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General, Industrial and Ecological Chemistry **Supplementary Material**

SYNTHESIS OF ALIPHATIC SYMMETRIC DIPHOSPHONIUM SALTS AND BACTERICIDAL ACTIVITY OF SELECTED PRODUCTS

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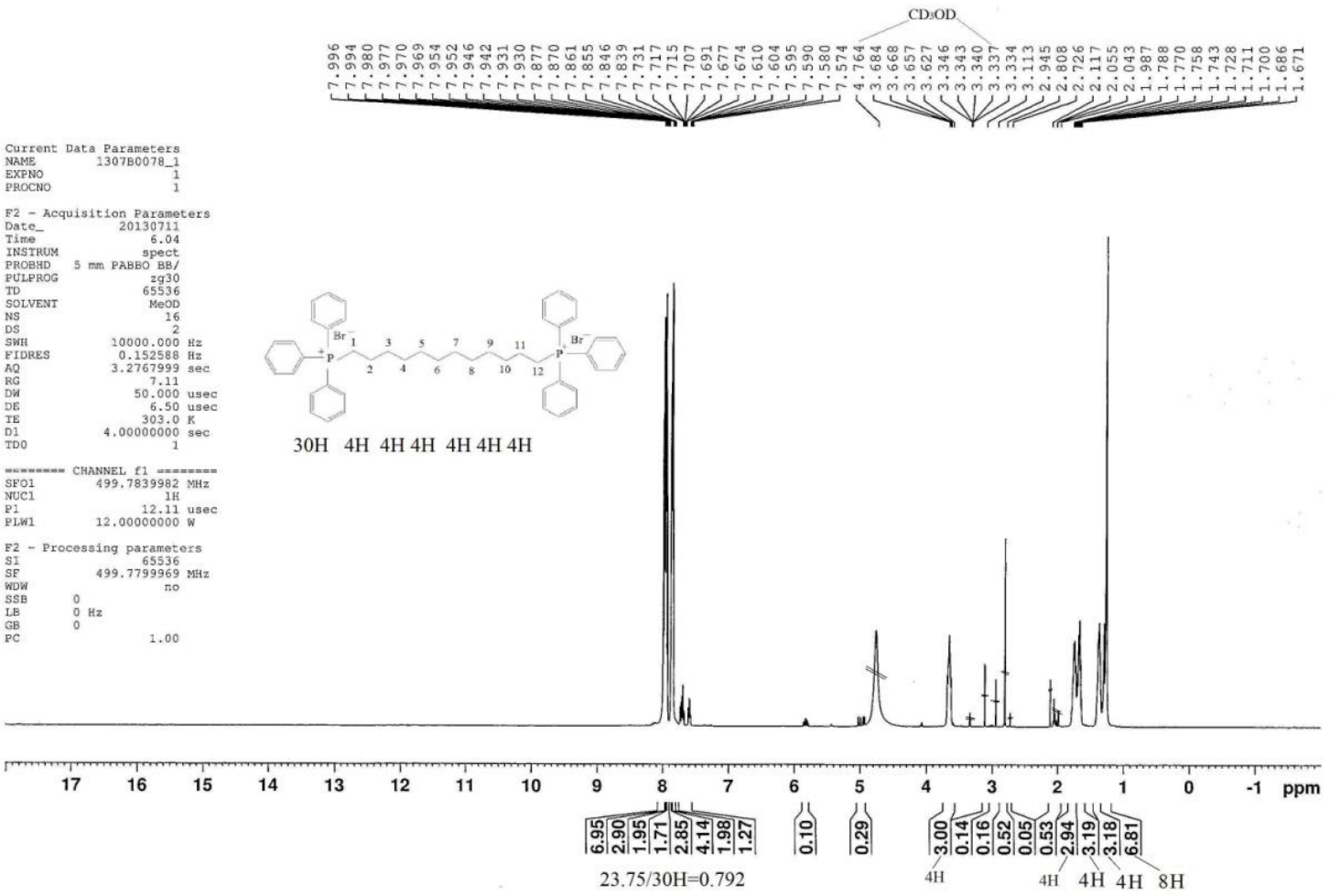
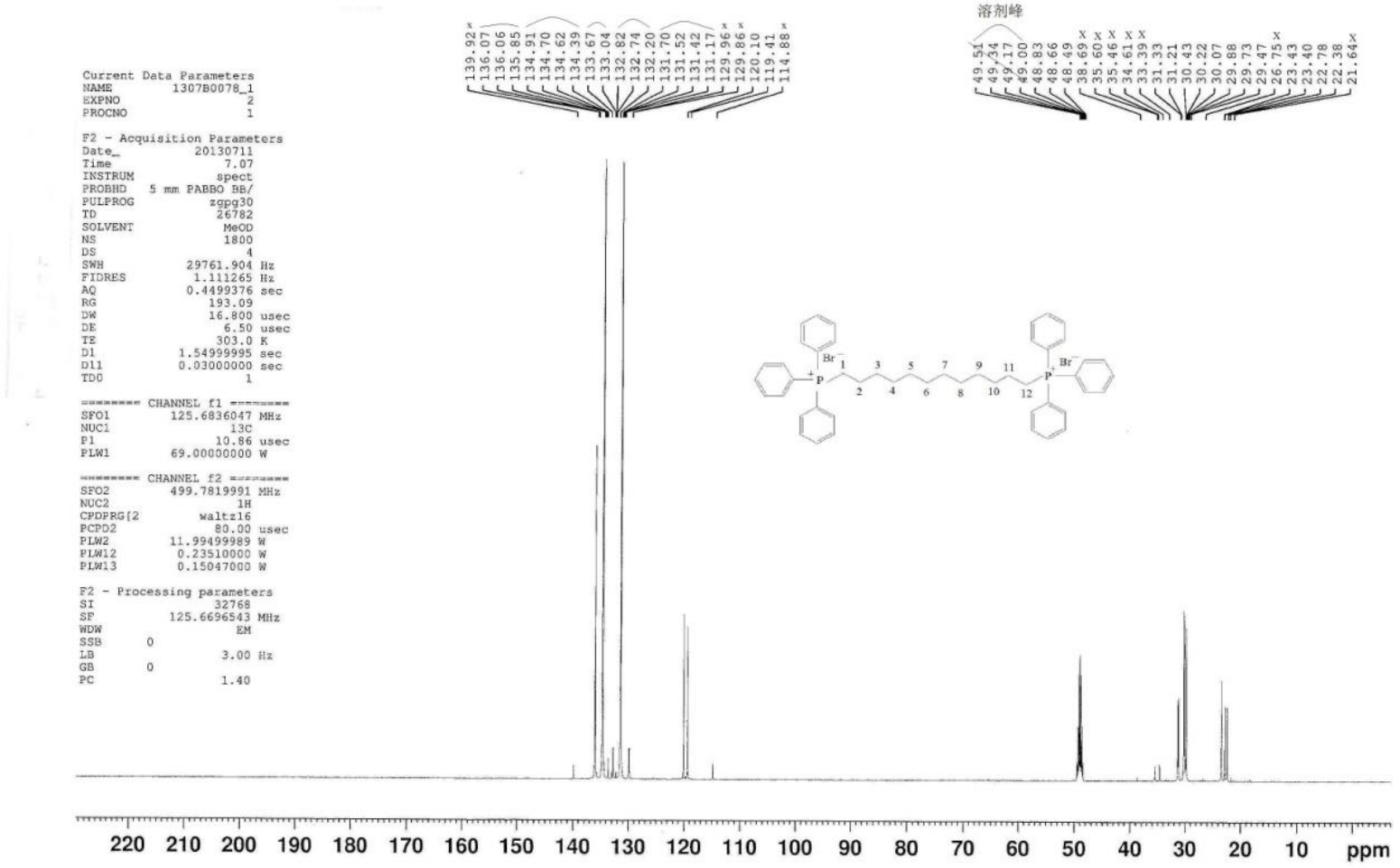
Contents: NMR spectral data and Infrared spectral data

