Supporting Information for:

***Cyclo*-tetrakis(μ-diphenylphosphido)-1,5-bis(tri-*tert*-butylphosphine)-tetracopper**

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Table of Contents

Figure S1. ^{1}H NMR spectra of **1** synthesized by method A……………………………………………………………………2

Figure S2. VT experiment - ^{1}H NMR experiment spectra of **1** at 25 °C, 35 °C, 45 °C…………………………………4

Figure S3. ^{31}P NMR spectra of **1** synthesized by method A ……………………………………………………………………5

Figure S4. VT experiment - ^{31}P NMR spectra of **1** at 25 °C, 35 °C, 45 °C……………………………………………………6

Figure S5. ^{13}C NMR spectra of **1** ……………………………………………………………………………………………………7

Figure S6. ^{31}P HMBC NMR spectrum of **1**……………………………………………………………………………………………8

Figure S7. Stacked ^{1}H NMR spectra of the hydrophosphination of styrene.. 9

Figure S8. Stacked ^{31}P NMR spectra of the hydrophosphination of styrene... 10

Figure S9. ^{1}H NMR spectra of **1** synthesized by method B………………………………………………………11

Figure S10. ^{31}P NMR spectra of **1** synthesized by method B……………………………………………………………12

Figure S11. ^{1}H NMR spectra of **1** synthesized by method C….…………………………………………………………13

Figure S12. ^{31}P NMR spectra of **1** synthesized by method C ……………………………………………………………14

Figure S13. Bond lengths and angles………………………………………………………………………………………15-21

Figure S14. Molecular Structure of 1 with labels…………………………………………………………………………22

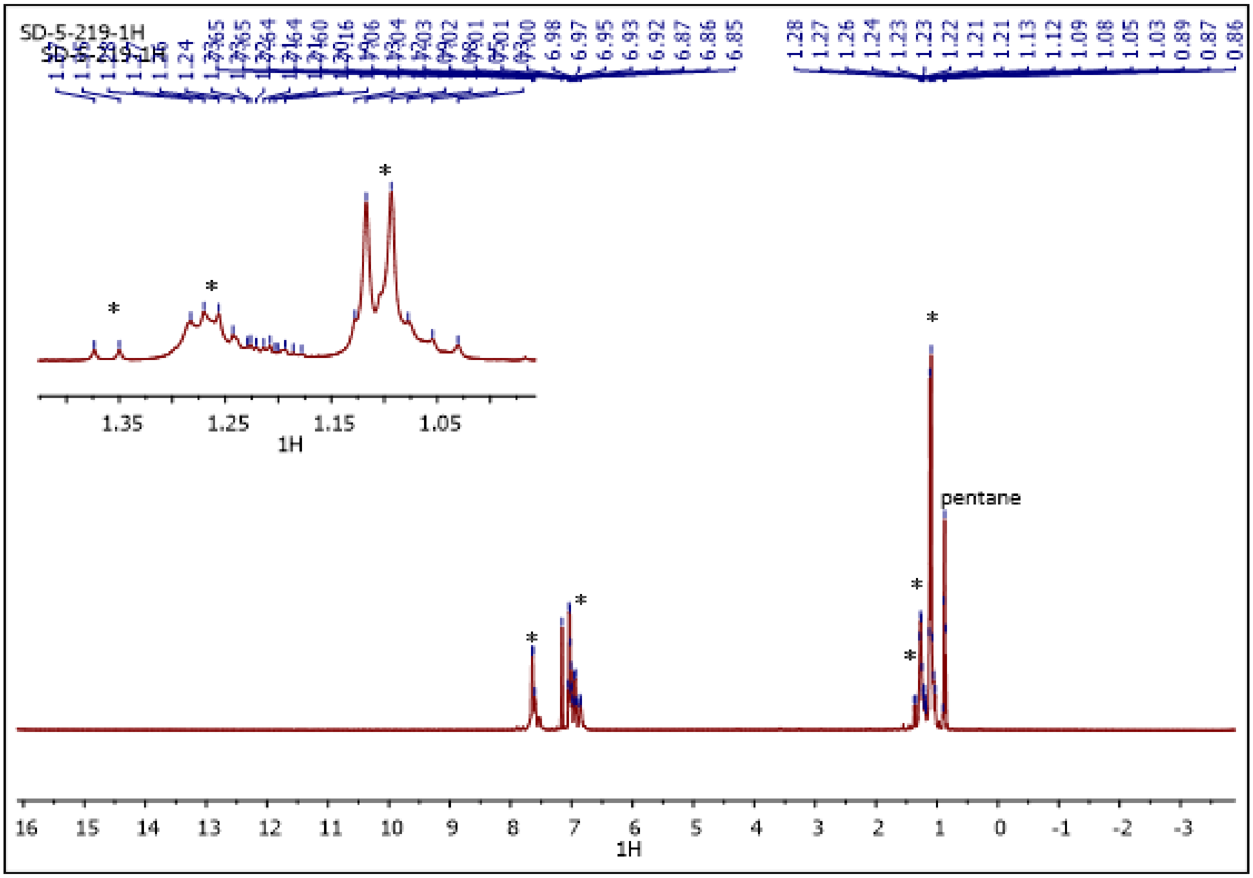
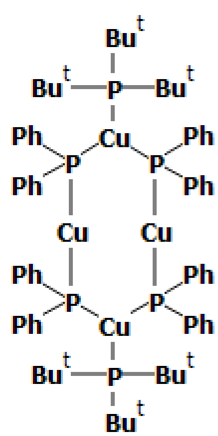


Figure S1. ^{1}H NMR spectra of **1** synthesized by method A (C_6D_6, 500 MHz). Residual pentane is visible. * = signal for **1.**



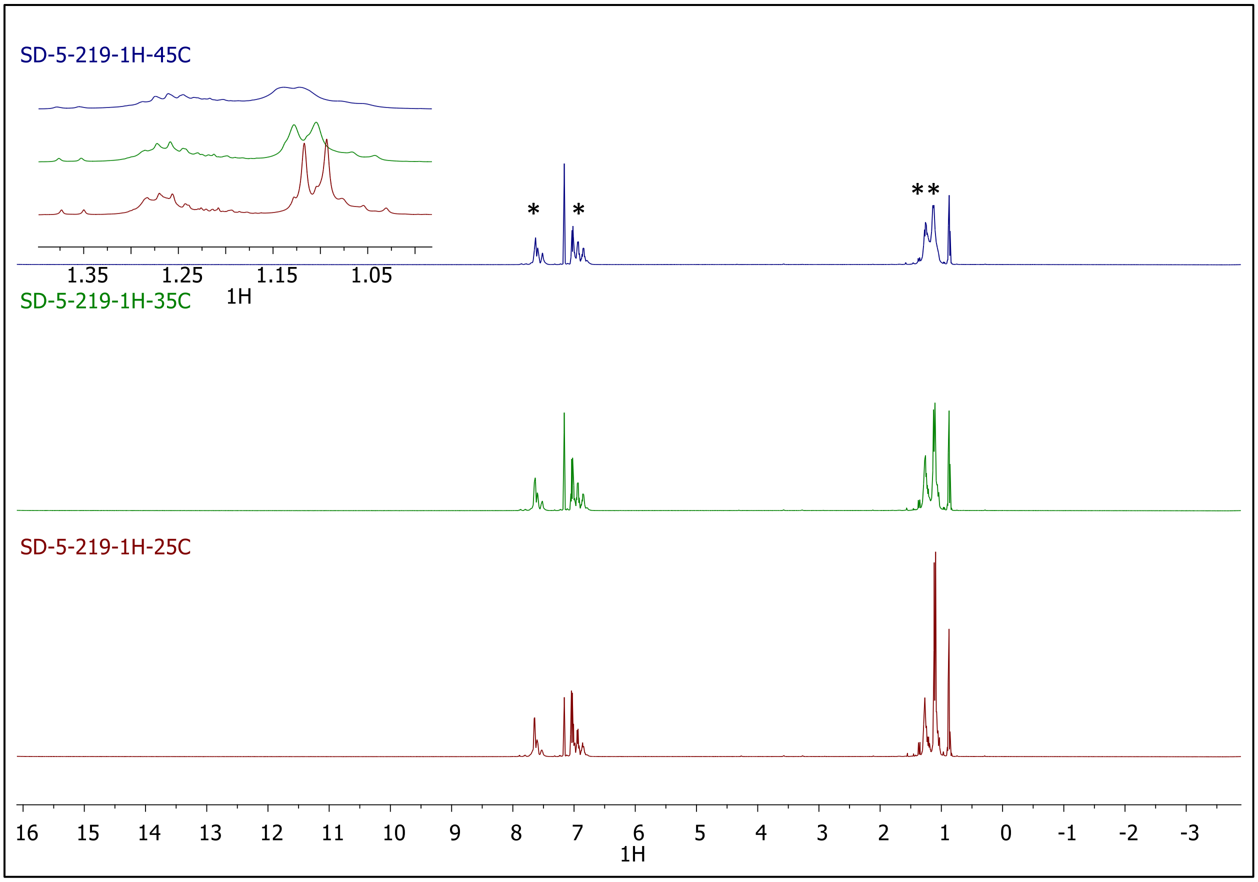
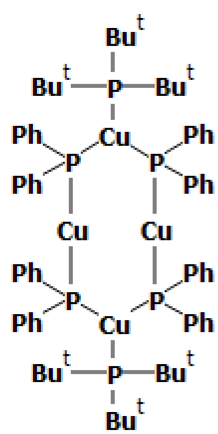


Figure S2. VT experiment - ^{1}H NMR spectra of **1** synthesized by method A (C_6D_6, 500 MHz) at 25 °C (bottom) 35 °C (middle) 45 °C (top). * = signal for **1.**



