Table 1. Crystal data and structure refinement for **5**.

Identification code	w28sa
Empirical formula	$C_{30.50}H_{37}ClN_2P_2PtRu_2S_2$
Formula weight	990.36
Temperature	198(2) K
Wavelength	0.71073 Å
Crystal system	Monoclinic
Space group	$P2_1/n$
Unit cell dimensions	a = 23.3481(4) Å alpha = 90°
	b = 12.3868(2) Å beta = 92.7560(10)°
	c = 23.81910(10) Å gamma = 90°
Volume, Z	6880.7(2) Å^3, 8
Density (calculated)	1.912 Mg/m^3
Absorption coefficient	5.238 mm^{-1}
F(000)	3832
Crystal size	0.24 x 0.30 x 0.38 mm
θ range for data collection	1.25 to 28.61°
Limiting indices	$-30 \le h \le 31$, $-16 \le k \le 12$, $-31 \le l \le 29$
Reflections collected	42449
Independent reflections	16318 (R_{int} = 0.0644)
Absorption correction	Integration
Max. and min. transmission	0.3632 and 0.1757
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	16289 / 0 / 730
Goodness-of-fit on F^2	1.114
Final R indices [$I>2\sigma(I)$]	R1 = 0.0445, wR2 = 0.0862
R indices (all data)	R1 = 0.0860, wR2 = 0.1105
Largest diff. peak and hole	2.532 and -1.459 eÅ^{-3}

Table 2. Atomic coordinates (x 10^4) and equivalent isotropic displacement parameters ($Å^2$ x 10^3) for (dppe)$Pt(\mu_3\text{-}S)_2[RuN(CH_3)_2]_2$. U(eq) is defined as one third of the trace of the orthogonalized Uij tensor.

	x	y	z	U(eq)
Pt(1)	18771(1)	-7745(1)	7908(1)	22(1)
Ru(1)	19583(1)	-5807(1)	7613(1)	32(1)
Ru(2)	19101(1)	-5920(1)	8852(1)	28(1)
S(1)	19660(1)	-7195(2)	8331(1)	28(1)
S(2)	18615(1)	-5855(2)	7936(1)	26(1)
P(1)	18977(1)	-9528(2)	7866(1)	26(1)
P(2)	17893(1)	-8222(2)	7545(1)	22(1)
N(1)	19606(4)	-6253(7)	6981(3)	53(2)
N(2)	19470(3)	-4858(6)	9006(3)	42(2)
C(1)	20445(3)	-5402(8)	7833(5)	57(3)
C(2)	19497(4)	-4118(7)	7541(4)	46(2)
C(3)	18307(4)	-5563(8)	9195(3)	42(2)
C(4)	19196(4)	-6973(8)	9546(4)	45(2)
C(5)	19385(3)	-9894(6)	7263(3)	29(2)
C(6)	19300(4)	-10849(9)	6977(5)	70(4)
C(7)	19622(5)	-11104(11)	6519(6)	87(5)
C(8)	20018(5)	-10405(9)	6340(5)	60(3)
C(9)	20113(5)	-9463(10)	6622(5)	75(4)
C(10)	19800(5)	-9206(8)	7078(4)	55(3)
C(11)	19337(3)	-10185(7)	8473(4)	37(2)
C(12)	19696(4)	-11064(8)	8419(5)	56(3)
C(13)	19921(5)	-11572(11)	8909(7)	86(5)
C(14)	19780(5)	-11213(12)	9431(6)	86(5)
C(15)	19415(5)	-10365(10)	9485(5)	71(4)
C(16)	19193(4)	-9825(8)	9008(4)	49(2)
C(17)	17593(3)	-7597(6)	6907(3)	26(2)
C(18)	17042(4)	-7860(7)	6707(3)	36(2)
C(19)	16827(4)	-7475(7)	6192(4)	44(2)
C(20)	17152(4)	-6784(7)	5888(4)	45(2)
C(21)	17695(4)	-6500(7)	6080(4)	45(2)
C(22)	17928(4)	-6903(7)	6591(3)	36(2)
C(23)	17341(3)	-8122(6)	8064(3)	25(2)
C(24)	17304(3)	-7158(7)	8366(3)	30(2)
C(25)	16912(3)	-7044(7)	8775(3)	36(2)
C(26)	16565(3)	-7918(8)	8903(3)	39(2)
C(27)	16594(4)	-8850(8)	8606(4)	42(2)
C(28)	16989(3)	-8973(7)	8192(3)	36(2)
C(29)	18296(3)	-10255(7)	7779(3)	30(2)
C(30)	17914(3)	-9647(6)	7344(3)	23(2)
Pt(2)	22643(1)	-3683(1)	8783(1)	23(1)
Ru(3)	23512(1)	-1948(1)	9292(1)	32(1)
Ru(4)	22141(1)	-1623(1)	9403(1)	29(1)
S(3)	22729(1)	-1816(2)	8594(1)	28(1)
S(4)	22791(1)	-3041(2)	9711(1)	29(1)
P(3)	22576(1)	-5423(2)	9048(1)	25(1)
P(4)	22497(1)	-4301(2)	7893(1)	24(1)
N(3)	23632(3)	-851(6)	9630(3)	48(2)
N(4)	21492(3)	-1996(6)	9259(3)	41(2)

