Supporting information.

Synthesis and Catalytic Applications of Stable Palladium Dioxygen Complexes

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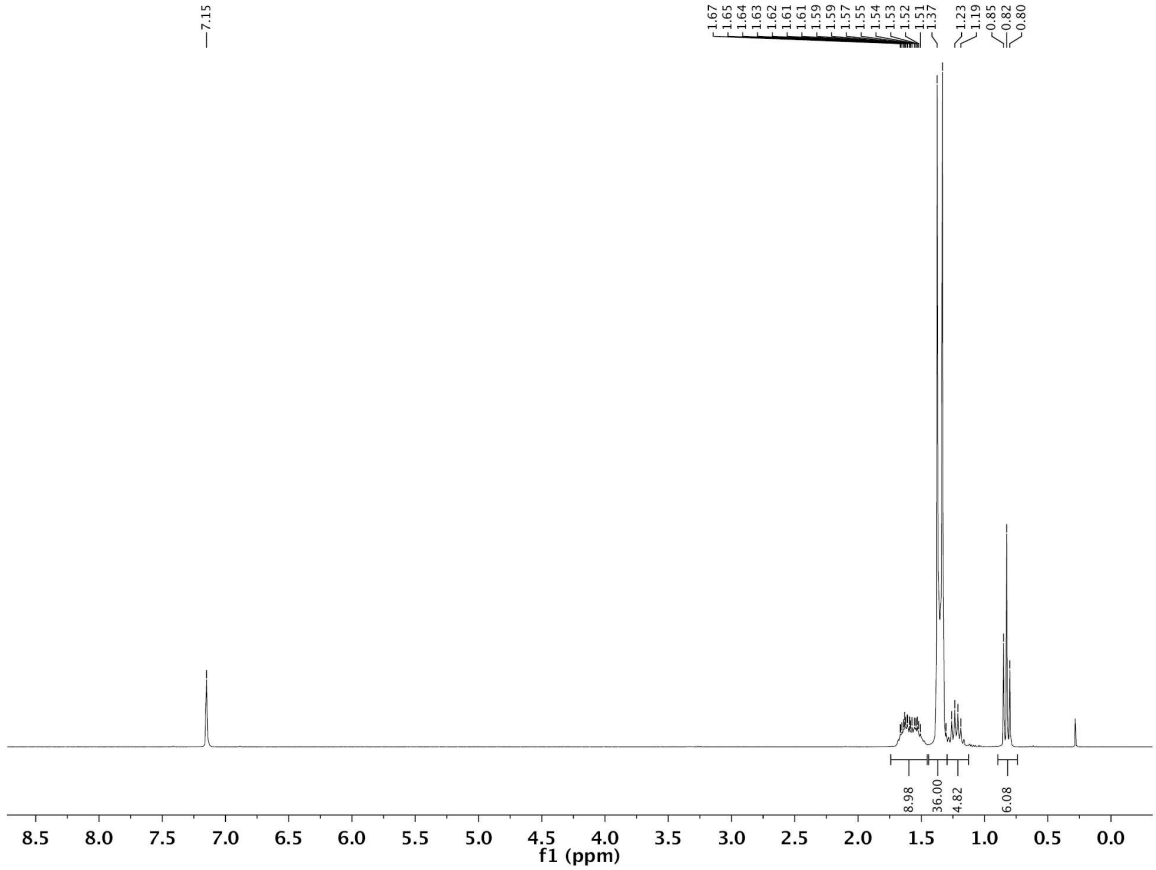
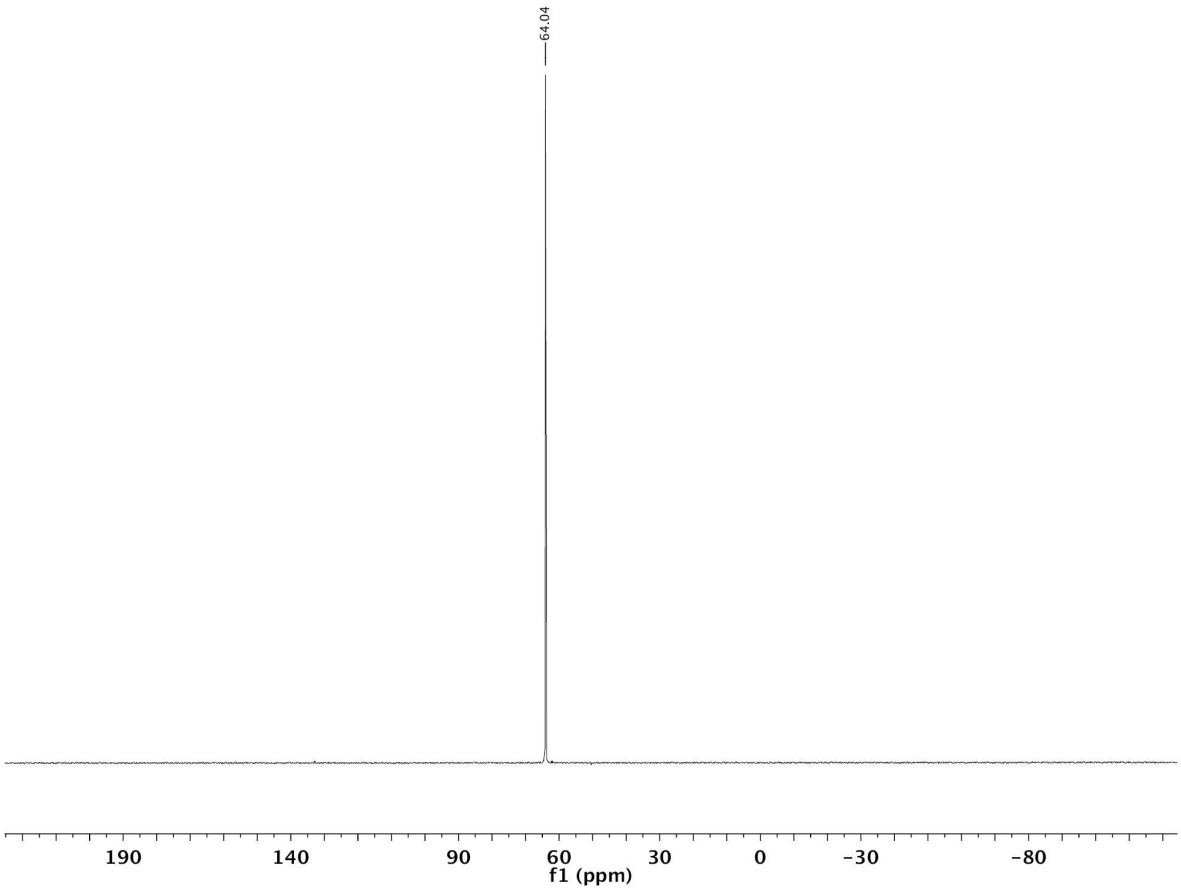
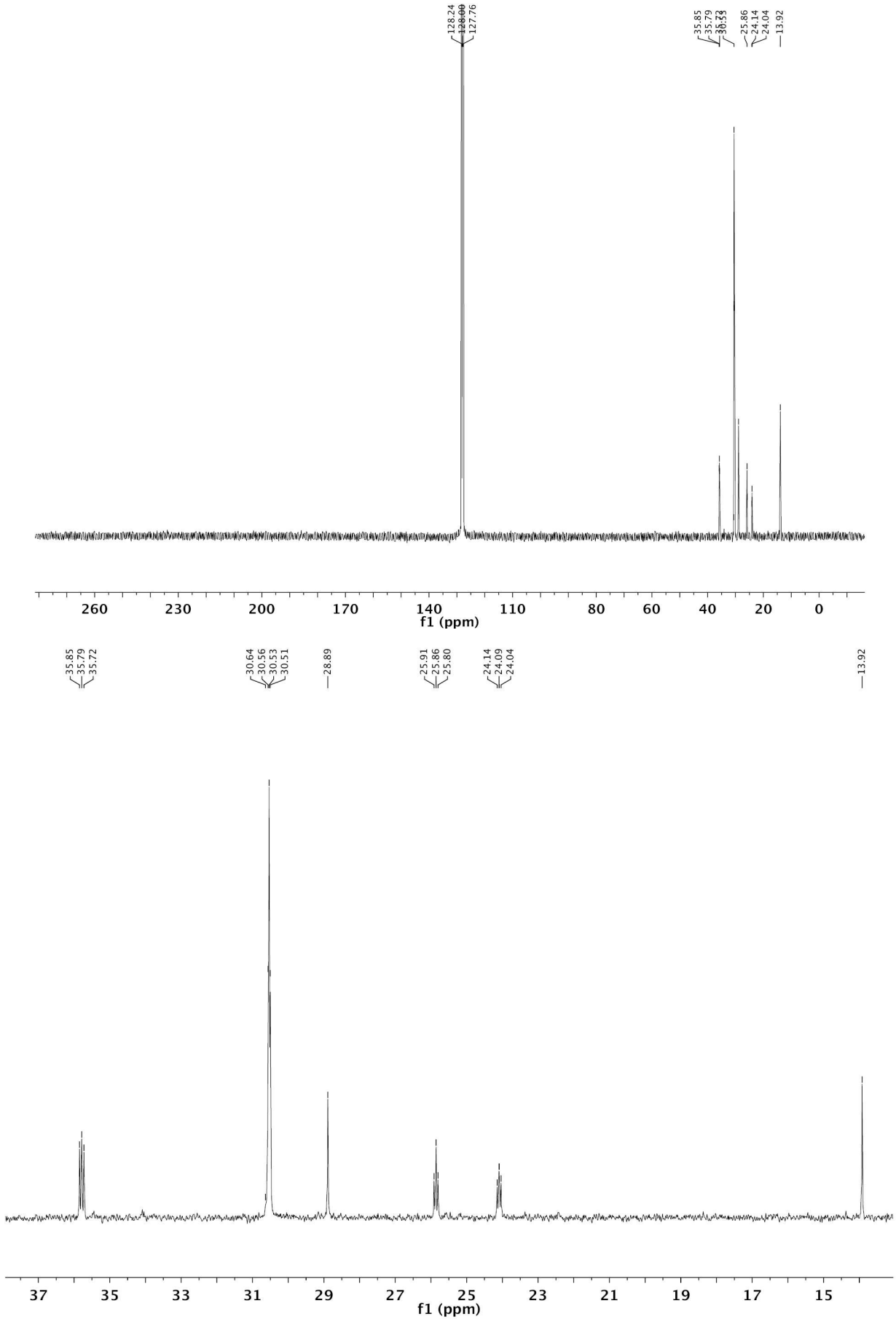
$Pd(O_2)\{(P(t\text{-}Bu)_2(n\text{-}Bu)\}_2$ (3). ^1H NMR spectrum (300MHz) in C_6D_6.



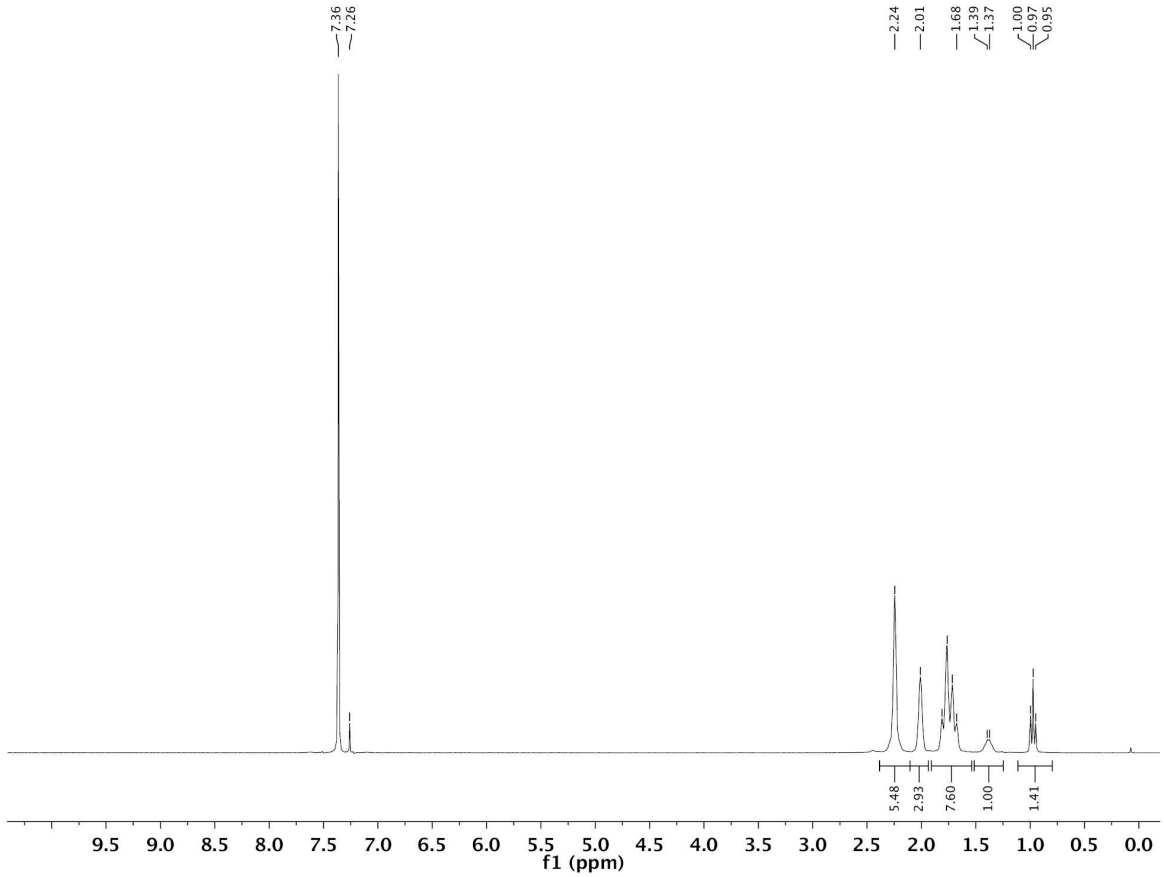
$Pd(O_2)\{(P(t\text{-}Bu)_2(n\text{-}Bu)\}_2$ (3). $^{31}P\{^1H\}$ NMR spectrum (121MHz) in C_6D_6.