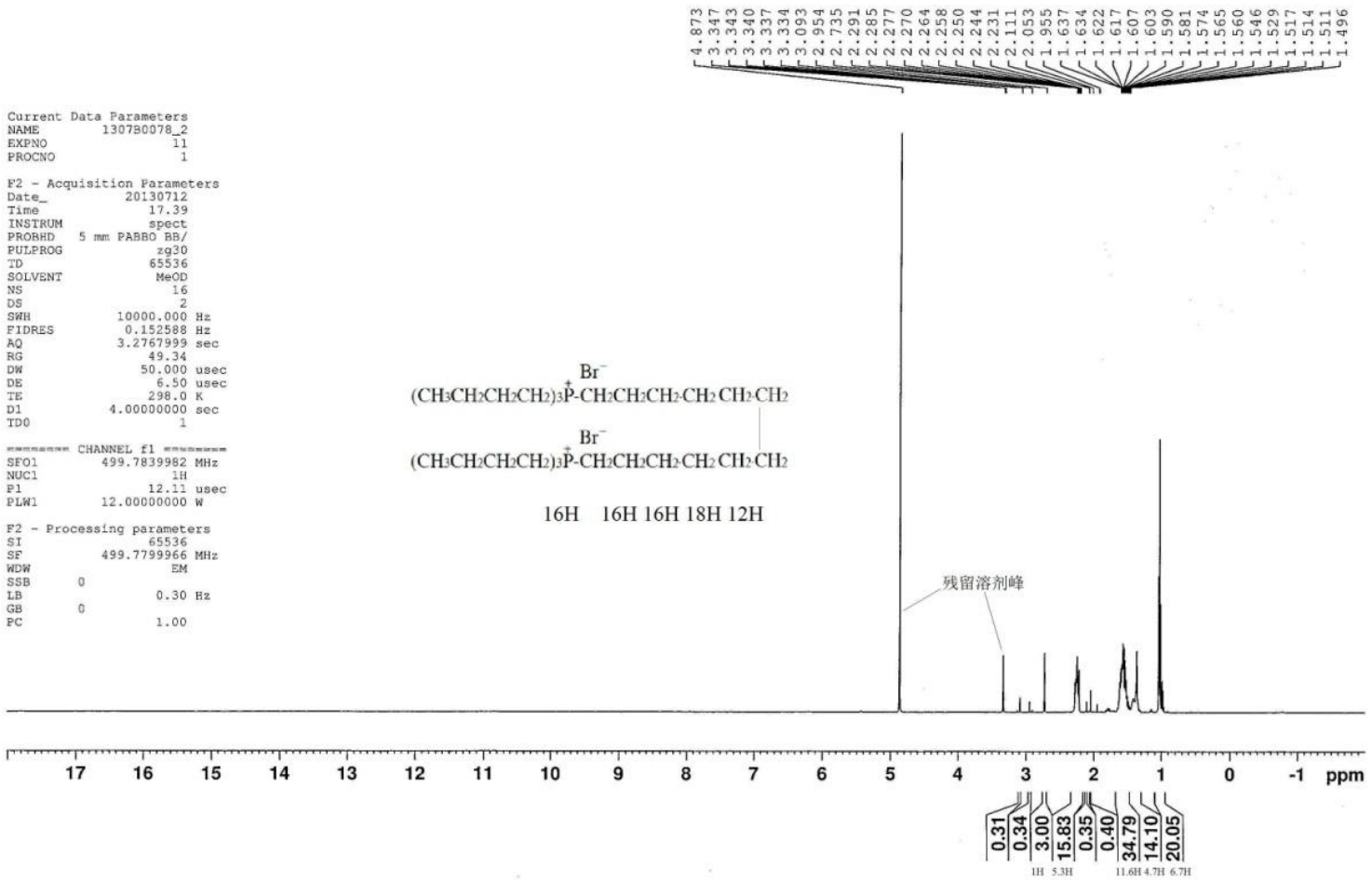
1,12-di (triphenyl phosphonium bromide) dodecane ($DTPPD_O$) — ^{1}HNMR