C(31)	24122(4)	-3056(8)	9629(4)	48(2)
C(32)	24065(4)	-1888(8)	8614(4)	46(2)
C(33)	22161(4)	-1173(7)	10262(3)	42(2)
C(34)	22159(4)	62(7)	9289(4)	40(2)
C(35)	21873(3)	-5797(7)	9274(3)	31(2)
C(36)	21770(4)	-6849(7)	9452(4)	44(2)
C(37)	21227(5)	-7149(9)	9608(5)	64(3)
C(38)	20784(5)	-6412(10)	9595(5)	64(3)
C(39)	20892(4)	-5364(9)	9415(4)	50(2)
C(40)	21429(3)	-5054(7)	9256(3)	35(2)
C(41)	23087(3)	-5886(6)	9596(3)	27(2)
C(42)	22963(4)	-5755(8)	10157(3)	43(2)
C(43)	23363(4)	-6030(8)	10581(4)	49(2)
C(44)	23887(4)	-6442(9)	10450(4)	57(3)
C(45)	24022(5)	-6571(11)	9895(5)	71(4)
C(46)	23622(4)	-6279(8)	9470(4)	48(2)
C(47)	21906(3)	-3728(6)	7456(3)	27(2)
C(48)	21515(3)	-3048(7)	7693(3)	36(2)
C(49)	21046(4)	-2683(8)	7361(4)	43(2)
C(50)	20963(4)	-3008(7)	6808(4)	43(2)
C(51)	21351(4)	-3680(8)	6580(4)	43(2)
C(52)	21828(3)	-4059(7)	6896(3)	34(2)
C(53)	23125(3)	-4251(6)	7463(3)	29(2)
C(54)	23365(4)	-3277(8)	7351(4)	47(2)
C(55)	23834(5)	-3194(8)	7019(5)	67(3)
C(56)	24060(4)	-4103(8)	6787(4)	43(2)
C(57)	23826(4)	-5097(8)	6895(4)	44(2)
C(58)	23351(4)	-5163(7)	7224(3)	38(2)
C(59)	22664(4)	-6267(6)	8424(3)	31(2)
C(60)	22302(3)	-5726(6)	7943(3)	28(2)
C(61)	19957(5)	-5009(10)	5814(5)	66(3)
Cl(1)	19860(1)	-3674(3)	5658(1)	72(1)
Cl(2)	19390(2)	-5835(3)	5601(1)	78(1)

Table 3. Bond lengths [Å] and angles [deg] for (dppe)Pt(μ_3-S)$_2$[RuN(CH$_3$)$_2$]$_2$.

Pt(1)-P(2)	2.263(2)	Pt(1)-P(1)	2.264(2)
Pt(1)-S(1)	2.365(2)	Pt(1)-S(2)	2.371(2)
Pt(1)-Ru(1)	3.1595(7)	Ru(1)-N(1)	1.608(8)
Ru(1)-C(2)	2.108(9)	Ru(1)-C(1)	2.115(8)
Ru(1)-S(2)	2.422(2)	Ru(1)-S(1)	2.425(2)
Ru(2)-N(2)	1.606(7)	Ru(2)-C(4)	2.108(8)
Ru(2)-C(3)	2.108(8)	Ru(2)-S(2)	2.411(2)
Ru(2)-S(1)	2.429(2)	P(1)-C(5)	1.818(8)
P(1)-C(11)	1.828(8)	P(1)-C(29)	1.831(7)
P(2)-C(17)	1.816(7)	P(2)-C(30)	1.830(7)
P(2)-C(23)	1.832(7)	C(1)-H(1A)	0.98
C(1)-H(1B)	0.98	C(1)-H(1C)	0.98
C(2)-H(2A)	0.98	C(2)-H(2B)	0.98
C(2)-H(2C)	0.98	C(3)-H(3A)	0.98
C(3)-H(3B)	0.98	C(3)-H(3C)	0.98
C(4)-H(4A)	0.98	C(4)-H(4B)	0.98
C(4)-H(4C)	0.98	C(5)-C(6)	1.375(12)
C(5)-C(10)	1.379(12)	C(6)-C(7)	1.39(2)
C(6)-H(6)	0.95	C(7)-C(8)	1.35(2)
C(7)-H(7)	0.95	C(8)-C(9)	1.36(2)
C(8)-H(8)	0.95	C(9)-C(10)	1.376(13)
C(9)-H(9)	0.95	C(10)-H(10)	0.95
C(11)-C(12)	1.384(12)	C(11)-C(16)	1.404(13)
C(12)-C(13)	1.41(2)	C(12)-H(12)	0.95
C(13)-C(14)	1.37(2)	C(13)-H(13)	0.95
C(14)-C(15)	1.36(2)	C(14)-H(14)	0.95
C(15)-C(16)	1.397(13)	C(15)-H(15)	0.95
C(16)-H(16)	0.95	C(17)-C(18)	1.389(11)
C(17)-C(22)	1.403(11)	C(18)-C(19)	1.389(11)
C(18)-H(18)	0.95	C(19)-C(20)	1.372(13)
C(19)-H(19)	0.95	C(20)-C(21)	1.374(13)
C(20)-H(20)	0.95	C(21)-C(22)	1.402(11)
C(21)-H(21)	0.95	C(22)-H(22)	0.95
C(23)-C(28)	1.380(11)	C(23)-C(24)	1.400(11)
C(24)-C(25)	1.376(10)	C(24)-H(24)	0.95
C(25)-C(26)	1.394(12)	C(25)-H(25)	0.95
C(26)-C(27)	1.358(12)	C(26)-H(26)	0.95
(C27)-C(28)	1.391(11)	C(27)-H(27)	0.95
C(28)-H(28)	0.95	C(29)-C(30)	1.532(10)
C(29)-H(29A)	0.99	C(29)-H(29B)	0.99
C(30)-H(30A)	0.99	C(30)-H(30B)	0.99
Pt(2)-P(3)	2.253(2)	Pt(2)-P(4)	2.264(2)
Pt(2)-S(4)	2.359(2)	Pt(2)-S(3)	2.367(2)
Pt(2)-Ru(3)	3.1587(7)	Pt(2)-Ru(4)	3.1977(7)
Ru(3)-N(3)	1.598(7)	Ru(3)-C(31)	2.109(9)
Ru(3)-C(32)	2.117(8)	Ru(3)-S(4)	2.412(2)
Ru(3)-S(3)	2.419(2)	Ru(4)-N(4)	1.606(7)
Ru(4)-C(34)	2.105(8)	Ru(4)-C(33)	2.120(8)
Ru(4)-S(4)	2.412(2)	Ru(4)-S(3)	2.429(2)
P(3)-C(35)	1.812(8)	P(3)-C(41)	1.820(8)
P(3)-C(59)	1.837(7)	P(4)-C(60)	1.828(8)
P(4)-C(53)	1.830(8)	P(4)-C(47)	1.830(8)