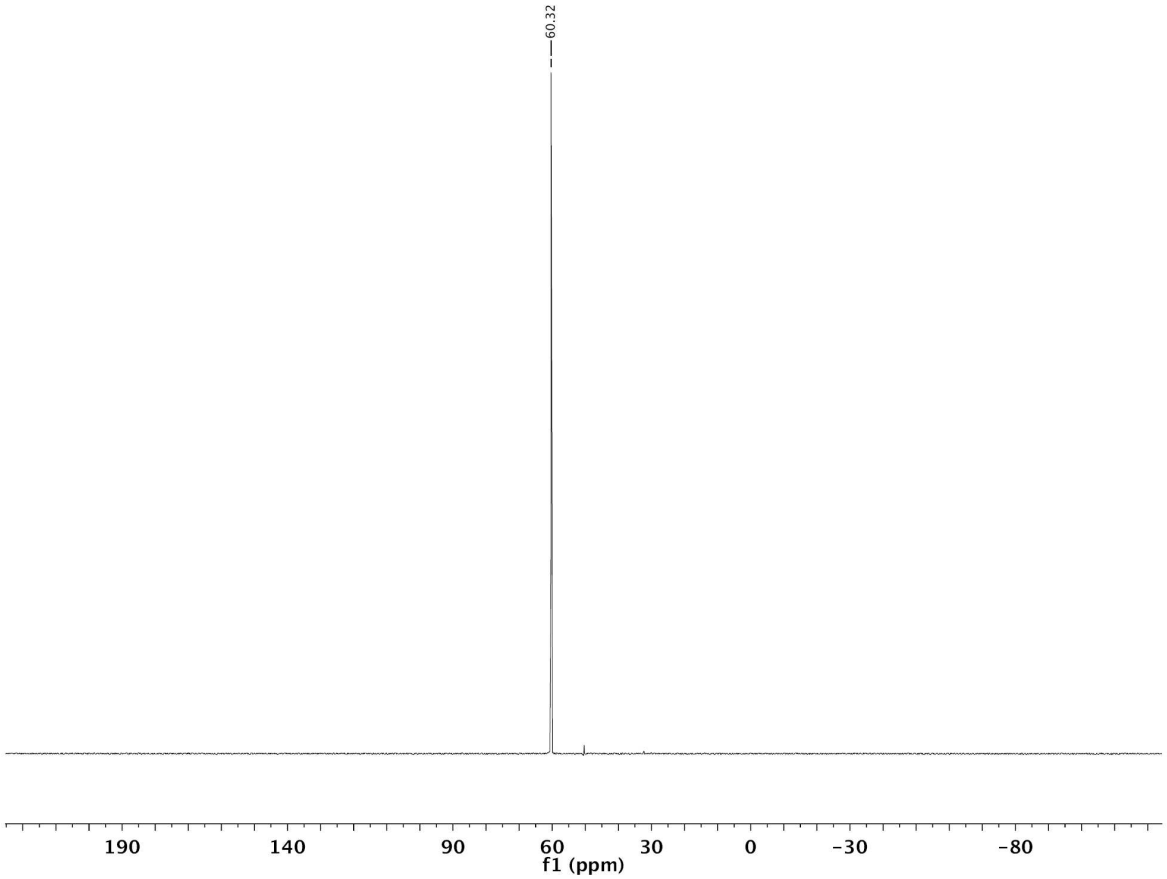
$Pd(O_2)\{(P(t\text{-}Bu)_2(n\text{-}Bu)\}_2$ (3). $^{13}C\{^1H\}$ NMR spectrum (100 MHz) in C_6D_6.