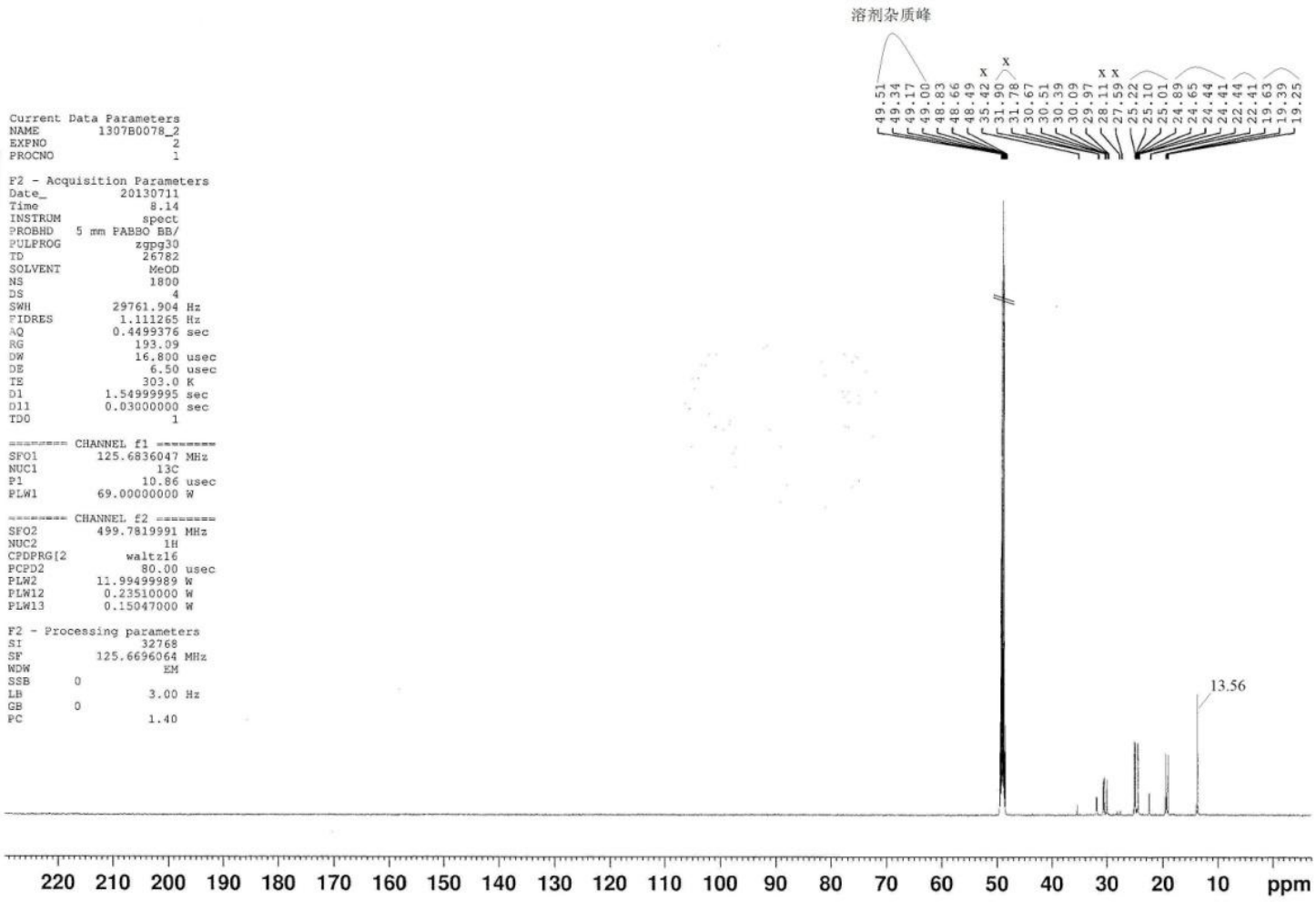
1,12-di (triphenyl phosphonium bromide) dodecane ($DTPPD_O$) —$^{13}C\{^1H\}$NMR



