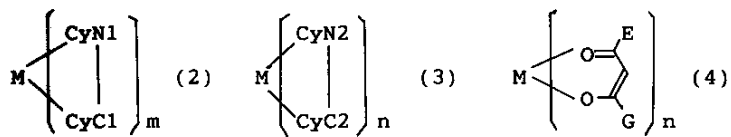
(74)
:

(54) ,

가 . , (1):

ML_mL_h(1)

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



1 , CyC1 CyC2 , (5):



}

1

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

2

< >

11: 12:

13: 14:

15: 16:

17:

가 (1) EL (Thin Solid Films, 94 (1982) 171). 가

, Macromol. Symp. 125, 1 - 48(1997) EL 1

Alq3) (- 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))

4

가

Alq3:

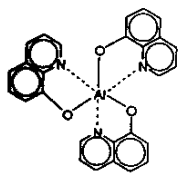
- NPD: N4,N4' - - 1 - - N4,N4' - - 4,4' -

CBP: 4,4' - N,N' - -

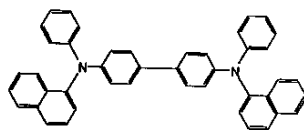
BCP: 2,9 - - 4,7 - - 1,10 -

PtOEP: -

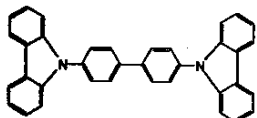
Ir(ppy)₃: -



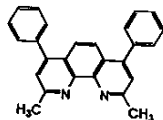
Alq3



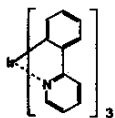
α-NPD



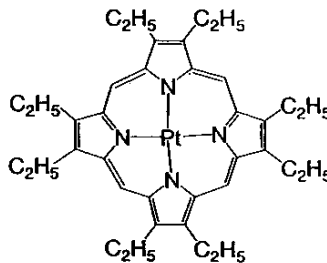
CBP



BCP



Ir(ppy)₃



PtOEP

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

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

3

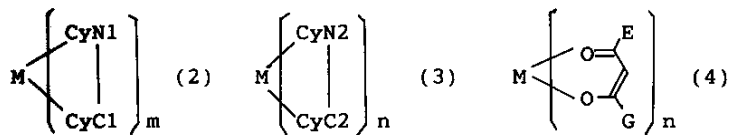
가

(5)

(1):

$ML_m L_h(1)$

{ , 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'_h (3) (4):

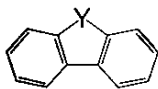


[, CyN1 CyN2 , M ,
 ; CyC1 CyC2 , M ,
 CyN1 CyC1 , CyN2
 CyC2 , ;

C- 1 , 가 -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH=CH- -C 1 8
 (, 가 -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH=CH- -C 1 20
 C- 1 , 가)

E G , 가 1 20
 (, 가 1 8
 C- 1 , 가 -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH=CH- -C 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 1 8
 C- 1 , 가 -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH=CH- -C 1 20
 2 , 가

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

R2 ; ; : C_nH_{2n+1} - (, n 1 20 , , -O- 1) 2 ; ; ; 9,9- (1 , : C_nH_{2n+1} - (, n 1 20 , , -O-) 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) , 가 (12) (13) . (14)

(14)

(13)

ITO

(11)

D

(12) , () . (13) , - NP

가 가 , (11) (12) 가 , (15) (14)

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

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

1(c) (14) (13), (12), (17) (16) 4

(1) (5) 가 MLCT* (metal - to - ligand charge transfer)

(1)

가

(2) (st)

$$I / I_0(st) = [Sem(I) / Iabs(I)] / [Sem(st) / Iabs(st)]$$

[Iabs(st) ; Sem(st) ; Iabs(I) ; Sem(I)]



(3)

337nm 0.1µm (

I_0 , t() () :

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

() , 0.11 0.9 0.1 40 μ sec

가 , 가

, EL

(1) 가 EL 가

O ML'n CRR' . Y가 CRR' (R R' CH) , (1) 0 1, 0 . , C= (5) , Y (5) , CyC1 FL2() (R R' CH3 , CyN1 Pi) , R1 R4(Pi FL2)

(1) (5) (5) () ,

, EL

(1) (5)

가

2 , 1(a), 1(b) 1(c) 가 , (1)

(TFT)