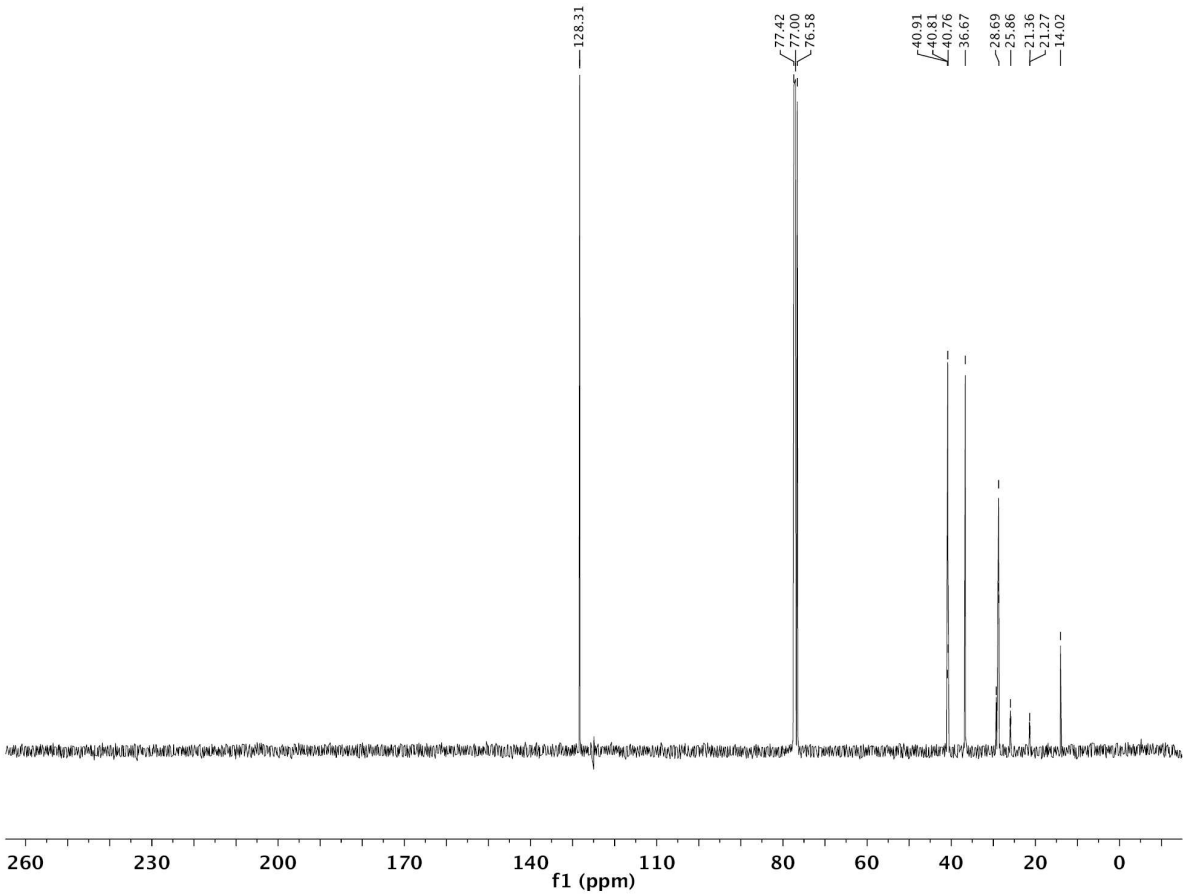
$Pd(O_2)\{(P(1\text{-}Ad)_2(n\text{-}Bu)\}_2 \cdot C_6H_6$ (4). ^1H NMR spectrum (300MHz) in $CDCl_3$.