C(31)-H(31A)	0.98	C(31)-H(31B)	0.98
C(31)-H(31C)	0.98	C(32)-H(32A)	0.98
C(32)-H(32B)	0.98	C(32)-H(32C)	0.98
C(33)-H(33A)	0.98	C(33)-H(33B)	0.98
C(33)-H(33C)	0.98	C(34)-H(34A)	0.98
C(34)-H(34B)	0.98	C(34)-H(34C)	0.98
C(35)-C(40)	1.385(11)	C(35)-C(36)	1.394(11)

Symmetry transformations used to generate equivalent atoms:

Table 4. Anisotropic displacement parameters ($Å^2 \times 10^3$) for (dppe)Pt(μ_3-S)$_2$[RuN(CH$_3$)$_2$]$_2$. The anisotropic displacement factor exponent takes the form: $-2\pi^2$ [$h^2 a^{*2}$ U11 + ... + 2 h k a* b* U12]

	U11	U22	U33	U23	U13	U12
Pt(1)	20(1)	22(1)	23(1)	2(1)	2(1)	0(1)
Ru(1)	30(1)	32(1)	34(1)	6(1)	9(1)	-2(1)
Ru(2)	25(1)	32(1)	26(1)	-2(1)	1(1)	-2(1)
S(1)	21(1)	31(1)	33(1)	3(1)	1(1)	-1(1)
S(2)	25(1)	24(1)	29(1)	1(1)	1(1)	0(1)
P(1)	24(1)	22(1)	32(1)	5(1)	2(1)	1(1)
P(2)	23(1)	24(1)	21(1)	1(1)	2(1)	0(1)
N(1)	66(6)	54(5)	42(5)	0(4)	20(4)	-7(4)
N(2)	38(4)	44(5)	43(4)	-6(3)	1(3)	-3(3)
C(1)	17(4)	52(6)	101(9)	27(6)	1(5)	-3(4)
C(2)	34(5)	43(6)	62(6)	19(5)	5(4)	-5(4)
C(3)	37(5)	57(6)	32(5)	-7(4)	0(4)	2(4)
C(4)	40(5)	55(6)	38(5)	14(4)	3(4)	-6(4)
C(5)	19(4)	30(4)	39(5)	-3(3)	2(3)	6(3)
C(6)	42(6)	56(7)	113(10)	-45(7)	28(6)	-13(5)
C(7)	49(7)	92(10)	122(11)	-80(9)	19(7)	-16(7)
C(8)	57(7)	63(7)	62(7)	-24(6)	24(5)	2(6)
C(9)	91(9)	64(8)	74(8)	-13(6)	54(7)	-12(7)
C(10)	74(7)	37(6)	58(6)	-6(5)	36(5)	-7(5)
C(11)	26(4)	33(5)	50(5)	22(4)	-6(4)	-4(4)
C(12)	41(5)	36(6)	91(8)	26(5)	5(5)	14(4)
C(13)	47(7)	74(9)	135(13)	58(9)	-15(8)	6(6)
C(14)	64(8)	101(11)	88(10)	63(9)	-38(7)	-16(8)
C(15)	74(8)	83(9)	51(7)	31(6)	-30(6)	-24(7)
C(16)	68(7)	45(6)	34(5)	13(4)	-10(4)	-7(5)
C(17)	30(4)	29(4)	20(4)	-3(3)	1(3)	4(3)
C(18)	44(5)	32(5)	33(4)	-4(4)	0(4)	9(4)
C(19)	53(6)	39(5)	39(5)	-11(4)	-16(4)	13(4)
C(20)	75(7)	35(5)	23(4)	4(4)	-7(4)	6(5)
C(21)	68(7)	36(5)	33(5)	7(4)	4(4)	-4(5)
C(22)	45(5)	36(5)	26(4)	6(4)	3(4)	2(4)
C(23)	23(4)	27(4)	25(4)	5(3)	-1(3)	4(3)
C(24)	31(4)	33(5)	27(4)	-4(3)	3(3)	3(3)
C(25)	35(5)	46(5)	29(4)	-7(4)	9(3)	3(4)
C(26)	30(4)	55(6)	31(4)	4(4)	6(3)	5(4)
C(27)	36(5)	53(6)	37(5)	4(4)	8(4)	-7(4)
C(28)	31(4)	44(5)	34(5)	-7(4)	5(3)	-7(4)
C(29)	23(4)	32(4)	34(4)	3(3)	0(3)	-8(3)
C(30)	19(3)	21(4)	28(4)	1(3)	2(3)	1(3)
Pt(2)	29(1)	21(1)	20(1)	0(1)	3(1)	0(1)
Ru(3)	33(1)	31(1)	33(1)	-5(1)	2(1)	-3(1)
Ru(4)	34(1)	27(1)	26(1)	-1(1)	4(1)	1(1)
S(3)	38(1)	21(1)	26(1)	1(1)	4(1)	-1(1)
S(4)	41(1)	28(1)	19(1)	-1(1)	2(1)	4(1)
P(3)	32(1)	22(1)	22(1)	1(1)	4(1)	1(1)
P(4)	29(1)	22(1)	20(1)	2(1)	2(1)	1(1)
N(3)	46(5)	37(4)	59(5)	-13(4)	-2(4)	-8(4)
N(4)	33(4)	42(5)	47(4)	6(3)	6(3)	3(3)