1,12-di (tributyl phosphonium bromide) dodecane($DTBPD_O$) — ^{1}HNMR



1,12-di (tributyl phosphonium bromide) dodecane($DTBPD_O$) —$^{13}C\{^1H\}$NMR

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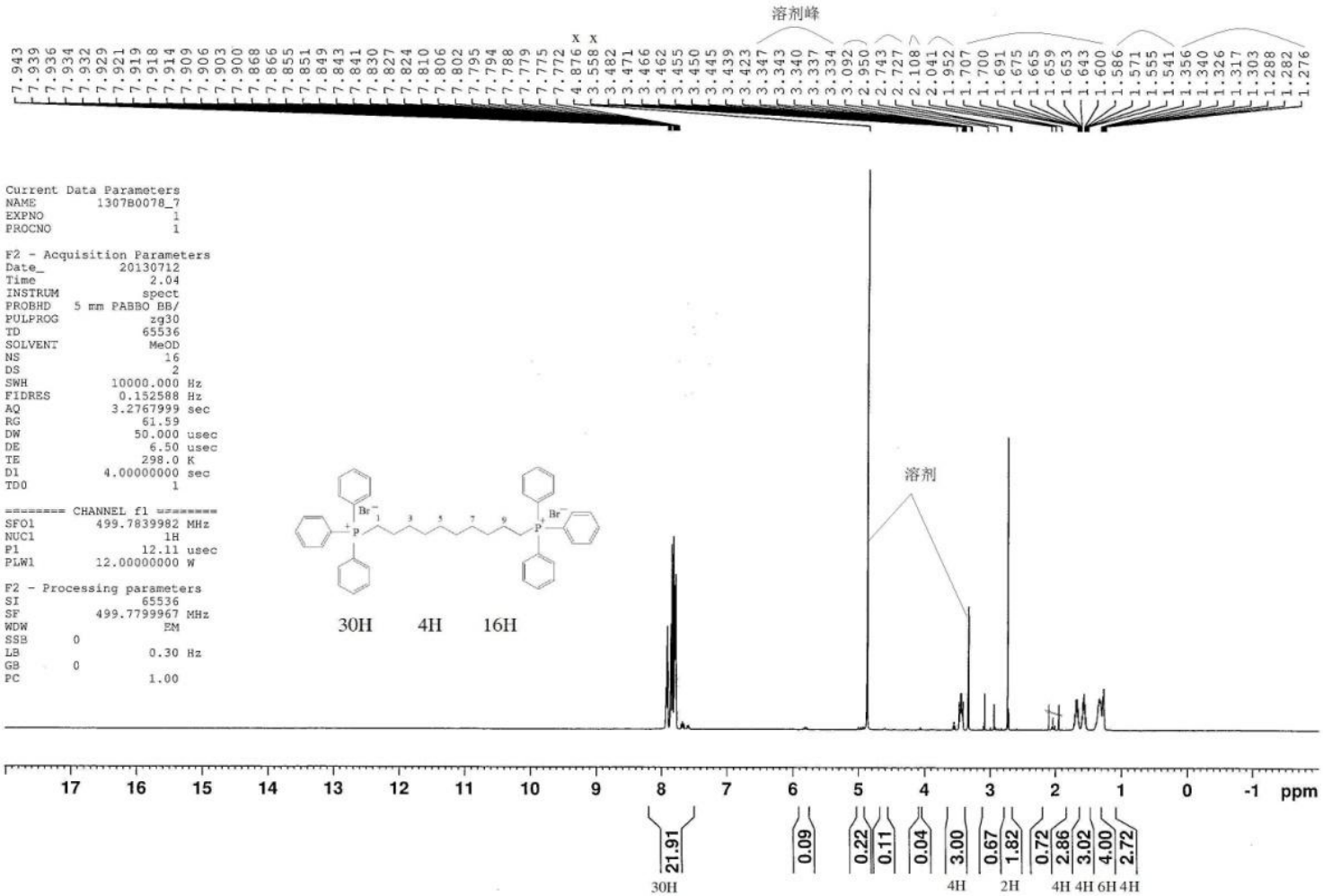

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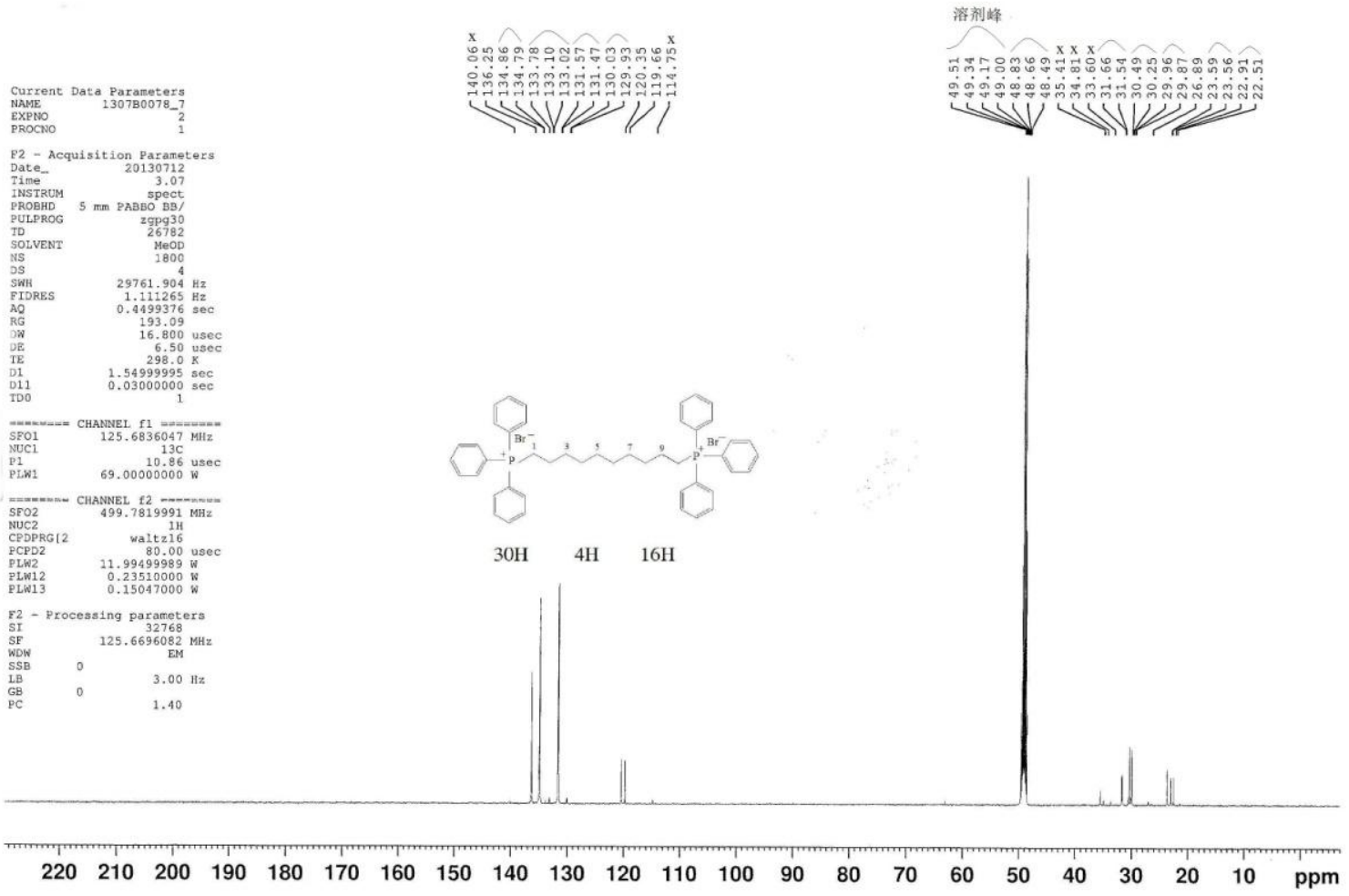