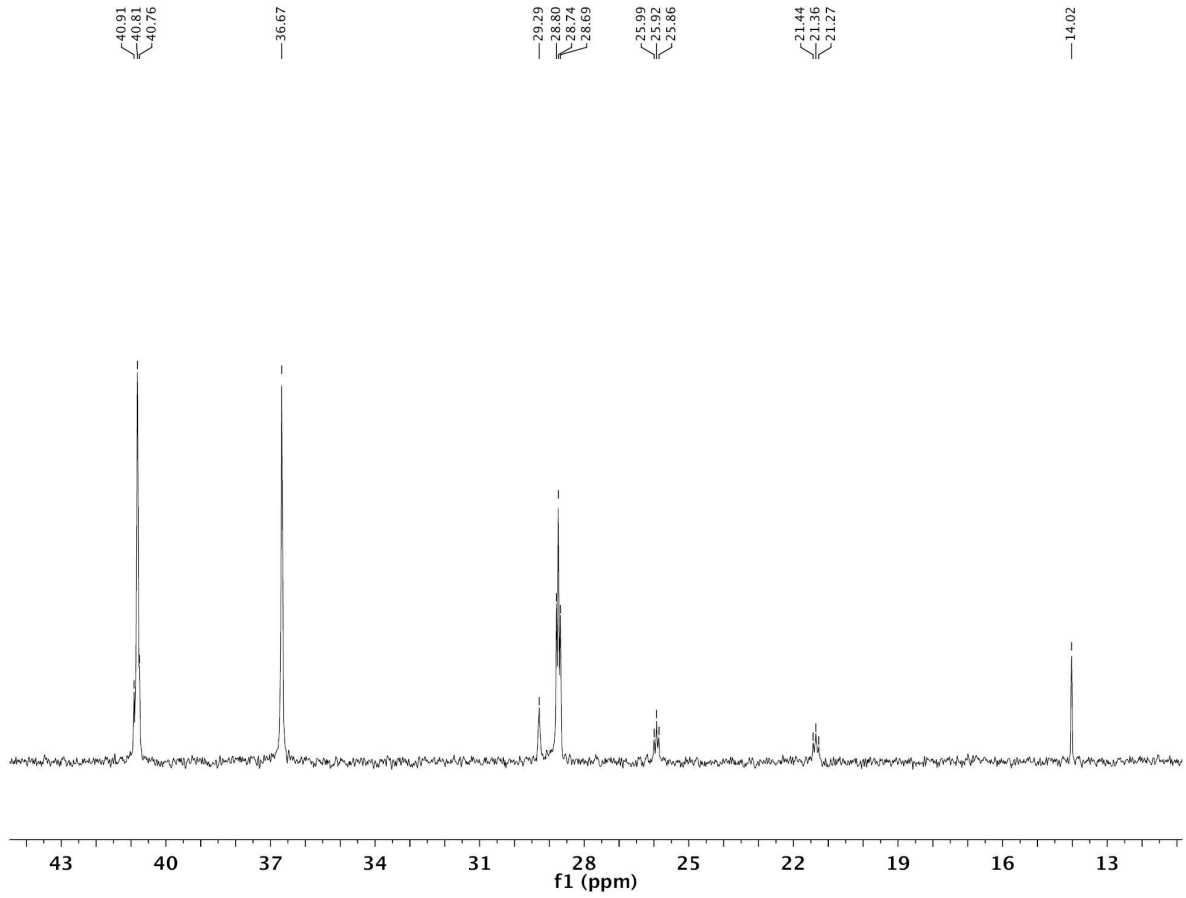


$Pd(O_2)\{(P(1\text{-}Ad)_2(n\text{-}Bu)\}_2 \cdot C_6H_6$ (4). $^{31}P\{^1H\}$ NMR spectrum (121MHz) in $CDCl_3$.



$Pd(O_2)\{(P(1\text{-}Ad)_2(n\text{-}Bu)\}_2 \cdot C_6H_6$ (4). $^{13}C\{^1H\}$ NMR spectrum (75 MHz) in $CDCl_3$.





Reduction of **4** with hydrogen in C_6D_6 (5 bar, 40º C, 16h).

^{1}H NMR spectrum (300MHz) of the reaction mixture.