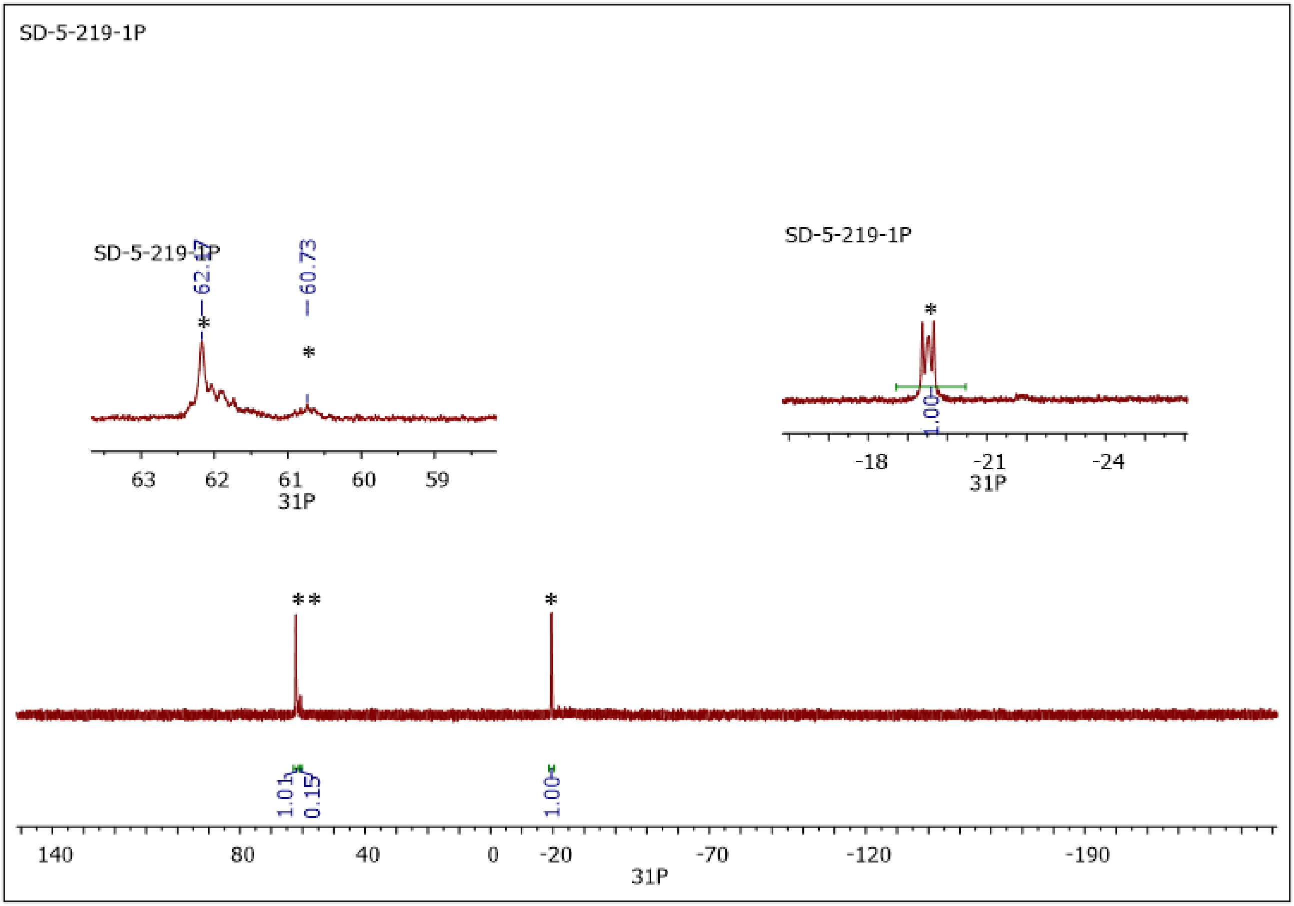
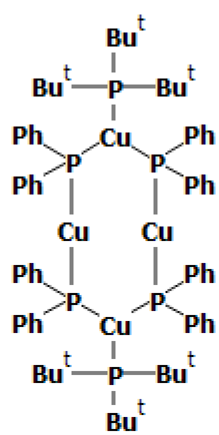


Figure S3. ^{31}P NMR spectra of **1** synthesized by method A (C_6D_6, 202 MHz). * = signal for **1.**



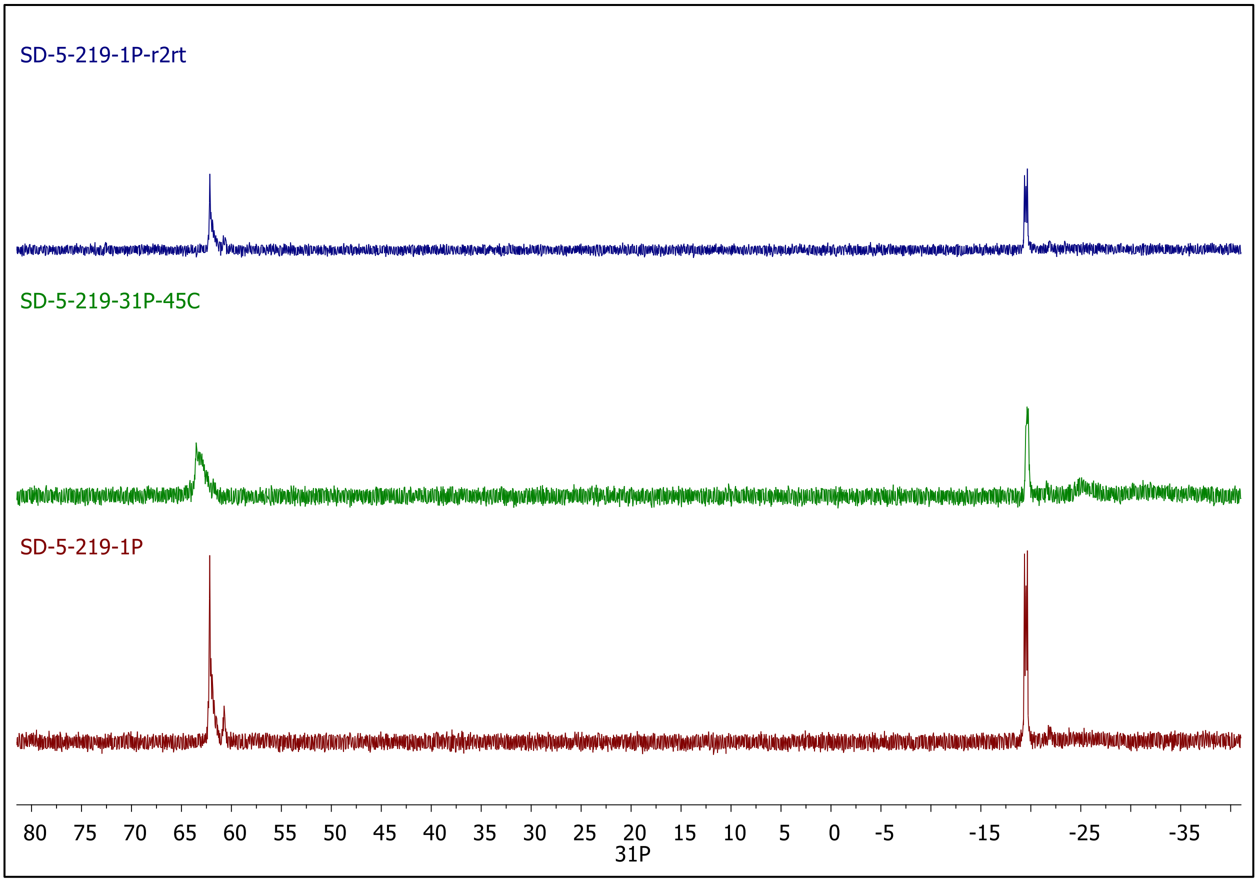
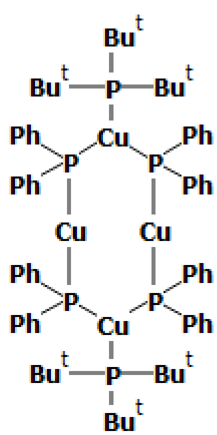


Figure S4. VT experiment - ^{31}P NMR spectra of **1** synthesized by method A at 25 °C (bottom) and 45 °C (middle), and upon returning to 25 °C (top).



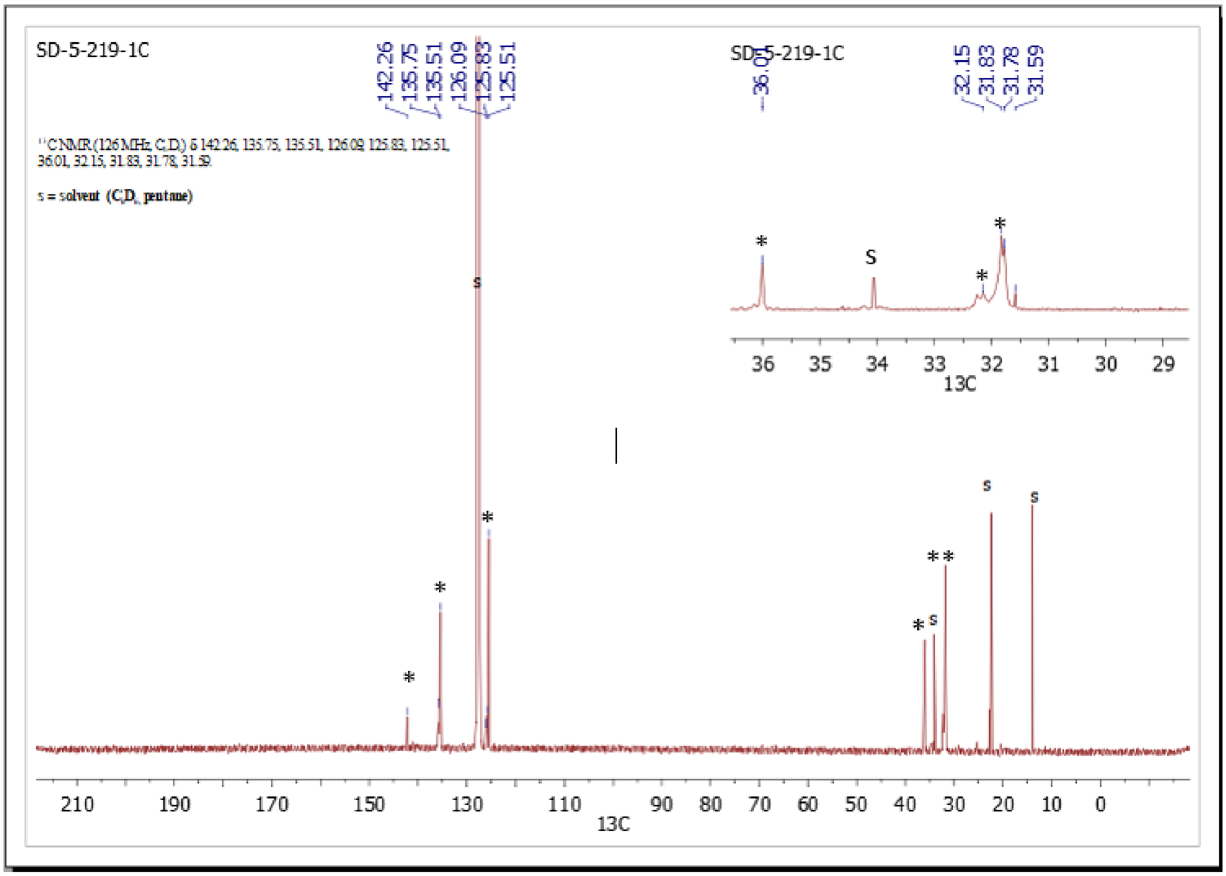
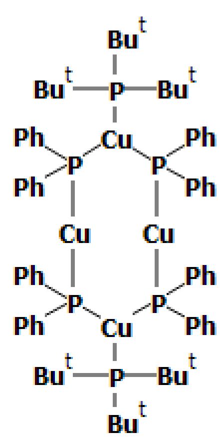


Figure S5. ^{13}C NMR spectra of **1** synthesized by method A (C_6D_6, 126 MHz). Residual solvent is visible.