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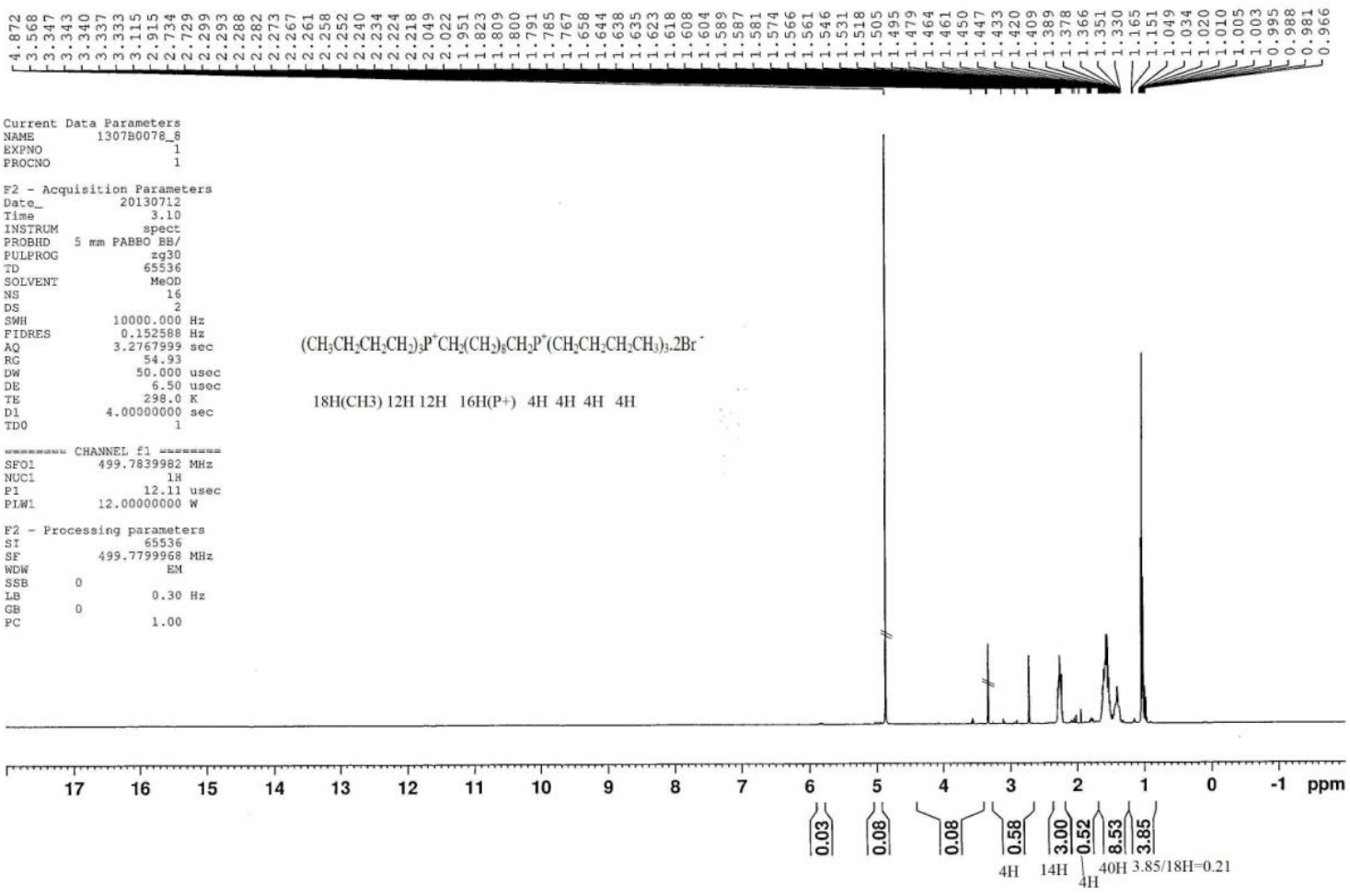