C(31)	48(6)	54(6)	41(5)	-7(4)	-5(4)	15(5)
C(32)	37(5)	48(6)	53(6)	-1(5)	14(4)	-5(4)
C(33)	52(6)	40(5)	34(5)	-4(4)	9(4)	7(4)
C(34)	54(6)	27(5)	40(5)	-1(4)	9(4)	5(4)
C(35)	33(4)	36(5)	23(4)	-4(3)	4(3)	-5(4)
C(36)	39(5)	34(5)	58(6)	12(4)	5(4)	-3(4)
C(37)	68(7)	49(7)	76(8)	23(6)	19(6)	-8(6)
C(38)	47(6)	83(9)	62(7)	8(6)	6(5)	-21(6)
C(39)	30(5)	58(7)	59(6)	-4(5)	-7(4)	2(4)
C(40)	34(5)	35(5)	37(5)	1(4)	4(4)	2(4)
C(41)	33(4)	17(4)	32(4)	6(3)	-2(3)	-1(3)
C(42)	47(5)	56(6)	25(4)	4(4)	8(4)	17(5)
C(43)	75(7)	50(6)	21(4)	1(4)	1(4)	11(5)
C(44)	54(6)	67(7)	47(6)	9(5)	-17(5)	12(5)
C(45)	49(6)	111(11)	51(7)	1(6)	-6(5)	32(7)
C(46)	43(5)	68(7)	34(5)	5(5)	5(4)	19(5)
C(47)	28(4)	27(4)	28(4)	1(3)	6(3)	3(3)
C(48)	27(4)	48(6)	33(4)	-7(4)	10(3)	-4(4)
C(49)	31(5)	42(5)	58(6)	2(5)	6(4)	0(4)
C(50)	36(5)	39(5)	54(6)	12(4)	-7(4)	-1(4)
C(51)	50(5)	47(6)	31(5)	5(4)	-15(4)	-6(5)
C(52)	37(5)	33(5)	32(4)	6(4)	4(3)	3(4)
C(53)	36(4)	32(4)	20(4)	0(3)	1(3)	-5(4)
C(54)	50(6)	32(5)	62(6)	0(4)	19(5)	3(4)
C(55)	69(7)	37(6)	98(9)	4(6)	45(7)	-9(5)
C(56)	35(5)	52(6)	45(5)	-6(4)	14(4)	3(4)
C(57)	36(5)	44(6)	55(6)	-16(4)	15(4)	5(4)
C(58)	37(5)	36(5)	42(5)	-9(4)	17(4)	-6(4)
C(59)	44(5)	24(4)	25(4)	-1(3)	4(3)	2(4)
C(60)	33(4)	24(4)	25(4)	-2(3)	4(3)	2(3)
C(61)	48(6)	82(9)	68(8)	13(6)	5(5)	2(6)
Cl(1)	68(2)	68(2)	80(2)	2(2)	9(2)	8(2)
Cl(2)	90(2)	78(2)	66(2)	-8(2)	5(2)	0(2)

Table 5. Hydrogen coordinates (x 10^4) and isotropic displacement parameters ($Å^2$ x 10^3) for (dppe)Pt(μ_3-S)$_2$[RuN(CH$_3$)$_2$]$_2$.

	x	y	z	U(eq)
H(1A)	20467(3)	-5072(8)	8208(5)	85
H(1B)	20586(3)	-4890(8)	7558(5)	85
H(1C)	20681(3)	-6057(8)	7836(5)	85
H(2A)	19510(4)	-3794(7)	7917(4)	69
H(2B)	19130(4)	-3945(7)	7345(4)	69
H(2C)	19812(4)	-3830(7)	7328(4)	69
H(3A)	18077(4)	-6223(8)	9211(3)	63
H(3B)	18102(4)	-5028(8)	8957(3)	63
H(3C)	18373(4)	-5270(8)	9575(3)	63
H(4A)	19565(4)	-7348(8)	9536(4)	67
H(4B)	18884(4)	-7503(8)	9530(4)	67
H(4C)	19183(4)	-6556(8)	9895(4)	67
H(6)	19018(4)	-11342(9)	7094(5)	84
H(7)	19563(5)	-11774(11)	6331(6)	105
H(8)	20228(5)	-10570(9)	6019(5)	72
H(9)	20399(5)	-8979(10)	6503(5)	90
H(10)	19871(5)	-8542(8)	7268(4)	67
H(12)	19788(4)	-11319(8)	8058(5)	67
H(13)	20173(5)	-12170(11)	8880(7)	103
H(14)	19938(5)	-11561(12)	9758(6)	103
H(15)	19312(5)	-10139(10)	9848(5)	85
H(16)	18948(4)	-9221(8)	9044(4)	59
H(18)	16810(4)	-8309(7)	6926(3)	44
H(19)	16457(4)	-7688(7)	6050(4)	53
H(20)	16999(4)	-6499(7)	5542(4)	54
H(21)	17916(4)	-6025(7)	5863(4)	55
H(22)	18304(4)	-6709(7)	6722(3)	43
H(24)	17552(3)	-6575(7)	8288(3)	36
H(25)	16878(3)	-6378(7)	8968(3)	44
H(26)	16307(3)	-7861(8)	9198(3)	46
H(27)	16340(4)	-9426(8)	8681(4)	50
H(28)	17017(3)	-9640(7)	7998(3)	44
H(29A)	18364(3)	-11001(7)	7648(3)	36
H(29B)	18107(3)	-10292(7)	8141(3)	36
H(30A)	17522(3)	-9953(6)	7330(3)	27
H(30B)	18070(3)	-9720(6)	6966(3)	27
H(31A)	24097(4)	-3731(8)	9414(4)	72
H(31B)	24046(4)	-3203(8)	10022(4)	72
H(31C)	24508(4)	-2751(8)	9606(4)	72
H(32A)	23971(4)	-2480(8)	8352(4)	69
H(32B)	24463(4)	-1960(8)	8758(4)	69
H(32C)	24016(4)	-1196(8)	8418(4)	69
H(33A)	22540(4)	-883(7)	10372(3)	63
H(33B)	22083(4)	-1807(7)	10492(3)	63
H(33C)	21869(4)	-621(7)	10318(3)	63
H(34A)	22110(4)	229(7)	8887(4)	60
H(34B)	22527(4)	347(7)	9437(4)	60
H(34C)	21847(4)	394(7)	9489(4)	60
H(36)	22072(4)	-7362(7)	9467(4)	52

H(37)	21160(5)	-7869(9)	9725(5)	77
H(38)	20414(5)	-6614(10)	9707(5)	77
H(39)	20589(4)	-4850(9)	9402(4)	60
H(40)	21493(3)	-4336(7)	9134(3)	42

Table 6. Crystal data and structure refinement for (dppe)Pt(μ_3-S)$_2$[OsN(CH$_2$SiMe$_3$)$_2$]$_2$ **8**.