* = signal for **1.**



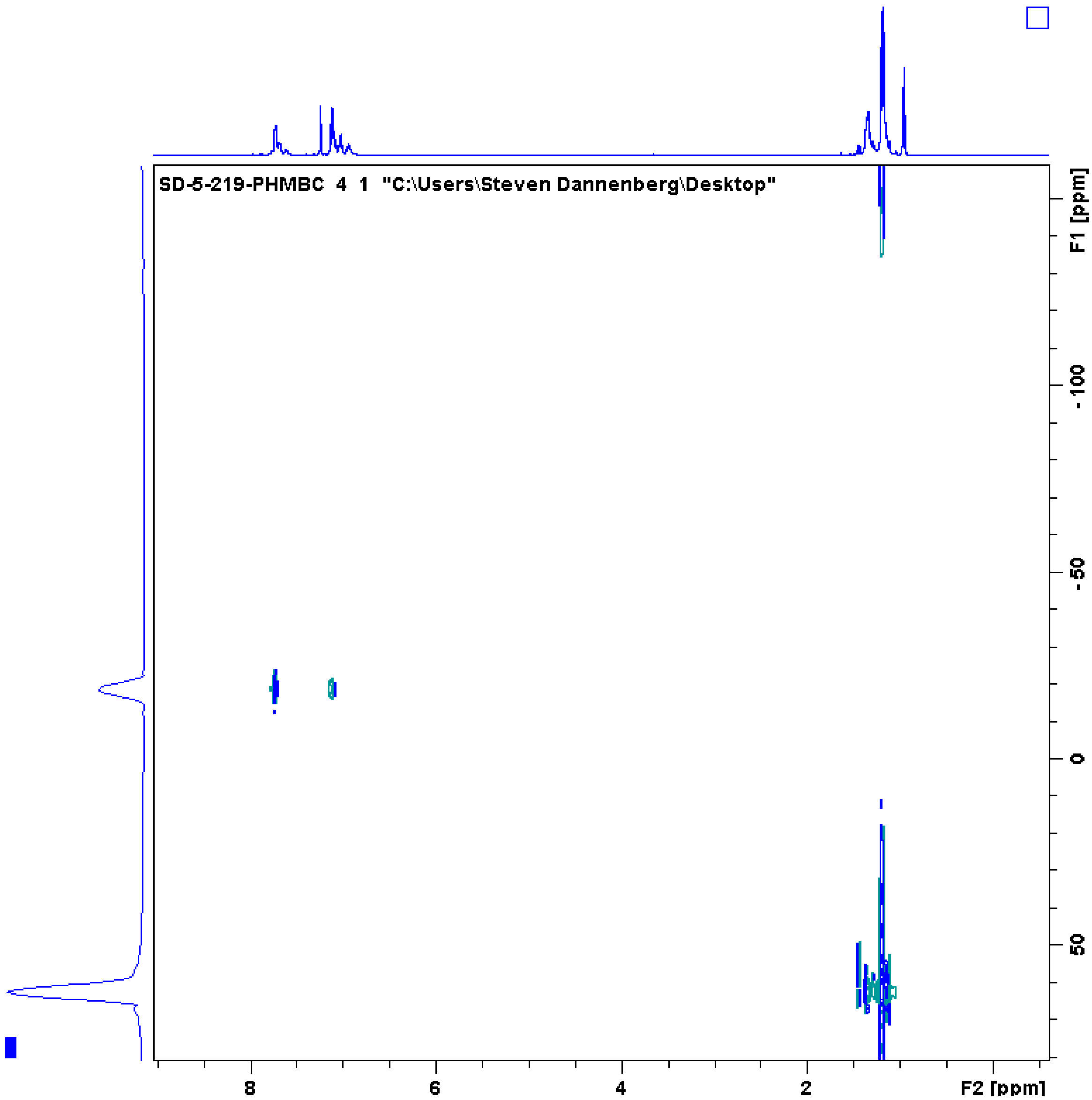
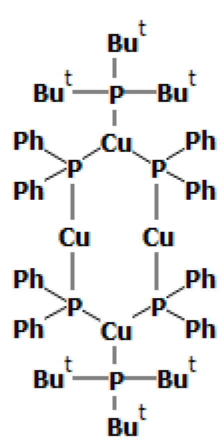


Figure S6. ^{31}P HMBC NMR spectrum of **1** synthesized by method A.



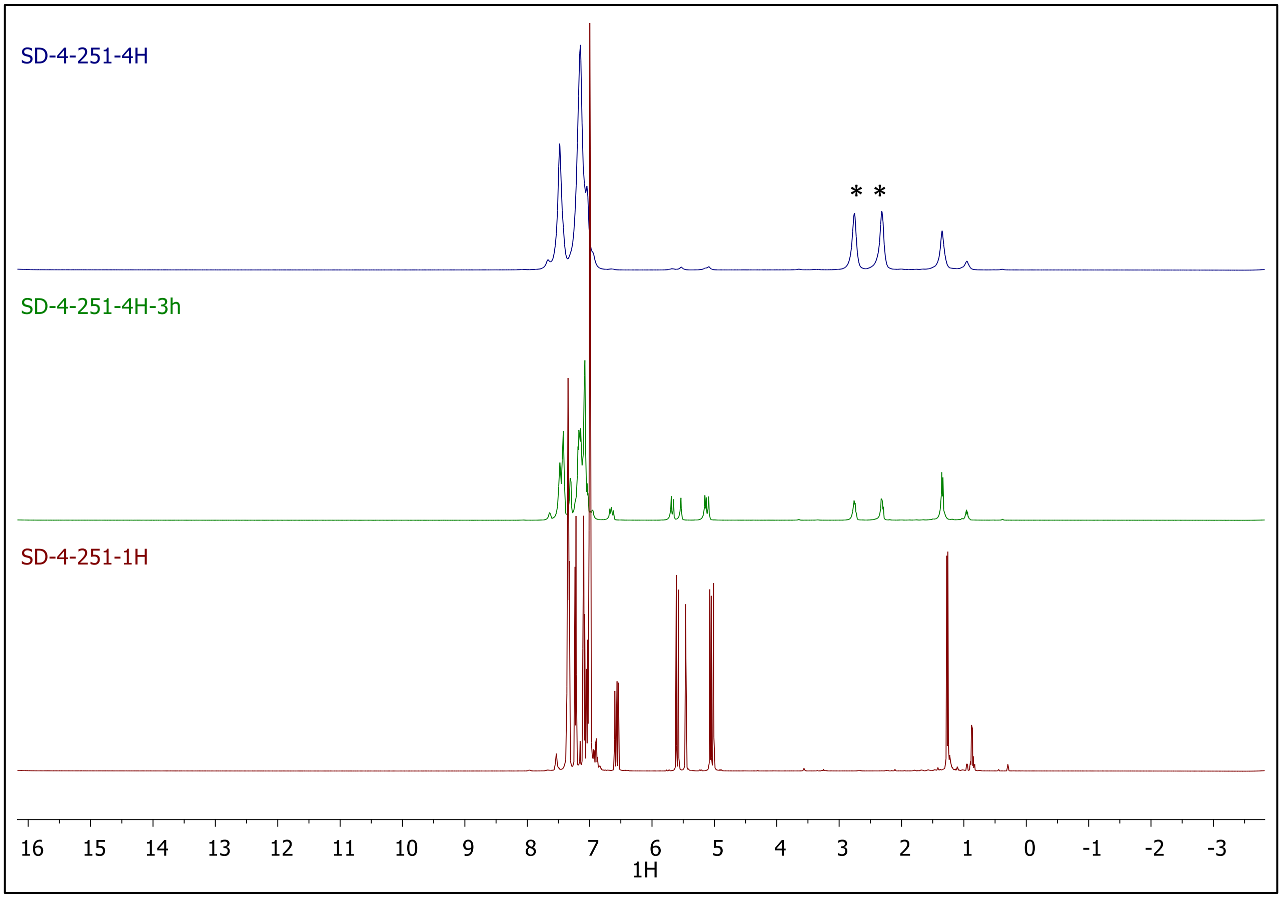
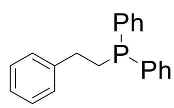


Figure S7. Stacked ^{1}H NMR spectra of the hydrophosphination of styrene with diphenylphosphine by 6 mol% of **1** under 360 nm irradiation. t = 0 (bottom), t = 3 h (middle), t = 24 h (top).