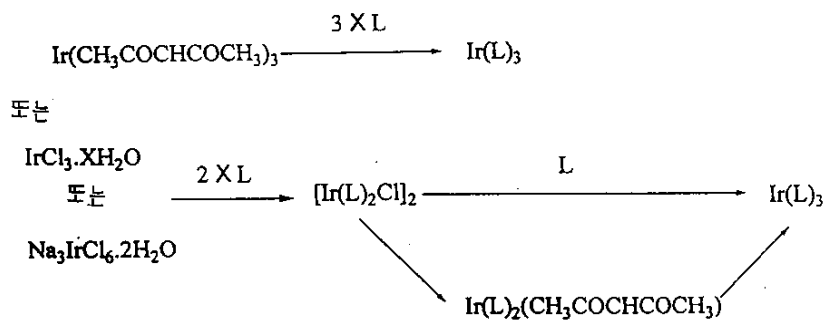
2

2 , EL

(Gn) , 가 (G1), (G2), (G3), ...,

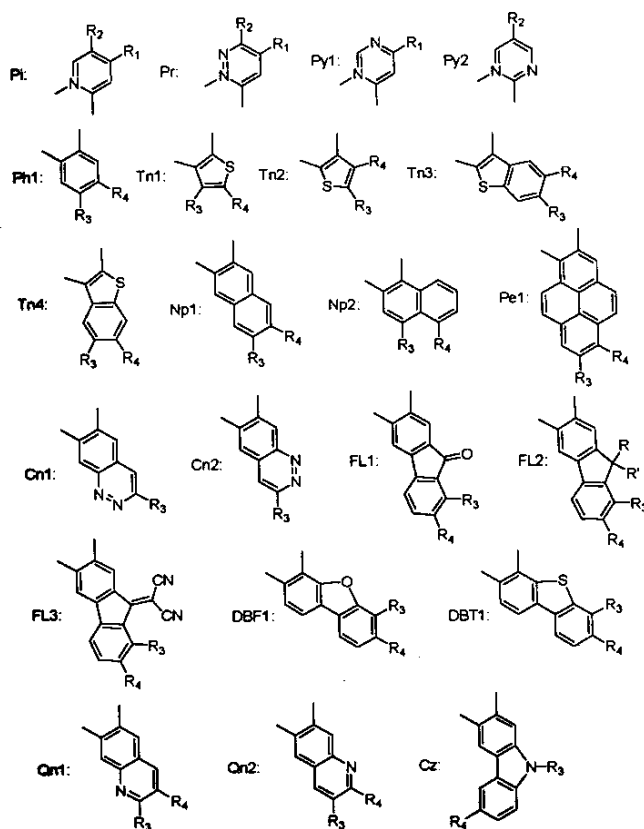
가

(1) : (m+m = 3)