Identification code	ncd_face
Empirical formula	$C_{42}H_{68}N_2Os_2P_2PtS_2Si_4$
Formula weight	1414.89
Temperature	193(2) K
Wavelength	0.71073 Å
Crystal system, space group	Monoclinic, P2(1)/c (No. 14)
Unit cell dimensions	a = 11.8022(4) Å α = 90 deg. b = 21.4284(8) Å β = 99.1660(10) deg. c = 21.2654(7) Å γ = 90 deg.
Volume	5309.4(3) Å^3
Z, Calculated density	4, 1.770 Mg/m^3
Absorption coefficient	7.661 mm^{-1}
F(000)	2728
Crystal size	0.035 x 0.15 x 0.18 mm
Theta range for data collection	1.36 to 28.30 deg.
Limiting indices	-13<=h<=15, -27<=k<=19, -27<=l<=25
Reflections collected / unique	34602 / 12653 [R(int) = 0.0741]
Completeness to theta = 28.30	95.7 %
Absorption correction	Empirical (Face-Indexed)
Refinement method	Full-matrix least-squares on F^2
Data / restraints / parameters	12653 / 0 / 508
Goodness-of-fit on F^2	0.834
Final R indices [I>2sigma(I)]	R1 = 0.0373, wR2 = 0.0521
R indices (all data)	R1 = 0.0890, wR2 = 0.0597
Largest diff. peak and hole	1.286 and -1.058 e.Å^{-3}

Table 7. Atomic coordinates (x 10^4) and equivalent isotropic displacement parameters ($Å^2$ x 10^3) for (dppe)Pt(μ_3-S)$_2$[OsN(CH_2SiMe_3)$_2$]$_2$. U(eq) is defined as one third of the trace of the orthogonalized Uij tensor.

	x	y	z	U(eq)
Os(1)	2175(1)	6834(1)	8647(1)	29(1)
Os(2)	1428(1)	8264(1)	8777(1)	27(1)
S(1)	3166(1)	7803(1)	8535(1)	29(1)
S(2)	683(1)	7441(1)	8046(1)	30(1)
P(1)	1120(1)	7635(1)	6520(1)	35(1)
P(2)	3536(1)	8173(1)	6993(1)	34(1)
Si(1)	164(2)	5691(1)	8582(1)	59(1)
Si(2)	4691(2)	6213(1)	9322(1)	43(1)
Si(3)	-1167(2)	8565(1)	9182(1)	59(1)
Si(4)	3446(2)	9133(1)	9769(1)	37(1)
N(1)	2008(4)	6766(2)	9389(2)	41(1)
N(2)	1103(4)	8952(2)	8451(2)	38(1)
C(11)	1313(5)	6044(3)	8205(3)	39(2)
C(12)	-539(7)	5050(4)	8078(4)	95(3)
C(13)	-971(7)	6263(4)	8679(6)	151(5)
C(14)	776(8)	5346(5)	9360(4)	133(5)
C(15)	3718(5)	6369(3)	8574(3)	41(2)
C(16)	6007(5)	5831(4)	9121(3)	60(2)
C(17)	5105(6)	6956(3)	9763(3)	64(2)
C(18)	4030(6)	5681(4)	9841(3)	73(3)
C(21)	86(5)	8030(3)	9278(3)	31(2)
C(22)	-733(8)	9311(3)	9594(4)	91(3)
C(23)	-2310(6)	8172(5)	9561(4)	112(4)
C(24)	-1772(6)	8713(5)	8326(3)	94(3)
C(25)	2374(5)	8484(3)	9684(2)	32(2)
C(26)	4754(5)	8944(3)	9421(3)	58(2)
C(27)	2846(6)	9871(3)	9397(3)	50(2)
C(28)	3888(6)	9289(4)	10648(3)	70(3)
C(31)	2895(5)	8291(3)	6160(2)	39(2)
C(32)	2085(5)	7758(3)	5938(3)	41(2)
C(33)	-130(5)	8105(3)	6283(3)	40(2)
C(34)	-663(6)	8405(3)	6731(3)	53(2)
C(35)	-1690(6)	8725(4)	6563(3)	63(2)
C(36)	-2192(7)	8752(4)	5936(4)	72(3)
C(37)	-1679(8)	8459(4)	5483(4)	92(3)
C(38)	-669(6)	8141(4)	5657(3)	63(2)
C(43)	638(6)	6827(3)	6430(3)	39(2)
C(44)	-510(6)	6678(3)	6388(3)	48(2)
C(45)	-827(7)	6049(4)	6399(3)	64(2)
C(46)	-38(7)	5592(4)	6450(3)	59(2)
C(47)	1098(7)	5731(3)	6492(3)	55(2)
C(48)	1443(6)	6360(3)	6486(3)	47(2)
C(53)	4125(5)	8928(3)	7252(3)	34(2)
C(54)	3487(6)	9349(3)	7548(3)	50(2)
C(55)	3907(8)	9937(4)	7709(3)	67(2)
C(56)	4956(7)	10111(4)	7589(3)	65(2)

C(57)	5604(7)	9701(4)	7308(4)	76(3)
C(58)	5196(6)	9110(4)	7141(4)	61(2)
C(63)	4773(5)	7669(3)	7006(3)	44(2)
C(64)	5450(6)	7558(4)	7590(3)	59(2)
C(65)	6413(7)	7179(4)	7646(5)	85(3)
C(66)	6696(8)	6917(5)	7101(5)	96(3)
C(67)	6046(8)	7015(5)	6530(5)	98(4)
C(68)	5094(6)	7389(4)	6484(4)	74(3)
Pt(2)	2141(1)	7789(1)	7489(1)	27(1)

Table 8. Bond lengths [Å] and angles [deg] for (dppe)Pt(μ_3-S)$_2$[OsN(CH$_2$SiMe$_3$)$_2$] $_2$.