* = signal for 

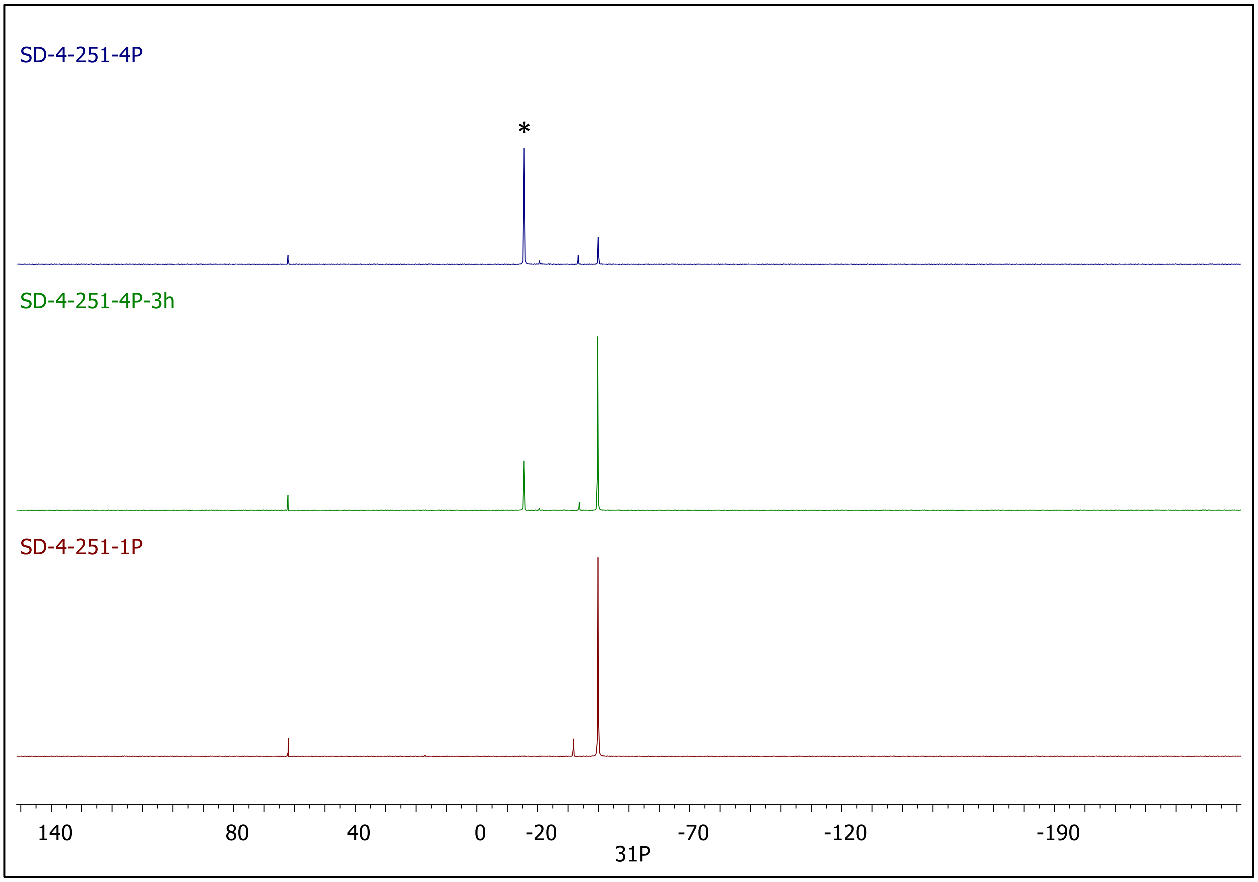
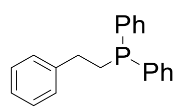


Figure S8. Stacked ^{31}P NMR spectra of the hydrophosphination of styrene with diphenylphosphine by 6 mol% of 1 under 360 nm irradiation. t = 0 (bottom), t = 3 h (middle), t = 24 h (top).

* = signal for 

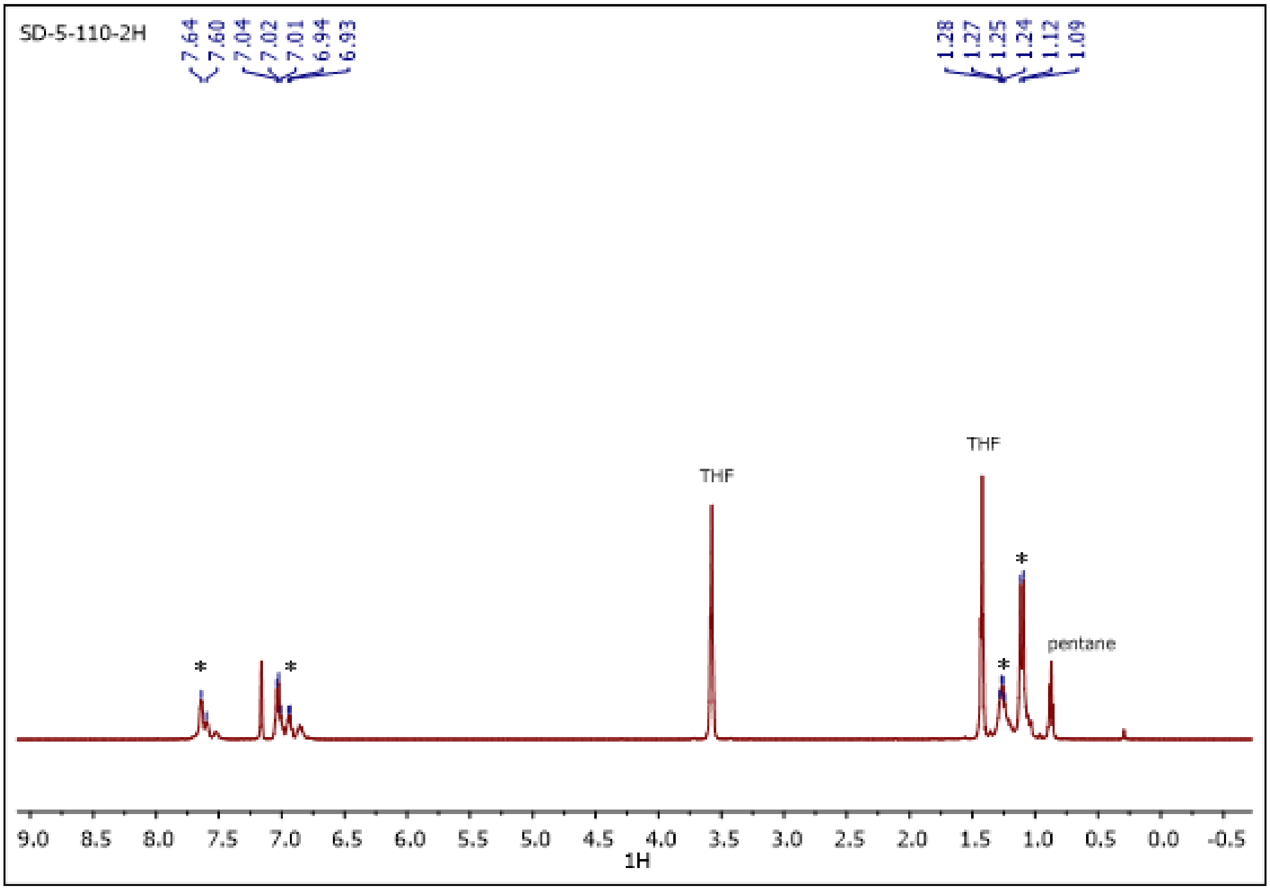
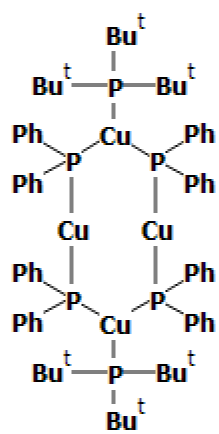


Figure S9. ^{1}H NMR spectra of **1** synthesized by method B (C_6D_6 δ = 7.16, 500 MHz). Signal for residual THF and pentane is visible. * = signal for **1**.



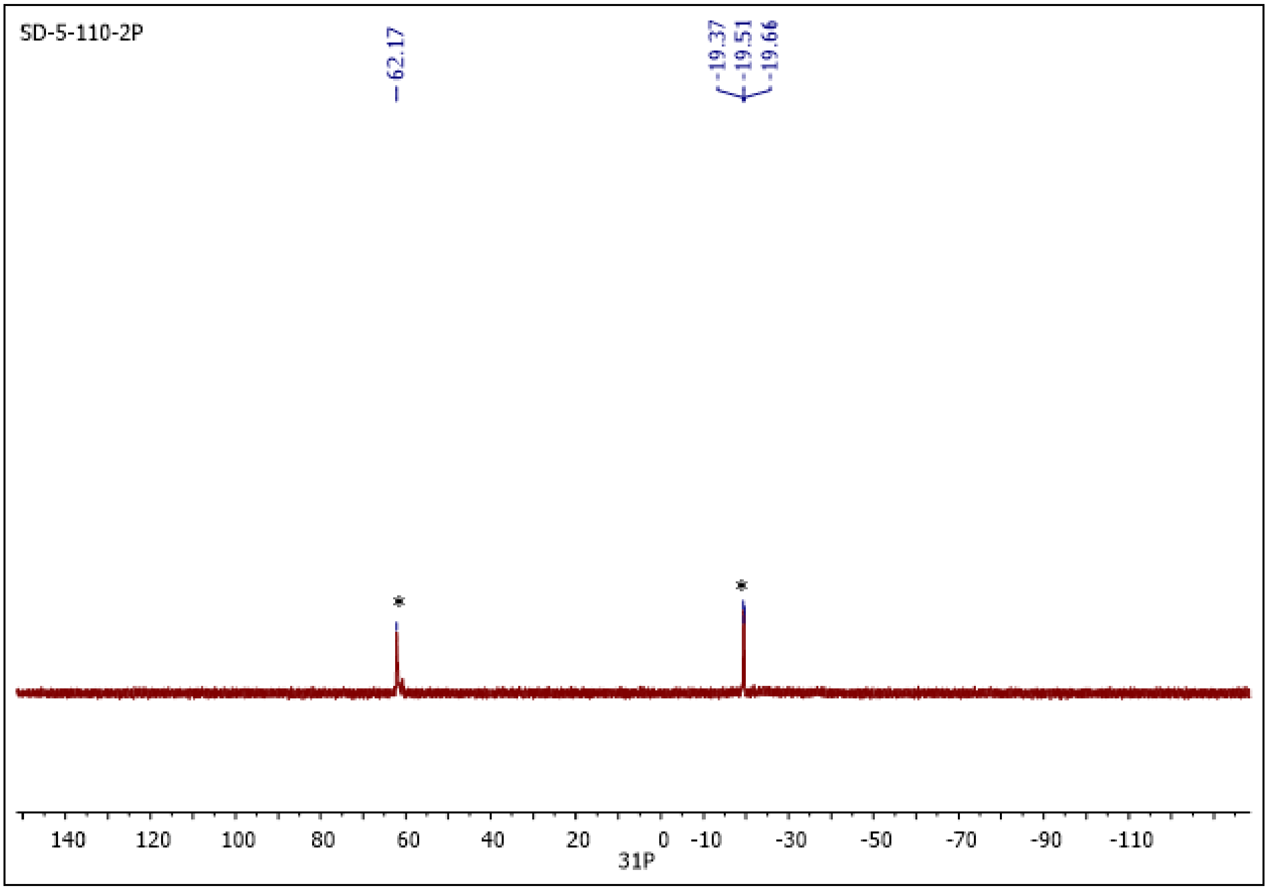
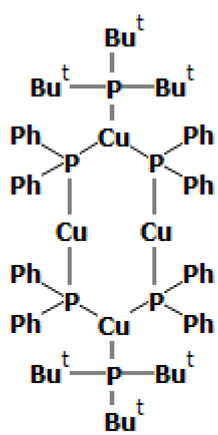


Figure S10. ^{31}P NMR spectra of **1** synthesized by method B (C_6D_6, 202 MHz). * = signal for **1**.