(M =Pt, Rh Pd) , 가

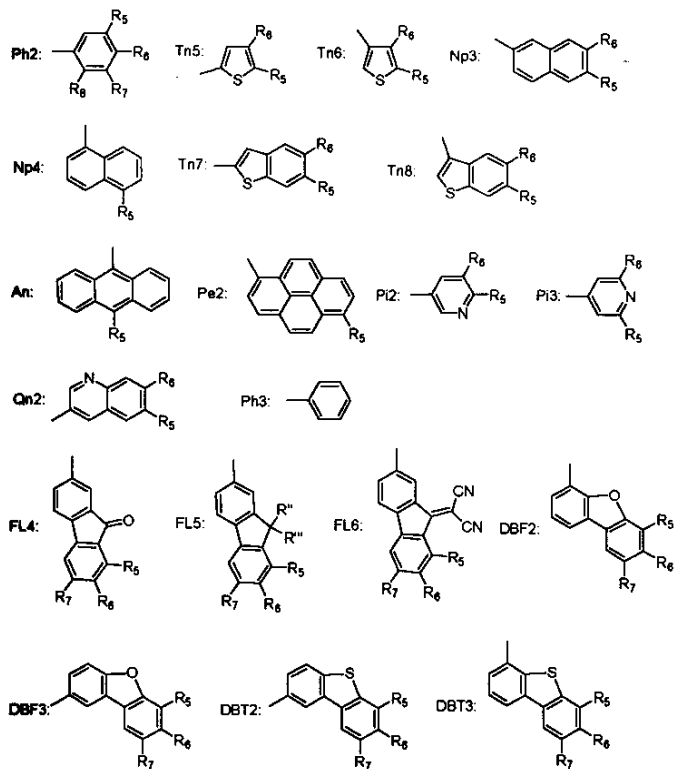
42 CyN1, CyN2, CyC1 CyC2 Pi CZ " No" 1



1 42

CyN1, CyN2, CyC1 CyC2
R5 R8

Ph2 DBT3



No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	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			
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							
										R5	R6	R7	R8				
										R''	R'''	CyC1-R3	CyC1-R4	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	Ph ₃	Ph ₃	H	H	-	-	-	-				
						-	-	H	H	-	-	-	-				
39	Ir	3	0	Pi	FL2	CH ₃	Ph ₃	H	H	-	-	-	-				
						-	-	H	H	-	-	-	-				
40	Ir	3	0	Pi	FL2	(CH ₂) ₅ Ph ₃	(CH ₂) ₅ Ph ₃	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	Ph ₃	Ph ₃	H	FL5	H	H	H	-				
						Ph ₃	Ph 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
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 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
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			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	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
										CyC1			
R''	R'''	CyC1-R3	CyC1-R4	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	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			
										R5	R6	R7	R8
										R''	R'''	CyC1-R3	CyC1-R4
R5	R6	R7	R8										
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			
										R5	R6	R7	R8
										R''	R'''	CyC1-R3	CyC1-R4
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			
										R5	R6	R7	R8
										R''	R'''	CyC1-R3	CyC1-R4
R5	R6	R7	R8										
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	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			
										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
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'''			CyC1-R3	CyC1-R4	R5	R6
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyN2			
						R''	R'''			CyC2-R3	CyC2-R4	R5	R6
311	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
312	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
313	Ir	2	1	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
314	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	OC ₄ H ₉	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
315	Ir	2	1	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
316	Ir	2	1	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
317	Ir	2	1	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
318	Ir	2	1	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
319	Ir	2	1	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
320	Ir	2	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
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 ₃ 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			
										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				
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			
										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
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	DBF	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
349	Ir	2	1	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	DBT	-	-	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			
						R''	R'''			CyC1-R3	CyC1-R4	R5	R6
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyN2			
						R''	R'''			CyC2-R3	CyC2-R4	R5	R6
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	R7	R8
										CyC1			
						R	R'	CyN2-R1	CyN2-R2	CyN2			
						R''	R'''	CyC2-R3	CyC2-R4	R5	R6	R7	R8
										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			
										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
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			
										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
381	Ir	1	2	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	-	-	-	-
382	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
				Pr	Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
383	Ir	1	2	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	-	-	-	-
384	Ir	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	-	-	-	-
385	Ir	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	-	-	-	-
386	Ir	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	-	-	-	-
387	Ir	1	2	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	CF ₃	H	-	-	-	-
388	Ir	1	2	Pi	Ph1	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	C ₅ H ₁₁	H	-	-	-	-
389	Ir	1	2	Pi	Np2	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
						-	-	OCH ₃	H	-	-	-	-
390	Ir	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			
										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
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			
										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
401	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	DBT3	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
402	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	-	-	-	-
403	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	-	-	-	-
404	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	-	-	-	-
405	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	-	-	-	-
406	Ir	1	2	Pi	FL2	Ph3	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	FL2	C ₃ H ₇	C ₃ H ₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
407	Ir	1	2	Pi	FL2	CH ₃	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	FL3	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
408	Ir	1	2	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Pi	DBF1	-	-	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			
										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
411	Ir	1	2	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	-	-	-	-
412	Ir	1	2	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
				Pr	Cz	-	-	H	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	-	-	-	-
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	-	-	-	-
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	-	-	-	-
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	-	-	-	-
417	Rh	1	2	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
418	Rh	1	2	Pi	Ph1	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	H	-	-	-	-
419	Rh	1	2	Pi	Np2	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
				Pi	Ph1	-	-	H	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	-	-	-	-