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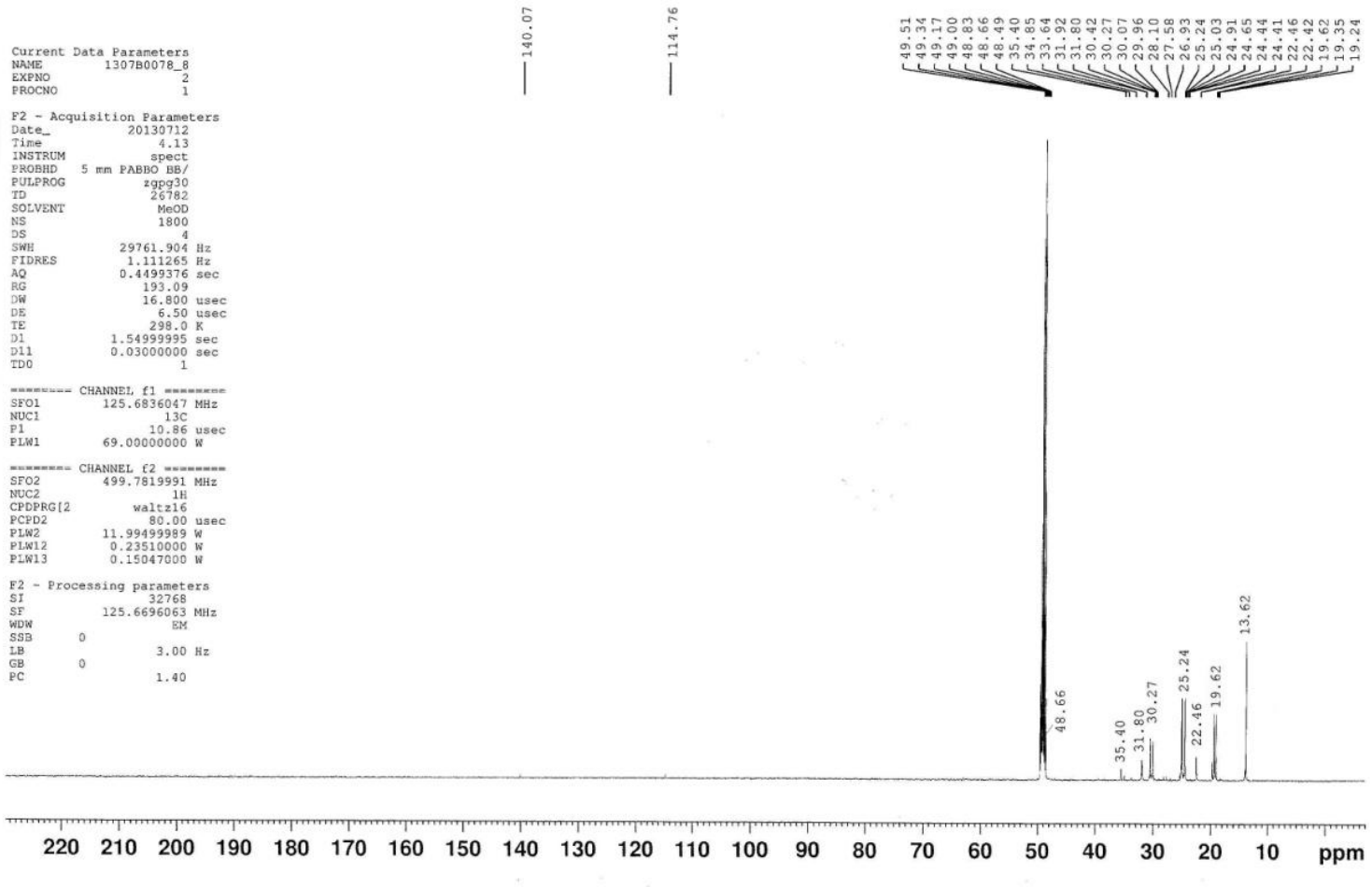

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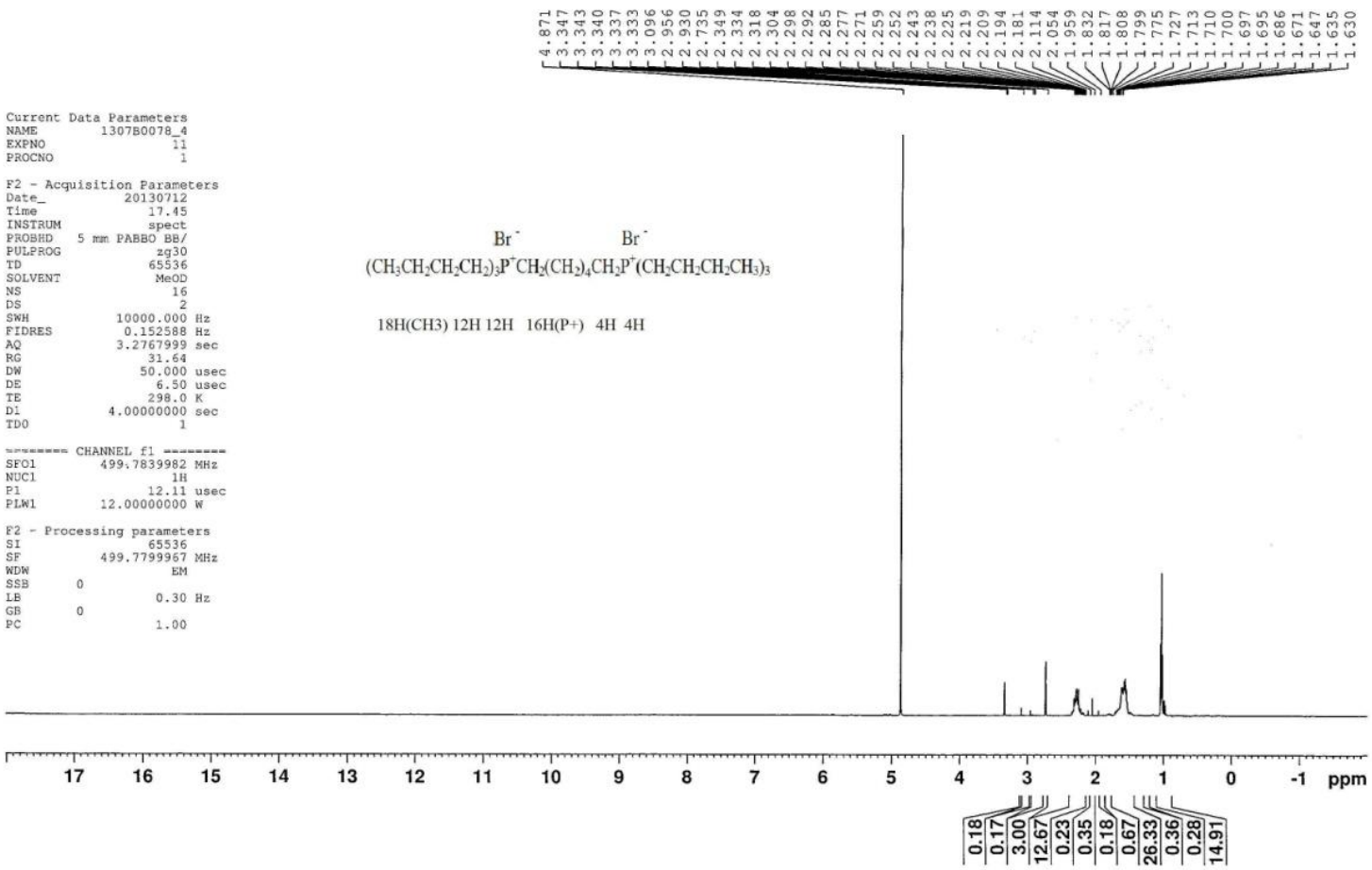