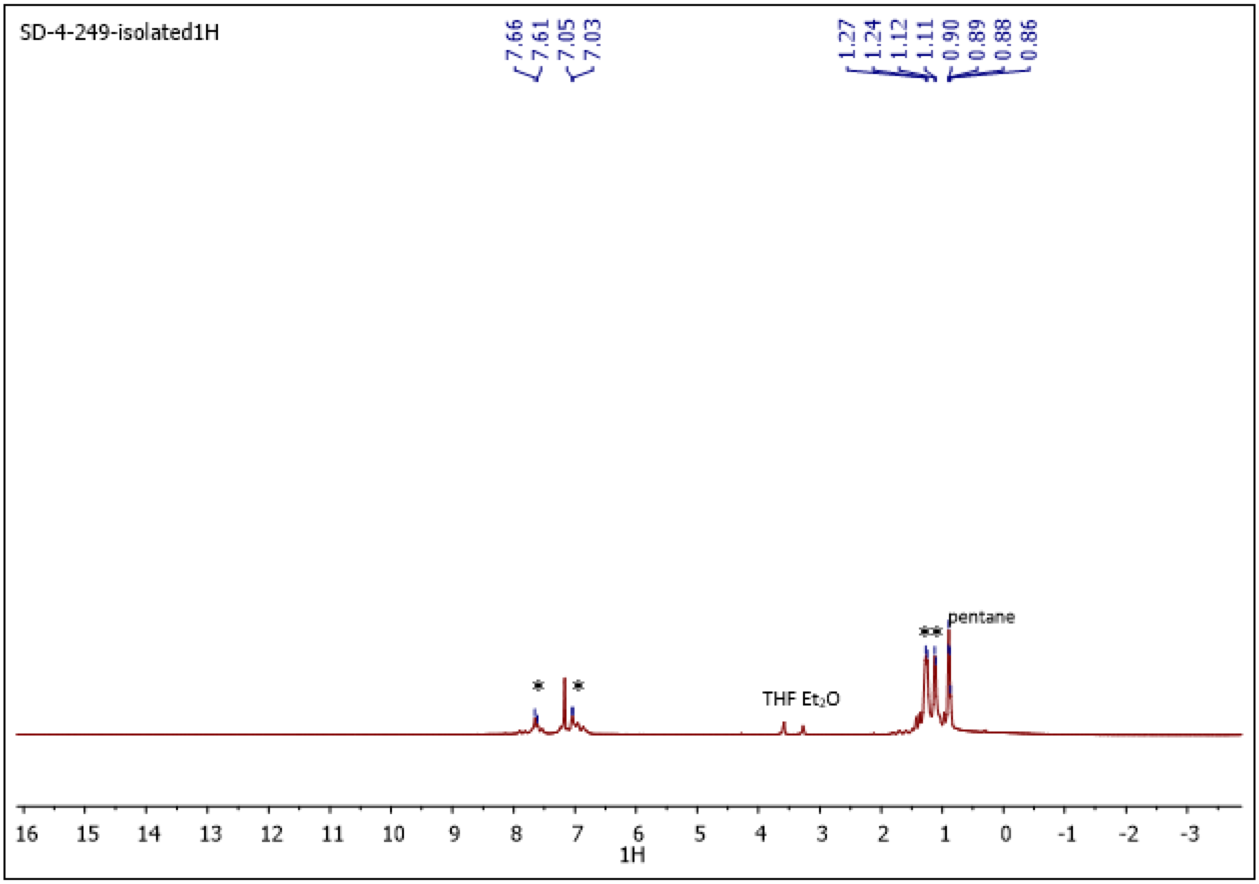
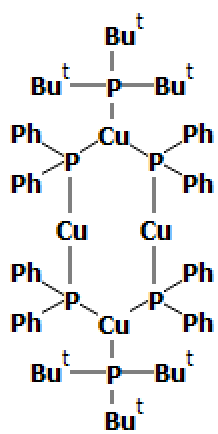


Figure S11. ^{1}H NMR spectra of **1** synthesized by method C (C_6D_6 δ = 7.16, 500 MHz). Residual solvent is visible and overlapping with alkyl peaks. * = signal for **1**.



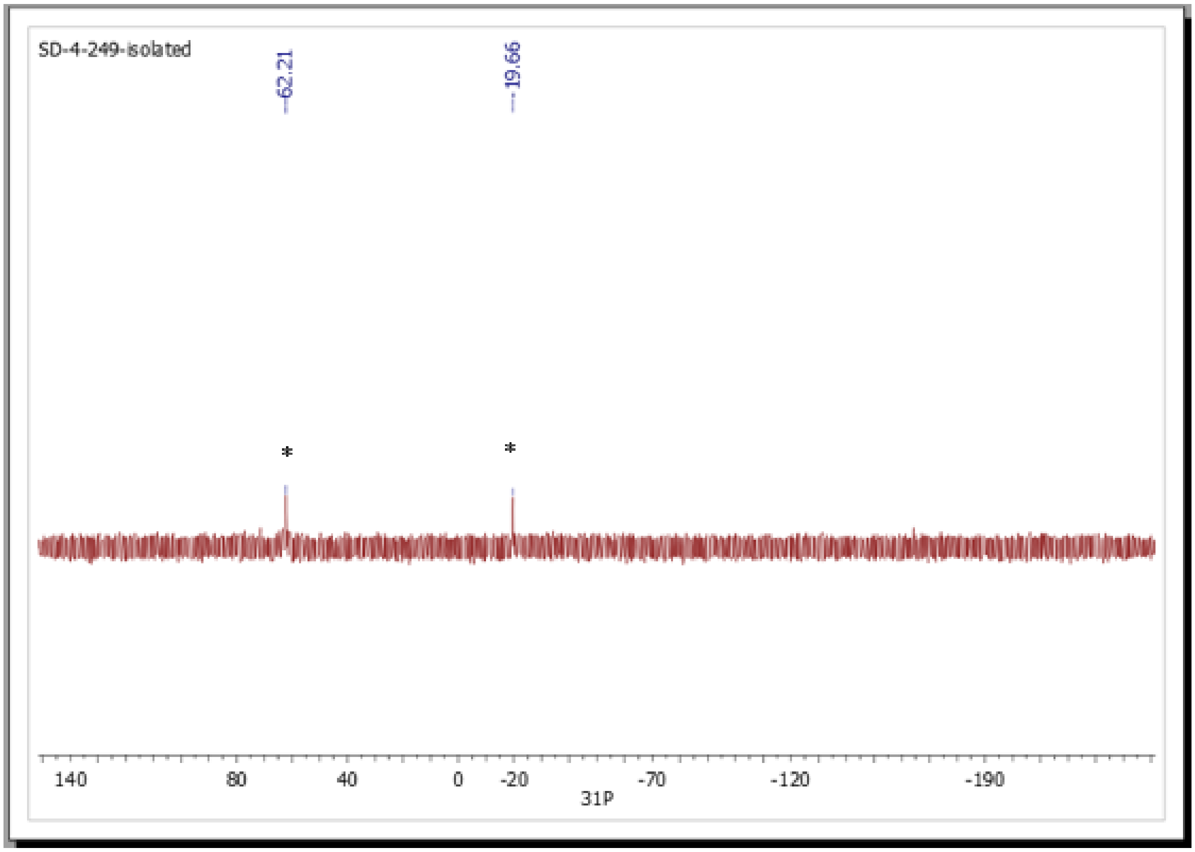


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Figure S12. ^{31}P NMR spectra of **1** synthesized by method C (C_6D_6, 202 MHz). * = signal for **1.**