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
421	Pt	1	1	Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
					Ph1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
422	Pt	1	1	Pi	FL3	-	-	H	FL4	H	H	H	-
						-	-	H	H	-	-	-	-
				Ph1	-	-	H	H	-	-	-	-	
					-	-	H	H	-	-	-	-	
423	Pt	1	1	Pi	FL1	-	-	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
				Ph1	-	-	H	H	-	-	-	-	
					-	-	H	H	-	-	-	-	
424	Pt	1	1	Pi	FL1	-	-	H	FL4	H	Ph3	H	-
						-	-	H	Ph2	H	H	H	H
				Ph1	-	-	H	H	-	-	-	-	
					-	-	H	H	-	-	-	-	
425	Pt	1	1	Pi	FL1	-	-	H	Np4	H	-	-	-
						-	-	H	H	-	-	-	-
				Ph1	-	-	H	H	-	-	-	-	
					-	-	H	H	-	-	-	-	
426	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Ph1	-	-	H	H	-	-	-	-	
					-	-	H	H	-	-	-	-	
427	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
				Ph1	-	-	H	H	-	-	-	-	
					-	-	H	H	-	-	-	-	
428	Pt	1	1	Pi	FL2	CH ₃	CH ₃	CF ₃	CF ₃	-	-	-	-
						-	-	H	H	-	-	-	-
				Ph1	-	-	H	H	-	-	-	-	
					-	-	H	H	-	-	-	-	
429	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	OC ₄ H ₉	-	-	-	-
				Ph1	-	-	H	H	-	-	-	-	
					-	-	H	H	-	-	-	-	
430	Pt	1	1	Pi	FL2	C ₈ H ₁₇	C ₈ H ₁₇	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
				Ph1	-	-	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	
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyN2				
										R5	R6	R7	R8	
						R''	R'''	CyC2-R3	CyC2-R4	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 ₂ H ₅	C ₂ H ₅	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			
										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
441	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	DBT3	H	H	H	-
						-	-	H	H	-	-	-	-
				Pi	FL1	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
442	Pt	1	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	-	-	-	-
443	Pt	1	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	-	-	-	-
444	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	Np3	H	H	-	-
						-	-	H	H	-	-	-	-
				Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
445	Pt	1	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	-	-	-	-
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	H	H	-	-	-	-
				Pr	Qn2	-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
447	Pt	1	1	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	H	H	H
						-	-	H	H	-	-	-	-
				Pr	Cz	-	-	H	H	-	-	-	-
						-	-	Ph3	H	-	-	-	-
448	Pt	1	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	-	-	-	-
449	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	-	-	-	-
450	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	-	-	-	-

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					
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	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) ₃ Ph3	(CH ₂) ₃ 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	-	-
						-	-	H	H	-	-	-	-
						-	-	Br	H	-	-	-	-
462	Pt	1	1	Pi	Ph1	-	-	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
						-	-	CF ₃	H	-	-	-	-
463	Pt	1	1	Pi	Ph1	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
						-	-	C ₅ H ₁₁	H	-	-	-	-
464	Pt	1	1	Pi	Np2	-	-	H	FL5	H	H	H	-
						Ph3	Ph3	H	H	-	-	-	-
						-	-	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	-	-	-	-
						-	-	H	H	-	-	-	-
						-	-	Cl	H	-	-	-	-
466	Pd	1	1	Pi	FL2	H	H	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
						-	-	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	-	-	-	-
						-	-	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	-	-	-	-
						-	-	H	H	-	-	-	-
						-	-	H	H	-	-	-	-
469	Pd	1	1	Pi	FL2	CH ₃	Ph3	H	FL5	H	H	H	-
						CH ₃	Ph3	H	H	-	-	-	-
						-	-	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	-	-	-	-
						-	-	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
				CyN2	CyC2	R	R'	CyN2-R1	CyN2-R2	CyN2			
										R5	R6	R7	R8
						R''	R'''	CyC2-R3	CyC2-R4	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 ₃ 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			
										R5	R6	R7	R8
										CyC1			
R''	R'''	CyC1-R3	CyC1-R4	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	
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-	-	-	-	-	