Os(1)-N(1)	1.627(5)
Os(1)-C(15)	2.103(6)
Os(1)-C(11)	2.116(6)
Os(1)-S(2)	2.3892(15)
Os(1)-S(1)	2.4128(16)
Os(1)-Pt(2)	3.1968(3)
Os(2)-N(2)	1.647(5)
Os(2)-C(21)	2.106(5)
Os(2)-C(25)	2.121(5)
Os(2)-S(1)	2.4058(15)
Os(2)-S(2)	2.4214(15)
Os(2)-Pt(2)	3.1595(3)
S(1)-Pt(2)	2.3574(14)
S(2)-Pt(2)	2.3601(15)
P(1)-C(33)	1.792(7)
P(1)-C(43)	1.823(7)
P(1)-C(32)	1.830(6)
P(1)-Pt(2)	2.2393(16)
P(2)-C(53)	1.812(6)
P(2)-C(63)	1.813(7)
P(2)-C(31)	1.829(5)
P(2)-Pt(2)	2.2485(16)
Si(1)-C(11)	1.844(6)
Si(1)-C(14)	1.850(8)
Si(1)-C(13)	1.851(8)
Si(1)-C(12)	1.855(8)
Si(2)-C(15)	1.839(6)
Si(2)-C(18)	1.844(7)
Si(2)-C(16)	1.865(6)
Si(2)-C(17)	1.872(7)
Si(3)-C(22)	1.856(8)
Si(3)-C(21)	1.857(6)
Si(3)-C(24)	1.872(7)
Si(3)-C(23)	1.879(7)
Si(4)-C(27)	1.857(7)
Si(4)-C(26)	1.860(6)
Si(4)-C(25)	1.871(6)
Si(4)-C(28)	1.889(6)
C(31)-C(32)	1.515(8)
C(33)-C(34)	1.382(8)
C(33)-C(38)	1.382(8)
C(34)-C(35)	1.389(9)
C(35)-C(36)	1.371(9)
C(36)-C(37)	1.370(10)
C(37)-C(38)	1.372(9)
C(43)-C(48)	1.374(9)
C(43)-C(44)	1.380(8)
C(44)-C(45)	1.401(9)
C(45)-C(46)	1.343(10)
C(46)-C(47)	1.362(9)
C(47)-C(48)	1.408(9)
C(53)-C(58)	1.378(8)

C(53)-C(54)	1.389(8)
C(54)-C(55)	1.377(9)
C(55)-C(56)	1.355(10)
C(56)-C(57)	1.365(10)
C(57)-C(58)	1.381(10)
C(63)-C(68)	1.367(8)
C(63)-C(64)	1.385(9)
C(64)-C(65)	1.387(9)
C(65)-C(66)	1.376(11)
C(66)-C(67)	1.345(11)
C(67)-C(68)	1.371(11)

N(1)-Os(1)-C(15)	105.6(2)
N(1)-Os(1)-C(11)	103.6(2)
C(15)-Os(1)-C(11)	87.1(2)
N(1)-Os(1)-S(2)	112.00(18)
C(15)-Os(1)-S(2)	142.30(16)
C(11)-Os(1)-S(2)	86.38(18)
N(1)-Os(1)-S(1)	107.96(19)
C(15)-Os(1)-S(1)	87.76(19)
C(11)-Os(1)-S(1)	148.27(16)
S(2)-Os(1)-S(1)	78.85(5)
N(1)-Os(1)-Pt(2)	144.66(18)
C(15)-Os(1)-Pt(2)	98.66(17)
C(11)-Os(1)-Pt(2)	102.92(17)
S(2)-Os(1)-Pt(2)	47.31(4)
S(1)-Os(1)-Pt(2)	47.19(3)
N(2)-Os(2)-C(21)	106.4(2)
N(2)-Os(2)-C(25)	103.8(2)
C(21)-Os(2)-C(25)	85.5(2)
N(2)-Os(2)-S(1)	115.29(17)
C(21)-Os(2)-S(1)	138.23(16)
C(25)-Os(2)-S(1)	86.70(16)
N(2)-Os(2)-S(2)	110.16(17)
C(21)-Os(2)-S(2)	85.72(16)
C(25)-Os(2)-S(2)	146.03(17)
S(1)-Os(2)-S(2)	78.36(5)
N(2)-Os(2)-Pt(2)	89.99(16)
C(21)-Os(2)-Pt(2)	133.42(16)
C(25)-Os(2)-Pt(2)	133.27(15)
S(1)-Os(2)-Pt(2)	47.79(3)
S(2)-Os(2)-Pt(2)	47.81(3)
Pt(2)-S(1)-Os(2)	83.10(5)
Pt(2)-S(1)-Os(1)	84.15(5)
Os(2)-S(1)-Os(1)	83.63(4)
Pt(2)-S(2)-Os(1)	84.61(5)
Pt(2)-S(2)-Os(2)	82.71(5)
Os(1)-S(2)-Os(2)	83.80(5)
C(33)-P(1)-C(43)	106.0(3)
C(33)-P(1)-C(32)	107.6(3)
C(43)-P(1)-C(32)	106.5(3)
C(33)-P(1)-Pt(2)	118.3(2)
C(43)-P(1)-Pt(2)	110.4(2)
C(32)-P(1)-Pt(2)	107.4(2)
C(53)-P(2)-C(63)	105.0(3)
C(53)-P(2)-C(31)	104.5(3)
C(63)-P(2)-C(31)	107.8(3)