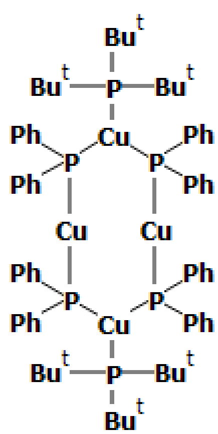


Figure S13. Bond Lengths and Angles

Atom–Atom	Length [Å]
Cu1–P5	2.2738(10)
Cu1–P4	2.3046(11)
Cu1–P1	2.3076(10)
P1–C19	1.844(2)
P1–C25	1.848(2)
P1–Cu2	2.2272(12)
Cu2–P2	2.2209(13)
Cu2–Cu4	2.8612(13)
P2–C37	1.839(2)
P2–C31	1.840(2)
P2–Cu3	2.3047(11)
Cu3–P6	2.2799(11)
Cu3–P3	2.3068(10)
P3–C72	1.840(2)
P3–C1	1.840(2)
P3–Cu4	2.2232(12)
Cu4–P4	2.2273(12)
P4–C7	1.839(2)
P4–C13	1.842(2)
P5–C55	1.903(2)
P5–C59	1.903(2)
P5–C63	1.907(2)
P6–C47	1.907(2)
P6–C52	1.909(2)
P6–C43	1.914(2)
C1–C2	1.376(3)
C1–C6	1.390(3)
C2–C3	1.389(4)
C2–H2	0.9500
C3–C4	1.363(5)
C3–H3	0.9500
C4–C5	1.373(5)
C4–H4	0.9500
C5–C6	1.389(4)
C5–H5	0.9500
C6–H6	0.9500
C7–C12	1.397(3)
C7–C8	1.397(3)
C8–C9	1.383(3)
C8–H8	0.9500
C9–C10	1.380(4)
C9–H9	0.9500
C10–C11	1.382(4)
C10–H10	0.9500
C11–C12	1.392(3)
C11–H11	0.9500
C12–H12	0.9500
C13–C14	1.383(3)
C13–C18	1.393(3)
C14–C15	1.391(3)
C14–H14	0.9500
C15–C16	1.370(4)
C15–H15	0.9500
C16–C17	1.364(3)
C16–H16	0.9500
C17–C18	1.384(3)
C17–H17	0.9500
C18–H18	0.9500
C19–C24	1.384(3)
C19–C20	1.387(3)
C20–C21	1.387(3)
C20–H20	0.9500
C21–C22	1.377(4)
C21–H21	0.9500
C22–C23	1.368(3)
C22–H22	0.9500
C24–C23	1.393(3)
C24–H24	0.9500
C23–H23	0.9500
C25–C26	1.389(3)
C25–C30	1.395(3)
C26–C27	1.389(3)
C26–H26	0.9500
C27–C28	1.385(4)
C27–H27	0.9500
C28–C29	1.391(4)
C28–H28	0.9500
C29–C30	1.384(3)
C29–H29	0.9500
C30–H30	0.9500
C31–C32	1.388(3)
C31–C36	1.398(3)
C32–C33	1.391(3)
C32–H32	0.9500
C33–C34	1.382(4)
C33–H33	0.9500
C34–C35	1.369(4)
C34–H34	0.9500
C35–C36	1.390(3)
C35–H35	0.9500
C36–H36	0.9500
C37–C42	1.378(3)
C37–C38	1.395(3)
C38–C39	1.390(4)
C38–H38	0.9500
C39–C40	1.357(4)
C39–H39	0.9500
C40–C41	1.366(4)
C40–H40	0.9500
C41–C42	1.393(4)
C41–H41	0.9500
C42–H42	0.9500
C43–C44	1.533(3)

C43–C45	1.543(3)	C61–H61A	0.9800
C43–C46	1.545(3)	C61–H61B	0.9800
C44–H44A	0.9800	C61–H61C	0.9800
C44–H44B	0.9800	C62–H62A	0.9800
C44–H44C	0.9800	C62–H62B	0.9800
C45–H45A	0.9800	C62–H62C	0.9800
C45–H45B	0.9800	C63–C66	1.516(4)
C45–H45C	0.9800	C63–C64	1.532(3)
C46–H46A	0.9800	C63–C65	1.551(3)
C46–H46B	0.9800	C64–H64A	0.9800
C46–H46C	0.9800	C64–H64B	0.9800
C47–C50	1.535(3)	C64–H64C	0.9800
C47–C48	1.544(3)	C65–H65A	0.9800
C47–C49	1.547(3)	C65–H65B	0.9800
C48–H48A	0.9800	C65–H65C	0.9800
C48–H48B	0.9800	C66–H66A	0.9800
C48–H48C	0.9800	C66–H66B	0.9800
C49–H49A	0.9800	C66–H66C	0.9800
C49–H49B	0.9800	C67–C68	1.388(3)
C49–H49C	0.9800	C67–C72	1.392(3)
C50–H50A	0.9800	C67–H67	0.9500
C50–H50B	0.9800	C68–C69	1.378(4)
C50–H50C	0.9800	C68–H68	0.9500
C51–C52	1.550(3)	C69–C70	1.371(4)
C51–H51A	0.9800	C69–H69	0.9500
C51–H51B	0.9800	C70–C71	1.380(3)
C51–H51C	0.9800	C70–H70	0.9500
C52–C53	1.537(3)	C71–C72	1.406(3)
C52–C54	1.542(3)	C71–H71	0.9500
C53–H53A	0.9800	O1_2–C4_2	1.391(4)
C53–H53B	0.9800	O1_2–C1_2	1.412(4)
C53–H53C	0.9800	C1_2–C2_2	1.447(5)
C54–H54A	0.9800	C1_2–H1A_2	0.9900
C54–H54B	0.9800	C1_2–H1B_2	0.9900
C54–H54C	0.9800	C2_2–C3_2	1.507(5)
C55–C56	1.534(3)	C2_2–H2A_2	0.9900
C55–C57	1.545(3)	C2_2–H2B_2	0.9900
C55–C58	1.550(3)	C3_2–C4_2	1.478(5)
C56–H56A	0.9800	C3_2–H3A_2	0.9900
C56–H56B	0.9800	C3_2–H3B_2	0.9900
C56–H56C	0.9800	C4_2–H4A_2	0.9900
C57–H57A	0.9800	C4_2–H4B_2	0.9900
C57–H57B	0.9800	O1_3–C4_3	1.394(5)
C57–H57C	0.9800	O1_3–C1_3	1.450(5)
C58–H58A	0.9800	C1_3–C2_3	1.415(6)
C58–H58B	0.9800	C1_3–H1A_3	0.9900
C58–H58C	0.9800	C1_3–H1B_3	0.9900
C59–C61	1.540(4)	C2_3–C3_3	1.501(6)
C59–C62	1.542(4)	C2_3–H2A_3	0.9900
C59–C60	1.544(3)	C2_3–H2B_3	0.9900
C60–H60A	0.9800	C3_3–C4_3	1.474(5)
C60–H60B	0.9800	C3_3–H3A_3	0.9900
C60–H60C	0.9800	C3_3–H3B_3	0.9900

C4_3–H4A_3	0.9900
C4_3–H4B_3	0.9900

Atom–Atom–Atom	**Angle [°]**
P5–Cu1–P4	129.66(3)
P5–Cu1–P1	130.14(4)
P4–Cu1–P1	98.75(4)
C19–P1–C25	103.60(9)
C19–P1–Cu2	106.58(7)
C25–P1–Cu2	102.99(7)
C19–P1–Cu1	109.42(8)
C25–P1–Cu1	117.51(6)
Cu2–P1–Cu1	115.59(4)
P2–Cu2–P1	167.32(3)
P2–Cu2–Cu4	96.16(2)
P1–Cu2–Cu4	95.68(3)
C37–P2–C31	102.48(10)
C37–P2–Cu2	111.13(8)
C31–P2–Cu2	101.77(7)
C37–P2–Cu3	110.63(7)
C31–P2–Cu3	117.44(8)
Cu2–P2–Cu3	112.70(3)
P6–Cu3–P2	132.84(3)
P6–Cu3–P3	127.65(3)
P2–Cu3–P3	98.62(4)
C72–P3–C1	100.15(10)
C72–P3–Cu4	109.04(8)
C1–P3–Cu4	105.18(7)
C72–P3–Cu3	125.56(7)
C1–P3–Cu3	114.54(7)
Cu4–P3–Cu3	100.98(4)
P3–Cu4–P4	173.43(2)
P3–Cu4–Cu2	92.32(3)
P4–Cu4–Cu2	94.02(3)
C7–P4–C13	100.35(10)
C7–P4–Cu4	106.18(8)
C13–P4–Cu4	104.14(7)
C7–P4–Cu1	125.93(7)
C13–P4–Cu1	113.23(8)
Cu4–P4–Cu1	105.06(4)
C55–P5–C59	109.61(12)
C55–P5–C63	108.56(12)
C59–P5–C63	108.43(11)
C55–P5–Cu1	105.07(8)
C59–P5–Cu1	109.29(8)
C63–P5–Cu1	115.75(8)
C47–P6–C52	109.11(10)
C47–P6–C43	108.12(10)
C52–P6–C43	107.94(11)
C47–P6–Cu3	107.97(8)
C52–P6–Cu3	107.83(7)
C43–P6–Cu3	115.73(7)
C2–C1–C6	117.5(2)
C2–C1–P3	121.90(18)
C6–C1–P3	120.65(18)
C1–C2–C3	121.2(3)
C1–C2–H2	119.4
C3–C2–H2	119.4
C4–C3–C2	120.4(3)
C4–C3–H3	119.8
C2–C3–H3	119.8
C3–C4–C5	119.7(3)
C3–C4–H4	120.1
C5–C4–H4	120.1
C4–C5–C6	119.7(3)
C4–C5–H5	120.2
C6–C5–H5	120.2
C5–C6–C1	121.4(3)
C5–C6–H6	119.3
C1–C6–H6	119.3
C12–C7–C8	117.3(2)
C12–C7–P4	122.22(17)
C8–C7–P4	120.45(17)
C9–C8–C7	121.6(2)
C9–C8–H8	119.2
C7–C8–H8	119.2
C10–C9–C8	120.1(2)
C10–C9–H9	119.9
C8–C9–H9	119.9
C9–C10–C11	119.6(2)
C9–C10–H10	120.2
C11–C10–H10	120.2
C10–C11–C12	120.2(2)
C10–C11–H11	119.9
C12–C11–H11	119.9
C11–C12–C7	121.1(2)
C11–C12–H12	119.5
C7–C12–H12	119.5
C14–C13–C18	117.4(2)
C14–C13–P4	122.04(16)
C18–C13–P4	120.57(16)
C13–C14–C15	121.0(2)
C13–C14–H14	119.5
C15–C14–H14	119.5
C16–C15–C14	120.4(2)
C16–C15–H15	119.8
C14–C15–H15	119.8
C17–C16–C15	119.5(2)
C17–C16–H16	120.2
C15–C16–H16	120.2
C16–C17–C18	120.4(2)
C16–C17–H17	119.8
C18–C17–H17	119.8
C17–C18–C13	121.2(2)
C17–C18–H18	119.4
C13–C18–H18	119.4