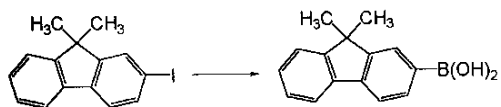
No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
										CyC1			
R''	R'''	CyC1-R3	CyC1-R4	R5	R6	R7	R8						
				503	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
504	Ir	3	0	Pi	FL2	CH ₃	CH ₃	H	Ph2	H	OCH ₂ C ₅ F ₁₁	H	H
						-	-	-CH=CH-CH=CH-	-	-	-	-	-
505	Ir	3	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
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
						R''	R'''	E					
						R''	R'''	G					
						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	-	-	-	-
						Ph ₂	-	-	-	H	H	H	H
						Ph ₂	-	-	-	H	H	H	H
515	Ir	2	1	Pi	FL2	CH ₃	CH ₃	H	H	-	-	-	-
						-	-	H	OC ₄ H ₉	-	-	-	-
						Ph ₂	-	-	-	H	C ₃ H ₇	H	H
						Ph ₂	-	-	-	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	Ph ₃	Ph ₃	H	FL5	H	H	H	-
						Ph ₃	Ph ₃	H	H	-	-	-	-
						CH ₃	-	-	-	-	-	-	-
						CH ₃	-	-	-	-	-	-	-
520	Ir	2	1	Pi	FL2	CH ₃	Ph ₃	H	FL5	H	H	H	-
						CH ₃	Ph ₃	H	H	-	-	-	-
						CF ₃	-	-	-	-	-	-	-
						CF ₃	-	-	-	-	-	-	-

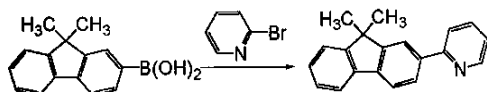
No	M	m	n	CyN1	CyC1	R	R'	CyN1-R1	CyN1-R2	CyN1			
										R5	R6	R7	R8
						R''	R'''	CyC1-R3	CyC1-R4	CyC1			
						R5	R6			R7	R8		
						E	R''	R'''	E				
						R5	R6	R7	R8				
						G	R''	R'''	G				
						R5	R6	R7	R8				
521	Ir	2	1	Pi	FL2	(CH ₂) ₅ Ph3	(CH ₂) ₅ Ph3	H	FL5	H	H	H	-
						CH ₃	CH ₃	H	H	-	-	-	-
						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	H
						DBF2	-	-	-	H	H	H	-
						DBF2	-	-	-	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					
						R''	R'''					R5	R6	R7	R8
						E					E				
						R''	R'''					R5	R6	R7	R8
						G					G				
						R''	R'''					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	-	-	-	-	-	-	-		
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	-	-		
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 ₃ H ₇	C ₃ H ₇	H	H	-	-	-	-		
						-	-	H	H	-	-	-	-		
						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	-	-	-	-	-	-	-		

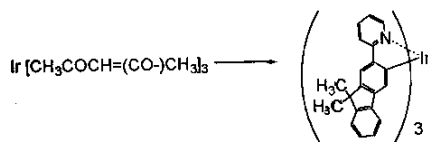
1 1(23)



3 30 , 2- -9,9- 307.3g(960mM) THF()
 10 , -72 70 , n-
 1.6M 1 , 2 , -73 -71 ,
 , THF 1.3 209.5g(2016mM) 2 ,
 , 4N- 1.6 0 -7 0.5 가 , 1
 , 가 가 ,
 (: / = 1/1) , -
 , - THF 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
 = 10/1) (/ = 8/1) , 2 - { 2 - (9,9-) } (: /THF
) 12.2g(: 83.6%) .

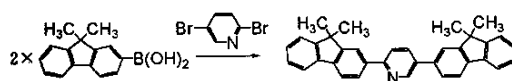


4 100ml , 50ml , 130 140 2 가 .
 , 100 , 2 - { 2 - (9,9 -) } 1.69g(6.23mM)
 (III) 0.50g(1.02mM) 가 , 176 219 5 가
 , 1N - 300ml , 10
 0 5 .
 , [2 - (9,9 - - 2 -) - C³,N] (III) 0.17g(=21.3%)
 . MALDI - TOF MS(matrix - assisted laser desorption ionization - time of flight mass spectroscopy)
 , 1003.4 M⁺ (1)

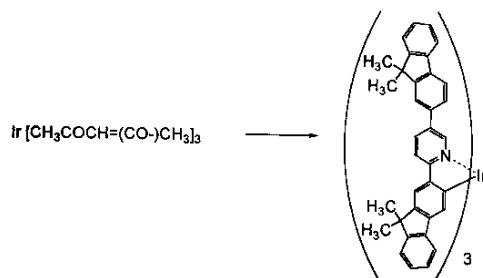
, max() = 545nm, 0.23

, (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⁺ .