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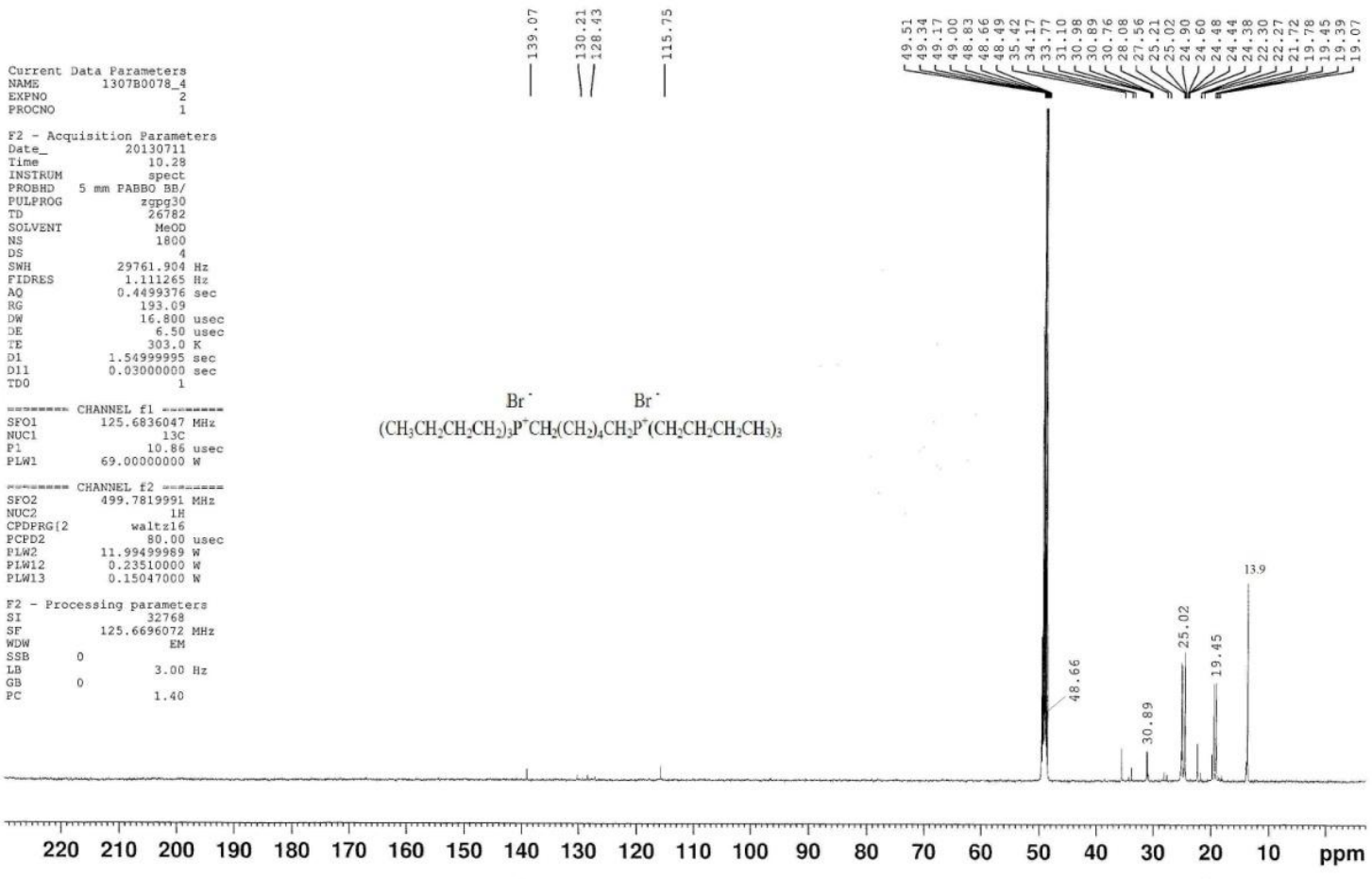