C24–C19–C20	117.4(2)
C24–C19–P1	121.32(16)
C20–C19–P1	121.13(17)
C19–C20–C21	121.1(2)
C19–C20–H20	119.4
C21–C20–H20	119.4
C22–C21–C20	120.4(2)
C22–C21–H21	119.8
C20–C21–H21	119.8
C23–C22–C21	119.6(2)
C23–C22–H22	120.2
C21–C22–H22	120.2
C19–C24–C23	121.7(2)
C19–C24–H24	119.2
C23–C24–H24	119.2
C22–C23–C24	119.8(2)
C22–C23–H23	120.1
C24–C23–H23	120.1
C26–C25–C30	117.8(2)
C26–C25–P1	124.05(17)
C30–C25–P1	118.09(17)
C25–C26–C27	121.5(2)
C25–C26–H26	119.3
C27–C26–H26	119.3
C28–C27–C26	120.3(2)
C28–C27–H27	119.9
C26–C27–H27	119.9
C27–C28–C29	118.8(2)
C27–C28–H28	120.6
C29–C28–H28	120.6
C30–C29–C28	120.8(2)
C30–C29–H29	119.6
C28–C29–H29	119.6
C29–C30–C25	120.9(2)
C29–C30–H30	119.6
C25–C30–H30	119.6
C32–C31–C36	117.7(2)
C32–C31–P2	124.26(17)
C36–C31–P2	117.99(17)
C31–C32–C33	121.1(2)
C31–C32–H32	119.4
C33–C32–H32	119.4
C34–C33–C32	119.9(3)
C34–C33–H33	120.1
C32–C33–H33	120.1
C35–C34–C33	120.1(2)
C35–C34–H34	119.9
C33–C34–H34	119.9
C34–C35–C36	120.0(2)
C34–C35–H35	120.0
C36–C35–H35	120.0
C35–C36–C31	121.1(2)
C35–C36–H36	119.4
C31–C36–H36	119.4
C42–C37–C38	117.1(2)
C42–C37–P2	120.37(17)
C38–C37–P2	122.47(18)
C39–C38–C37	121.0(2)
C39–C38–H38	119.5
C37–C38–H38	119.5
C40–C39–C38	120.3(3)
C40–C39–H39	119.8
C38–C39–H39	119.8
C39–C40–C41	120.2(3)
C39–C40–H40	119.9
C41–C40–H40	119.9
C40–C41–C42	119.7(3)
C40–C41–H41	120.2
C42–C41–H41	120.2
C37–C42–C41	121.7(2)
C37–C42–H42	119.2
C41–C42–H42	119.2
C44–C43–C45	105.1(2)
C44–C43–C46	108.48(19)
C45–C43–C46	108.77(19)
C44–C43–P6	109.22(16)
C45–C43–P6	108.93(15)
C46–C43–P6	115.77(16)
C43–C44–H44A	109.5
C43–C44–H44B	109.5
H44A–C44–H44B	109.5
C43–C44–H44C	109.5
H44A–C44–H44C	109.5
H44B–C44–H44C	109.5
C43–C45–H45A	109.5
C43–C45–H45B	109.5
H45A–C45–H45B	109.5
C43–C45–H45C	109.5
H45A–C45–H45C	109.5
H45B–C45–H45C	109.5
C43–C46–H46A	109.5
C43–C46–H46B	109.5
H46A–C46–H46B	109.5
C43–C46–H46C	109.5
H46A–C46–H46C	109.5
H46B–C46–H46C	109.5
C50–C47–C48	105.5(2)
C50–C47–C49	109.0(2)
C48–C47–C49	108.10(19)
C50–C47–P6	108.19(15)
C48–C47–P6	109.43(16)
C49–C47–P6	116.11(17)
C47–C48–H48A	109.5
C47–C48–H48B	109.5
H48A–C48–H48B	109.5
C47–C48–H48C	109.5

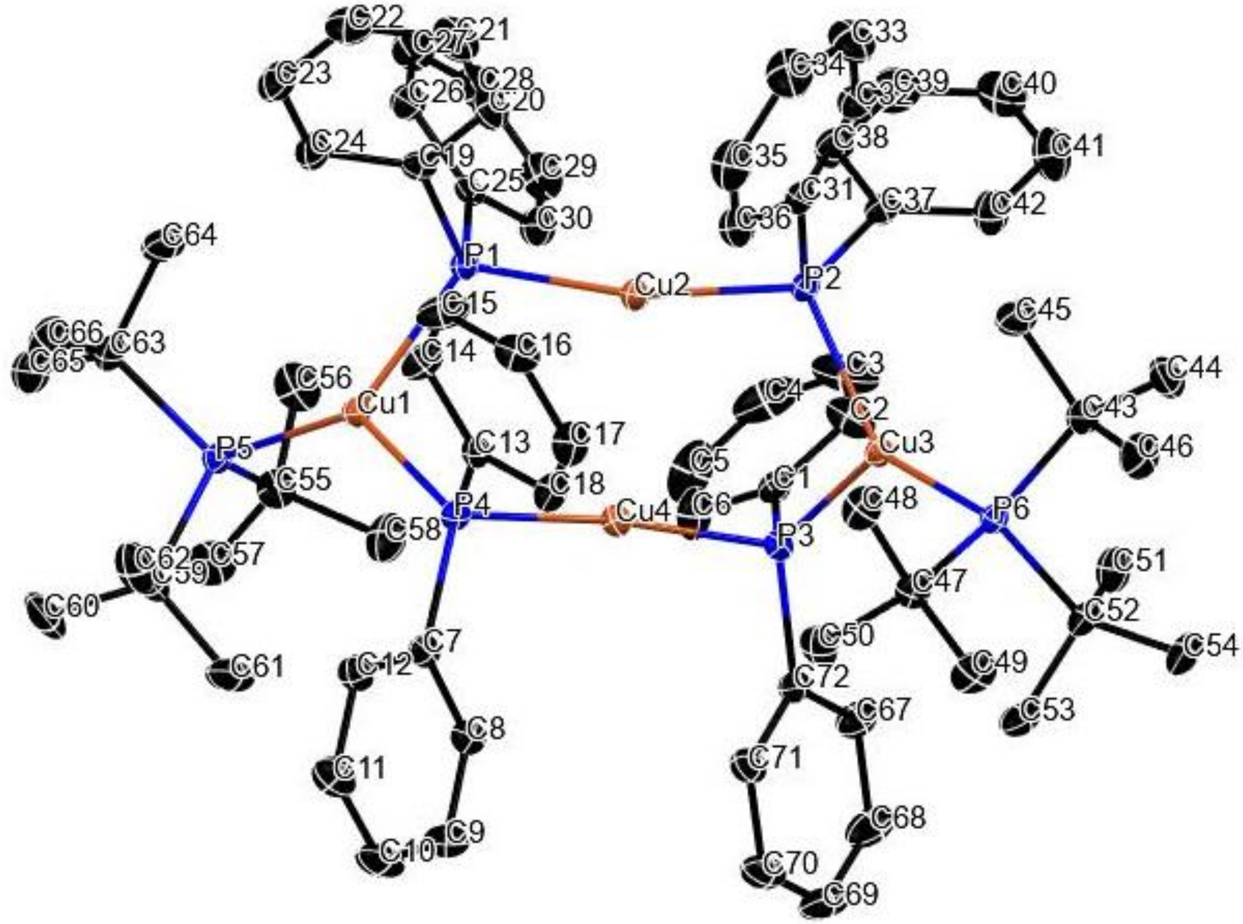
H48A–C48–H48C	109.5
H48B–C48–H48C	109.5
C47–C49–H49A	109.5
C47–C49–H49B	109.5
H49A–C49–H49B	109.5
C47–C49–H49C	109.5
H49A–C49–H49C	109.5
H49B–C49–H49C	109.5
C47–C50–H50A	109.5
C47–C50–H50B	109.5
H50A–C50–H50B	109.5
C47–C50–H50C	109.5
H50A–C50–H50C	109.5
H50B–C50–H50C	109.5
C52–C51–H51A	109.5
C52–C51–H51B	109.5
H51A–C51–H51B	109.5
C52–C51–H51C	109.5
H51A–C51–H51C	109.5
H51B–C51–H51C	109.5
C53–C52–C54	107.81(19)
C53–C52–C51	104.51(18)
C54–C52–C51	110.39(19)
C53–C52–P6	109.86(15)
C54–C52–P6	116.81(16)
C51–C52–P6	106.77(15)
C52–C53–H53A	109.5
C52–C53–H53B	109.5
H53A–C53–H53B	109.5
C52–C53–H53C	109.5
H53A–C53–H53C	109.5
H53B–C53–H53C	109.5
C52–C54–H54A	109.5
C52–C54–H54B	109.5
H54A–C54–H54B	109.5
C52–C54–H54C	109.5
H54A–C54–H54C	109.5
H54B–C54–H54C	109.5
C56–C55–C57	108.1(2)
C56–C55–C58	105.3(2)
C57–C55–C58	110.0(2)
C56–C55–P5	110.58(17)
C57–C55–P5	116.17(18)
C58–C55–P5	106.16(16)
C55–C56–H56A	109.5
C55–C56–H56B	109.5
H56A–C56–H56B	109.5
C55–C56–H56C	109.5
H56A–C56–H56C	109.5
H56B–C56–H56C	109.5
C55–C57–H57A	109.5
C55–C57–H57B	109.5
H57A–C57–H57B	109.5
C55–C57–H57C	109.5
H57A–C57–H57C	109.5
H57B–C57–H57C	109.5
C55–C58–H58A	109.5
C55–C58–H58B	109.5
H58A–C58–H58B	109.5
C55–C58–H58C	109.5
H58A–C58–H58C	109.5
H58B–C58–H58C	109.5
C61–C59–C62	105.4(2)
C61–C59–C60	108.6(2)
C62–C59–C60	108.9(2)
C61–C59–P5	108.48(17)
C62–C59–P5	108.63(17)
C60–C59–P5	116.25(17)
C59–C60–H60A	109.5
C59–C60–H60B	109.5
H60A–C60–H60B	109.5
C59–C60–H60C	109.5
H60A–C60–H60C	109.5
H60B–C60–H60C	109.5
C59–C61–H61A	109.5
C59–C61–H61B	109.5
H61A–C61–H61B	109.5
C59–C61–H61C	109.5
H61A–C61–H61C	109.5
H61B–C61–H61C	109.5
C59–C62–H62A	109.5
C59–C62–H62B	109.5
H62A–C62–H62B	109.5
C59–C62–H62C	109.5
H62A–C62–H62C	109.5
H62B–C62–H62C	109.5
C66–C63–C64	106.2(2)
C66–C63–C65	109.1(2)
C64–C63–C65	107.4(2)
C66–C63–P5	108.87(19)
C64–C63–P5	109.14(16)
C65–C63–P5	115.61(18)
C63–C64–H64A	109.5
C63–C64–H64B	109.5
H64A–C64–H64B	109.5
C63–C64–H64C	109.5
H64A–C64–H64C	109.5
H64B–C64–H64C	109.5
C63–C65–H65A	109.5
C63–C65–H65B	109.5
H65A–C65–H65B	109.5
C63–C65–H65C	109.5
H65A–C65–H65C	109.5
H65B–C65–H65C	109.5
C63–C66–H66A	109.5
C63–C66–H66B	109.5