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): - 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
 , ITO , ITO
 20 ITO 15 Al(Al - Li)

3mm²

, , () , ()

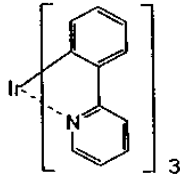
, ITO() () Al() () 70mA/cm²

(60 220cd/cm²) 1/2 가 ()

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 >

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

< G >

- NPD(50nm)/Alq3(50nm)

< B >

- 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)

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

27(47) 27(47)
 2 2 - (9,9-) 2 - [9,9- (1-)]
 , 2 가 .

{2,5- [9,9- (1-) -2-] -C³,N} (III).

28(146) 28(146)
 1 2 - (9,9-) -4- ()
 , 1 가 .

[2- (-4-) -C³,N] (III).

29(147) 29(147)
 1 2 - (9,9-) -4- ()
 , 1 가 .

[2- (-4-) -C³,N] (III).

30(149) 30(149)
 1 2 - (9,9-) -4- ()
 , 2 가 .

[2,5- (-4-) -C³,N] (III).

31(150) 31(150)
 2 2 - (9,9-) -4- ()
 , 2 가 .

[2,5- (-4-) -C³,N] (III).

32 32

1(c) EL .

1.1mm (10⁻⁴ Pa) - NPD 100nm ITO () , 0.1nm/가
 23 0.1nm/ (CBP) 0.09nm/ () CBP : , 0.1nm/
 BCP() 40nm , 0.1nm/
 Alq3 20nm , 0.1nm/
 150nm () .
 EL , 100cd/m² 12.4 lm/W, 600cd/m²
 13.6 lm/W, , max = 545nm EL
 33 33

1 [2,5- (9,9- [2- (9,9- -2-) -C³,N] (III)(23)
 32 가 EL 가 (III)(43)
 EL , 100cd/m² 2.4 lm/W, 300cd/m²
 1.9 lm/W, , max = 590nm EL
 34(54) 34(54)

1 2- 4- -1- ()
 1 가
 [2- (9,9- -2-) -4- -C³,N] (III).

(5) (1) (1)
 () , 가 , ,

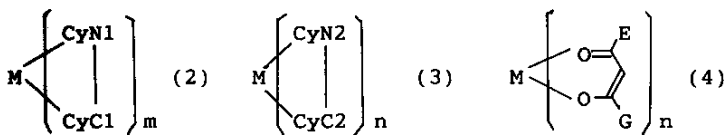
(57)

1.

(1):

ML_mL_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)
 (3) (4):

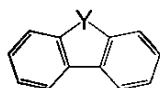


[, CyN1 CyN2 , M ,
 ; CyC1 CyC2 , M ,
 CyN1 CyC1 , CyN2
 CyC2 , ;

C- 1 , 가 1 8
 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 1 20
 (, 가 1 8
 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 8
 2 , 가
 , 가 -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH=CH- -C C- 1
 2 1 20 , 가
 1 20)) ;

(5) , 가 1 8
 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.

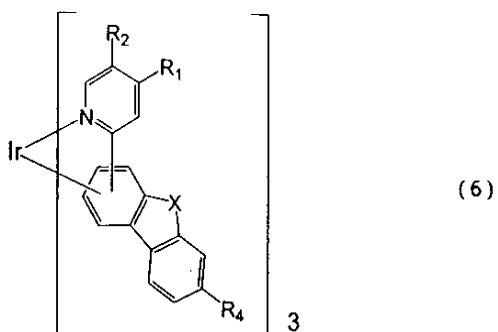
1, CyN1, CyN2, CyC1, CyC2
 { -O-, -S-, -CO-, -CO-O-, -O-CO-, -CH=CH-
 -C-C- (-O-)]
 2가 }

11.

(1) M

12.

(6):



{ X, CRR', O S[R R' : C_nH_{2n+1} - (n 1 20 ,
 -O-)] ;
 R2 ; ; : C_nH_{2n+1} - (n 1 20 , -O- 1
) ; 9,9- [1
 , : C_nH_{2n+1} - (n 1 20 , -O- 1
)] ;
 ; 9,9- ,
 : C_nH_{2n+1} - (n 1 20 , -O- 1
) }

13.

1, 1

1 (1)

14.

13 , 가

15.

13 , 가

16.

13

1