C(53)-P(2)-Pt(2)	117.3(2)
C(63)-P(2)-Pt(2)	115.0(2)
C(31)-P(2)-Pt(2)	106.5(2)
C(11)-Si(1)-C(14)	110.0(4)
C(11)-Si(1)-C(13)	111.8(4)
C(14)-Si(1)-C(13)	110.6(5)
C(11)-Si(1)-C(12)	110.2(3)
C(14)-Si(1)-C(12)	107.2(4)
C(13)-Si(1)-C(12)	106.9(4)
C(15)-Si(2)-C(18)	111.4(3)
C(15)-Si(2)-C(16)	108.0(3)
C(18)-Si(2)-C(16)	108.3(3)
C(15)-Si(2)-C(17)	110.8(3)
C(18)-Si(2)-C(17)	109.1(3)
C(16)-Si(2)-C(17)	109.1(3)
C(22)-Si(3)-C(21)	109.0(3)
C(22)-Si(3)-C(24)	110.4(4)
C(21)-Si(3)-C(24)	112.7(3)
C(22)-Si(3)-C(23)	110.2(4)
C(21)-Si(3)-C(23)	106.8(3)
C(24)-Si(3)-C(23)	107.7(4)
C(27)-Si(4)-C(26)	107.5(3)
C(27)-Si(4)-C(25)	112.7(3)
C(26)-Si(4)-C(25)	113.1(3)
C(27)-Si(4)-C(28)	107.3(3)
C(26)-Si(4)-C(28)	108.5(3)
C(25)-Si(4)-C(28)	107.6(3)
Si(1)-C(11)-Os(1)	118.0(3)
Si(2)-C(15)-Os(1)	116.8(3)
Si(3)-C(21)-Os(2)	116.5(3)
Si(4)-C(25)-Os(2)	120.1(3)
C(32)-C(31)-P(2)	109.9(4)
C(31)-C(32)-P(1)	109.1(4)
C(34)-C(33)-C(38)	116.7(6)
C(34)-C(33)-P(1)	120.8(5)
C(38)-C(33)-P(1)	122.2(5)
C(33)-C(34)-C(35)	121.7(7)
C(36)-C(35)-C(34)	119.7(7)
C(37)-C(36)-C(35)	119.6(7)
C(36)-C(37)-C(38)	120.0(7)
C(37)-C(38)-C(33)	122.3(7)
C(48)-C(43)-C(44)	119.7(7)
C(48)-C(43)-P(1)	118.9(5)
C(44)-C(43)-P(1)	120.9(5)
C(43)-C(44)-C(45)	118.9(7)
C(46)-C(45)-C(44)	121.3(7)
C(45)-C(46)-C(47)	120.5(8)
C(46)-C(47)-C(48)	119.5(7)
C(43)-C(48)-C(47)	120.1(7)
C(58)-C(53)-C(54)	118.2(6)
C(58)-C(53)-P(2)	121.2(5)
C(54)-C(53)-P(2)	120.6(5)
C(55)-C(54)-C(53)	120.5(7)
C(56)-C(55)-C(54)	120.5(8)
C(55)-C(56)-C(57)	120.0(8)
C(56)-C(57)-C(58)	120.4(8)
C(53)-C(58)-C(57)	120.5(7)

C(68)-C(63)-C(64)	117.3(7)
C(68)-C(63)-P(2)	125.1(6)
C(64)-C(63)-P(2)	117.6(5)
C(63)-C(64)-C(65)	121.6(7)
C(66)-C(65)-C(64)	118.2(9)
C(67)-C(66)-C(65)	121.1(9)
C(66)-C(67)-C(68)	119.9(9)
C(63)-C(68)-C(67)	121.9(8)
P(1)-Pt(2)-P(2)	87.06(6)
P(1)-Pt(2)-S(1)	172.02(6)
P(2)-Pt(2)-S(1)	97.70(5)
P(1)-Pt(2)-S(2)	95.01(6)
P(2)-Pt(2)-S(2)	176.54(6)
S(1)-Pt(2)-S(2)	80.55(5)
P(1)-Pt(2)-Os(2)	131.81(4)
P(2)-Pt(2)-Os(2)	127.20(4)
S(1)-Pt(2)-Os(2)	49.11(4)
S(2)-Pt(2)-Os(2)	49.48(4)
P(1)-Pt(2)-Os(1)	123.63(5)
P(2)-Pt(2)-Os(1)	132.51(4)
S(1)-Pt(2)-Os(1)	48.66(4)
S(2)-Pt(2)-Os(1)	48.08(4)
Os(2)-Pt(2)-Os(1)	60.717(8)

Symmetry transformations used to generate equivalent atoms:

Table 9. Anisotropic displacement parameters ($Å^2 \times 10^3$) for (dppe)Pt(μ_3-S)$_2$[OsN(CH$_2$SiMe$_3$)$_2$]$_2$. The anisotropic displacement factor exponent takes the form: $-2\pi^2 [h^2 a^{*2} U11 + ... + 2 h k a^* b^* U12]$