H66A–C66–H66B	109.5
C63–C66–H66C	109.5
H66A–C66–H66C	109.5
H66B–C66–H66C	109.5
C68–C67–C72	120.8(3)
C68–C67–H67	119.6
C72–C67–H67	119.6
C69–C68–C67	120.9(3)
C69–C68–H68	119.5
C67–C68–H68	119.5
C70–C69–C68	119.2(2)
C70–C69–H69	120.4
C68–C69–H69	120.4
C69–C70–C71	120.6(3)
C69–C70–H70	119.7
C71–C70–H70	119.7
C70–C71–C72	121.3(2)
C70–C71–H71	119.4
C72–C71–H71	119.4
C67–C72–C71	117.2(2)
C67–C72–P3	121.96(18)
C71–C72–P3	120.75(17)
C4_2–O1_2–C1_2	107.8(3)
O1_2–C1_2–C2_2	105.9(3)
O1_2–C1_2–H1A_2	110.6
C2_2–C1_2–H1A_2	110.6
O1_2–C1_2–H1B_2	110.6
C2_2–C1_2–H1B_2	110.6
H1A_2–C1_2–H1B_2	108.7
C1_2–C2_2–C3_2	102.0(3)
C1_2–C2_2–H2A_2	111.4
C3_2–C2_2–H2A_2	111.4
C1_2–C2_2–H2B_2	111.4
C3_2–C2_2–H2B_2	111.4
H2A_2–C2_2–H2B_2	109.2
C4_2–C3_2–C2_2	101.3(3)
C4_2–C3_2–H3A_2	111.5
C2_2–C3_2–H3A_2	111.5
C4_2–C3_2–H3B_2	111.5
C2_2–C3_2–H3B_2	111.5
H3A_2–C3_2–H3B_2	109.3
O1_2–C4_2–C3_2	108.7(3)
O1_2–C4_2–H4A_2	110.0
C3_2–C4_2–H4A_2	110.0
O1_2–C4_2–H4B_2	110.0
C3_2–C4_2–H4B_2	110.0
H4A_2–C4_2–H4B_2	108.3
C4_3–O1_3–C1_3	108.7(3)
C2_3–C1_3–O1_3	107.5(4)
C2_3–C1_3–H1A_3	110.2
O1_3–C1_3–H1A_3	110.2
C2_3–C1_3–H1B_3	110.2
O1_3–C1_3–H1B_3	110.2
H1A_3–C1_3–H1B_3	108.5
C1_3–C2_3–C3_3	104.2(4)
C1_3–C2_3–H2A_3	110.9
C3_3–C2_3–H2A_3	110.9
C1_3–C2_3–H2B_3	110.9
C3_3–C2_3–H2B_3	110.9
H2A_3–C2_3–H2B_3	108.9
C4_3–C3_3–C2_3	103.5(3)
C4_3–C3_3–H3A_3	111.1
C2_3–C3_3–H3A_3	111.1
C4_3–C3_3–H3B_3	111.1
C2_3–C3_3–H3B_3	111.1
H3A_3–C3_3–H3B_3	109.0
O1_3–C4_3–C3_3	107.1(4)
O1_3–C4_3–H4A_3	110.3
C3_3–C4_3–H4A_3	110.3
O1_3–C4_3–H4B_3	110.3
C3_3–C4_3–H4B_3	110.3
H4A_3–C4_3–H4B_3	108.5

Atom–Atom–Atom–Atom	**Torsion Angle [°]**
C72–P3–C1–C2	−116.3(2)
Cu4–P3–C1–C2	130.63(19)
Cu3–P3–C1–C2	20.7(2)
C72–P3–C1–C6	63.3(2)
Cu4–P3–C1–C6	−49.8(2)
Cu3–P3–C1–C6	−159.74(17)
C6–C1–C2–C3	1.9(4)
P3–C1–C2–C3	−178.5(2)
C1–C2–C3–C4	−2.1(4)
C2–C3–C4–C5	0.1(5)
C3–C4–C5–C6	2.0(5)
C4–C5–C6–C1	−2.1(4)
C2–C1–C6–C5	0.2(4)
P3–C1–C6–C5	−179.4(2)
C13–P4–C7–C12	43.63(19)
Cu4–P4–C7–C12	151.78(16)
Cu1–P4–C7–C12	−85.23(19)
C13–P4–C7–C8	−137.51(18)
Cu4–P4–C7–C8	−29.36(19)
Cu1–P4–C7–C8	93.63(18)
C12–C7–C8–C9	−1.8(3)
P4–C7–C8–C9	179.34(18)
C7–C8–C9–C10	0.9(4)
C8–C9–C10–C11	0.6(4)
C9–C10–C11–C12	−1.3(4)
C10–C11–C12–C7	0.5(4)
C8–C7–C12–C11	1.0(3)
P4–C7–C12–C11	179.94(18)
C7–P4–C13–C14	−126.20(19)
Cu4–P4–C13–C14	124.04(18)
Cu1–P4–C13–C14	10.5(2)

C7–P4–C13–C18	55.87(19)
Cu4–P4–C13–C18	−53.89(18)
Cu1–P4–C13–C18	−167.45(15)
C18–C13–C14–C15	1.1(3)
P4–C13–C14–C15	−176.87(19)
C13–C14–C15–C16	−0.7(4)
C14–C15–C16–C17	−0.6(4)
C15–C16–C17–C18	1.5(4)
C16–C17–C18–C13	−1.1(4)
C14–C13–C18–C17	−0.2(3)
P4–C13–C18–C17	177.81(18)
C25–P1–C19–C24	89.81(19)
Cu2–P1–C19–C24	−161.93(17)
Cu1–P1–C19–C24	−36.3(2)
C25–P1–C19–C20	−95.08(19)
Cu2–P1–C19–C20	13.18(19)
Cu1–P1–C19–C20	138.83(17)
C24–C19–C20–C21	−0.4(4)
P1–C19–C20–C21	−175.7(2)
C19–C20–C21–C22	0.3(4)
C20–C21–C22–C23	0.1(4)
C20–C19–C24–C23	0.2(4)
P1–C19–C24–C23	175.48(19)
C21–C22–C23–C24	−0.3(4)
C19–C24–C23–C22	0.2(4)
C19–P1–C25–C26	−25.8(2)
Cu2–P1–C25–C26	−136.69(17)
Cu1–P1–C25–C26	95.00(18)
C19–P1–C25–C30	155.50(17)
Cu2–P1–C25–C30	44.58(17)
Cu1–P1–C25–C30	−83.74(18)
C30–C25–C26–C27	0.6(3)
P1–C25–C26–C27	−178.13(18)
C25–C26–C27–C28	−0.1(4)
C26–C27–C28–C29	−0.3(4)
C27–C28–C29–C30	0.0(4)
C28–C29–C30–C25	0.6(4)
C26–C25–C30–C29	−0.8(3)
P1–C25–C30–C29	177.97(19)
C37–P2–C31–C32	−7.3(2)
Cu2–P2–C31–C32	−122.31(19)
Cu3–P2–C31–C32	114.17(19)
C37–P2–C31–C36	172.90(17)
Cu2–P2–C31–C36	57.86(18)
Cu3–P2–C31–C36	−65.67(18)
C36–C31–C32–C33	1.7(4)
P2–C31–C32–C33	−178.1(2)
C31–C32–C33–C34	−0.3(4)
C32–C33–C34–C35	−1.3(5)
C33–C34–C35–C36	1.5(4)
C34–C35–C36–C31	0.0(4)
C32–C31–C36–C35	−1.6(3)
P2–C31–C36–C35	178.24(19)
C31–P2–C37–C42	85.1(2)
Cu2–P2–C37–C42	−166.84(17)
Cu3–P2–C37–C42	−40.9(2)
C31–P2–C37–C38	−96.3(2)
Cu2–P2–C37–C38	11.7(2)
Cu3–P2–C37–C38	137.69(18)
C42–C37–C38–C39	−1.4(4)
P2–C37–C38–C39	−180.0(2)
C37–C38–C39–C40	0.4(4)
C38–C39–C40–C41	0.5(5)
C39–C40–C41–C42	−0.3(5)
C38–C37–C42–C41	1.6(4)
P2–C37–C42–C41	−179.8(2)
C40–C41–C42–C37	−0.8(4)
C72–C67–C68–C69	−0.6(4)
C67–C68–C69–C70	0.1(4)
C68–C69–C70–C71	0.2(4)
C69–C70–C71–C72	0.1(4)
C68–C67–C72–C71	0.8(3)
C68–C67–C72–P3	177.95(18)
C70–C71–C72–C67	−0.6(3)
C70–C71–C72–P3	−177.78(17)
C1–P3–C72–C67	36.9(2)
Cu4–P3–C72–C67	146.96(17)
Cu3–P3–C72–C67	−93.40(19)
C1–P3–C72–C71	−146.10(18)
Cu4–P3–C72–C71	−36.03(19)
Cu3–P3–C72–C71	83.60(19)
C4_2–O1_2–C1_2–C2_2	24.8(4)
O1_2–C1_2–C2_2–C3_2	−37.1(4)
C1_2–C2_2–C3_2–C4_2	34.6(4)
C1_2–O1_2–C4_2–C3_2	−1.5(5)
C2_2–C3_2–C4_2–O1_2	−20.9(5)
C4_3–O1_3–C1_3–C2_3	11.2(6)
O1_3–C1_3–C2_3–C3_3	−25.5(5)
C1_3–C2_3–C3_3–C4_3	30.0(5)
C1_3–O1_3–C4_3–C3_3	8.5(5)
C2_3–C3_3–C4_3–O1_3	−23.6(5)

Figure S14



Molecular structure of **1** with thermal ellipsoids drawn at the 30% probability level. Hydrogen atoms and two non-coordinated THF molecules of solvation are omitted for clarity.