	U11	U22	U33	U23	U13	U12
Os(1)	29(1)	28(1)	30(1)	0(1)	5(1)	3(1)
Os(2)	27(1)	26(1)	29(1)	1(1)	6(1)	1(1)
S(1)	24(1)	32(1)	29(1)	-1(1)	3(1)	-1(1)
S(2)	26(1)	29(1)	33(1)	-1(1)	3(1)	-1(1)
P(1)	38(1)	35(1)	31(1)	-4(1)	2(1)	-2(1)
P(2)	35(1)	34(1)	33(1)	1(1)	9(1)	1(1)
Si(1)	53(2)	46(1)	81(2)	-7(1)	21(1)	-18(1)
Si(2)	37(1)	42(1)	48(1)	5(1)	1(1)	9(1)
Si(3)	47(1)	69(2)	68(1)	26(1)	31(1)	27(1)
Si(4)	37(1)	32(1)	42(1)	-4(1)	3(1)	-6(1)
N(1)	47(4)	34(3)	44(3)	4(3)	12(3)	6(3)
N(2)	41(3)	30(3)	41(3)	7(3)	5(3)	6(3)
C(11)	34(4)	31(4)	49(4)	-10(3)	2(3)	-3(3)
C(12)	94(7)	61(6)	127(8)	0(6)	2(6)	-44(6)
C(13)	73(7)	73(7)	335(16)	-36(9)	121(9)	-13(6)
C(14)	175(11)	144(11)	80(7)	29(7)	20(7)	-95(9)
C(15)	45(4)	36(4)	43(4)	-7(3)	8(3)	4(3)
C(16)	36(4)	70(6)	73(5)	10(5)	6(4)	15(4)
C(17)	49(5)	68(6)	68(5)	-6(5)	-15(4)	8(4)
C(18)	85(6)	59(6)	80(6)	31(5)	33(5)	41(5)
C(21)	32(4)	21(4)	40(4)	-6(3)	6(3)	2(3)
C(22)	163(9)	40(5)	90(6)	12(5)	77(6)	40(6)
C(23)	45(6)	146(10)	158(9)	87(8)	55(6)	38(6)
C(24)	55(6)	135(9)	86(6)	48(6)	-3(5)	21(6)
C(25)	30(4)	29(4)	38(4)	-2(3)	8(3)	-3(3)
C(26)	40(5)	40(5)	94(6)	-9(4)	7(4)	-3(4)
C(27)	52(5)	36(5)	64(5)	-6(4)	12(4)	-1(4)
C(28)	80(6)	75(6)	45(4)	-4(4)	-16(4)	-31(5)
C(31)	43(4)	51(5)	26(3)	6(3)	11(3)	-6(4)
C(32)	53(4)	46(5)	25(3)	-2(3)	7(3)	0(4)
C(33)	49(4)	32(4)	33(4)	-5(3)	-11(3)	-1(3)
C(34)	57(5)	55(5)	47(4)	2(4)	6(4)	17(4)
C(35)	53(5)	78(6)	57(5)	7(5)	4(4)	27(5)
C(36)	60(6)	69(6)	77(6)	-8(5)	-22(5)	23(5)
C(37)	93(7)	108(9)	61(5)	-17(6)	-32(5)	61(6)
C(38)	64(5)	72(6)	41(4)	-13(4)	-23(4)	23(5)
C(43)	47(4)	39(4)	31(3)	-11(3)	10(3)	-5(4)
C(44)	45(5)	37(5)	60(5)	-17(4)	9(4)	-5(4)
C(45)	65(6)	47(5)	84(6)	-22(5)	23(5)	-23(5)
C(46)	92(7)	36(5)	55(5)	-24(4)	24(5)	-15(5)
C(47)	70(6)	36(5)	60(5)	-18(4)	7(4)	1(4)
C(48)	48(5)	49(5)	44(4)	-13(4)	9(3)	-1(4)
C(53)	40(4)	31(4)	29(3)	5(3)	2(3)	1(3)
C(54)	61(5)	38(5)	55(5)	1(4)	21(4)	-8(4)
C(55)	101(7)	32(5)	76(6)	-11(4)	42(5)	-11(5)
C(56)	82(7)	35(5)	73(6)	2(5)	-3(5)	-17(5)
C(57)	49(6)	61(6)	117(7)	24(6)	3(5)	-18(5)

C(58)	47(5)	46(5)	91(6)	1(5)	17(4)	-5(4)
C(63)	36(4)	49(5)	51(4)	1(4)	21(3)	4(4)
C(64)	51(5)	67(6)	65(5)	12(4)	26(4)	22(4)
C(65)	55(6)	94(8)	112(7)	45(7)	33(5)	25(5)
C(66)	72(7)	99(9)	123(8)	-2(8)	36(7)	38(6)
C(67)	73(7)	118(9)	112(8)	-38(7)	45(6)	26(7)
C(68)	48(5)	101(8)	78(6)	-22(5)	20(4)	10(5)
Pt(2)	28(1)	29(1)	26(1)	-2(1)	4(1)	1(1)

Table 10. Hydrogen coordinates (x 10^4) and isotropic displacement parameters ($Å^2$ x 10^3) for (dppe)Pt(μ_3-S)$_2$[OsN(CH_2SiMe_3)$_2$]$_2$.

	x	y	z	U(eq)
H(11A)	977	6163	7765	46
H(11B)	1895	5718	8174	46
H(12A)	-1074	4829	8308	143
H(12B)	46	4758	7978	143
H(12C)	-960	5224	7683	143
H(13A)	-1578	6056	8866	226
H(13B)	-1294	6436	8262	226
H(13C)	-641	6602	8961	226
H(14A)	920	5677	9681	199
H(14B)	1500	5136	9323	199
H(14C)	234	5044	9488	199
H(15A)	3524	5965	8356	50
H(15B)	4140	6620	8296	50
H(16A)	5808	5420	8933	90
H(16B)	6572	5782	9509	90
H(16C)	6334	6091	8815	90
H(17A)	5486	7234	9495	96
H(17B)	5630	6863	10156	96
H(17C)	4416	7161	9867	96
H(18A)	3380	5890	9987	109
H(18B)	4600	5567	10211	109
H(18C)	3760	5304	9603	109
H(21A)	-192	7607	9143	37
H(21B)	405	8007	9737	37
H(22A)	-574	9240	10055	137
H(22B)	-1356	9616	9497	137
H(22C)	-42	9472	9449	137
H(23A)	-2573	7795	9320	168
H(23B)	-2958	8458	9562	168
H(23C)	-1996	8057	10001	168
H(24A)	-1223	8958	8127	141
H(24B)	-2494	8944	8300	141
H(24C)	-1914	8314	8103	141
H(25A)	1812	8579	9970	38
H(25B)	2785	8100	9850	38
H(26A)	4551	8905	8957	87
H(26B)	5081	8550	9599	87
H(26C)	5321	9279	9522	87
H(27A)	2653	9814	8935	76
H(27B)	3416	10205	9489	76
H(27C)	2152	9983	9570	76
H(28A)	4550	9571	10711	105
H(28B)	4095	8895	10870	105
H(28C)	3248	9482	10818	105
H(31A)	2468	8691	6116	47
H(31B)	3506	8313	5892	47
H(32A)	2530	7373	5894	49
H(32B)	1634	7858	5517	49

H(34)	-317	8393	7167	64
H(35)	-2044	8925	6880	76
H(36)	-2891	8973	5816	87
H(37)	-2022	8476	5048	111
H(38)	-327	7938	5337	75
H(44)	-1076	6997	6351	57
H(45)	-1615	5943	6370	77
H(46)	-274	5169	6458	71
H(47)	1652	5406	6524	67
H(48)	2235	6461	6521	56
H(54)	2756	9230	7641	60
H(55)	3457	10224	7905	80
H(56)	5239	10517	7701	78
H(57)	6341	9822	7226	92
H(58)	5656	8826	6948	73
H(64)	5249	7747	7961	71
H(65)	6866	7103	8049	102
H(66)	7362	6663	7128	115
H(67)	6247	6825	6159	117
H(68)	4644	7456	6078	89