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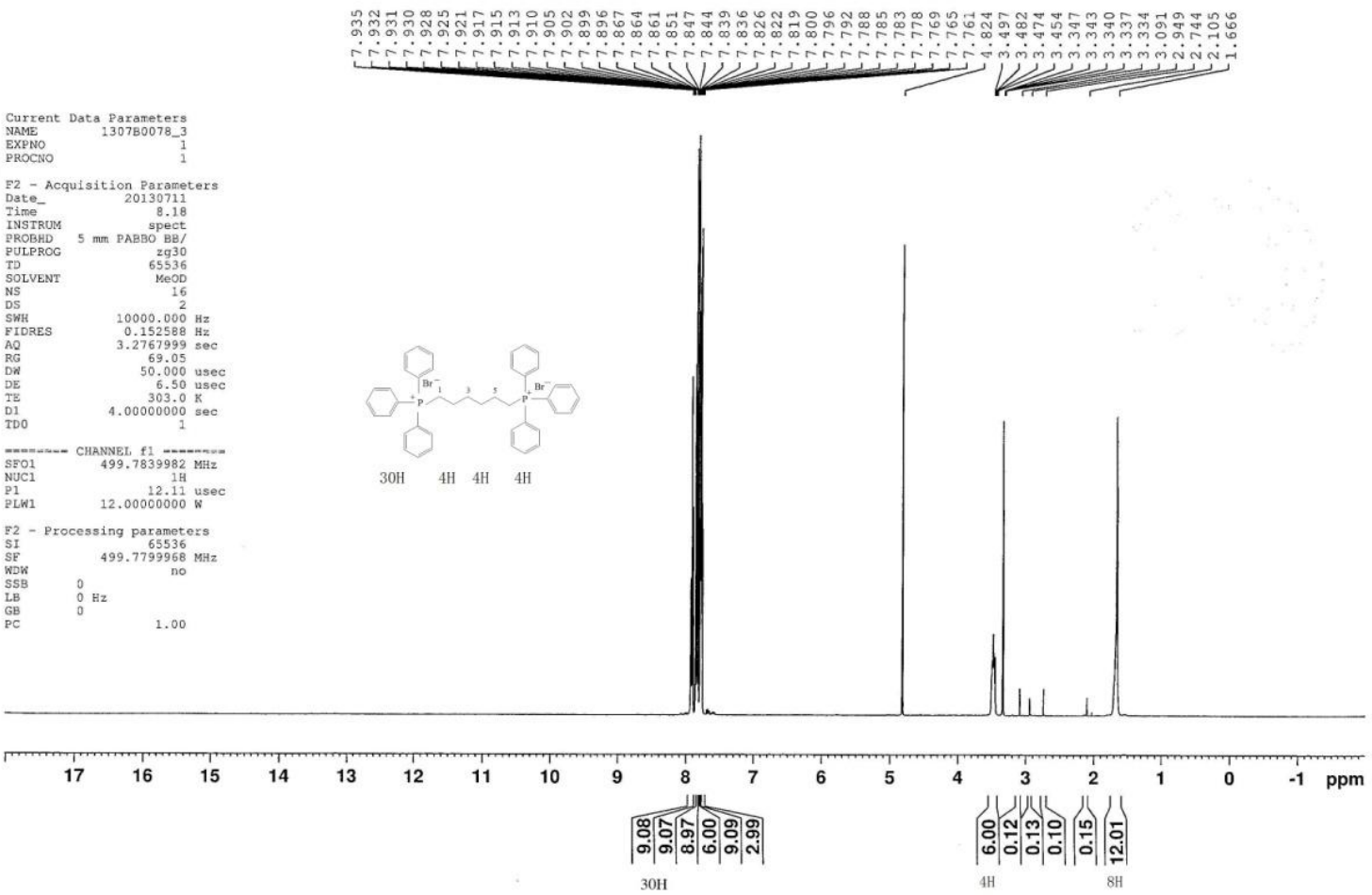

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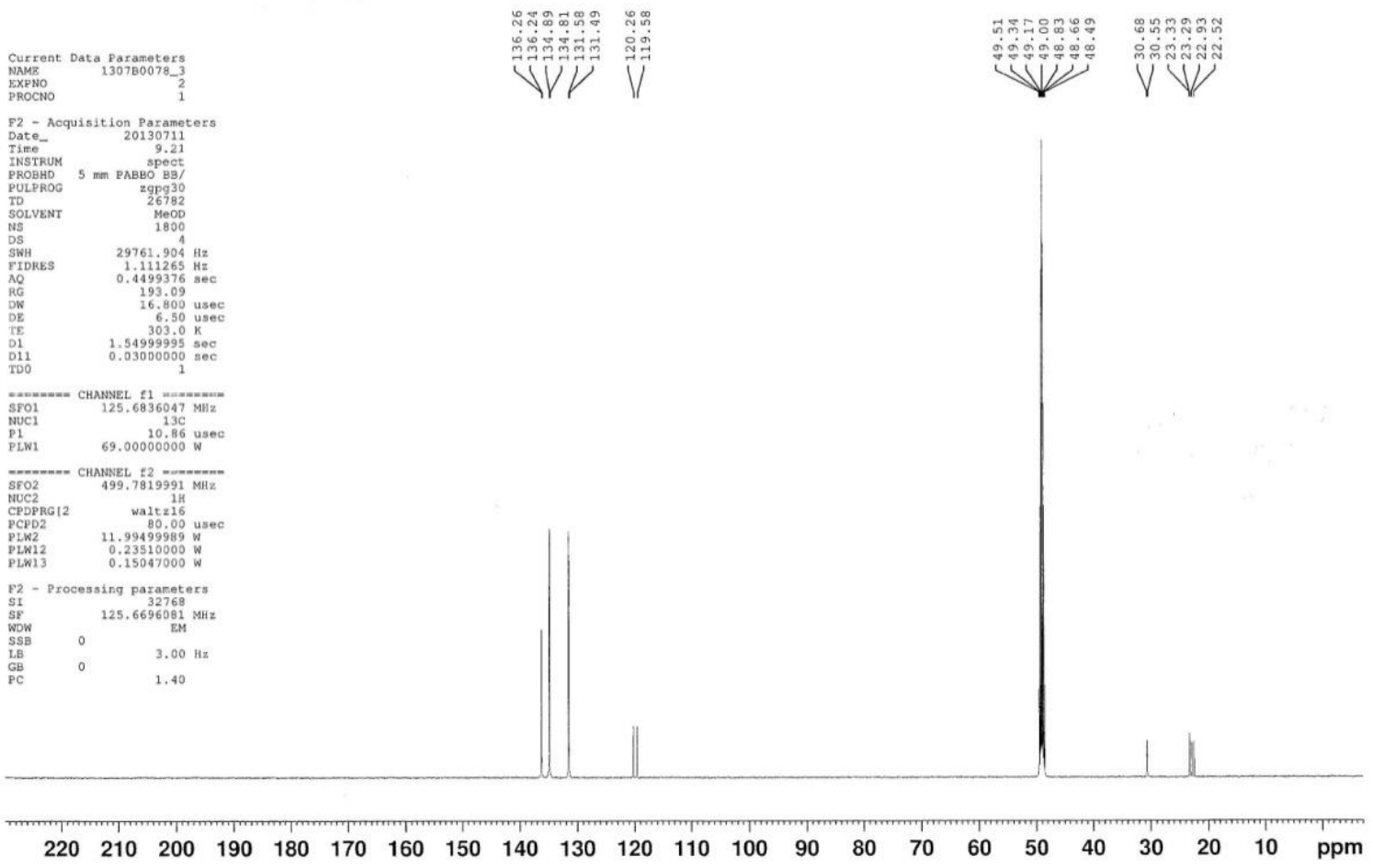


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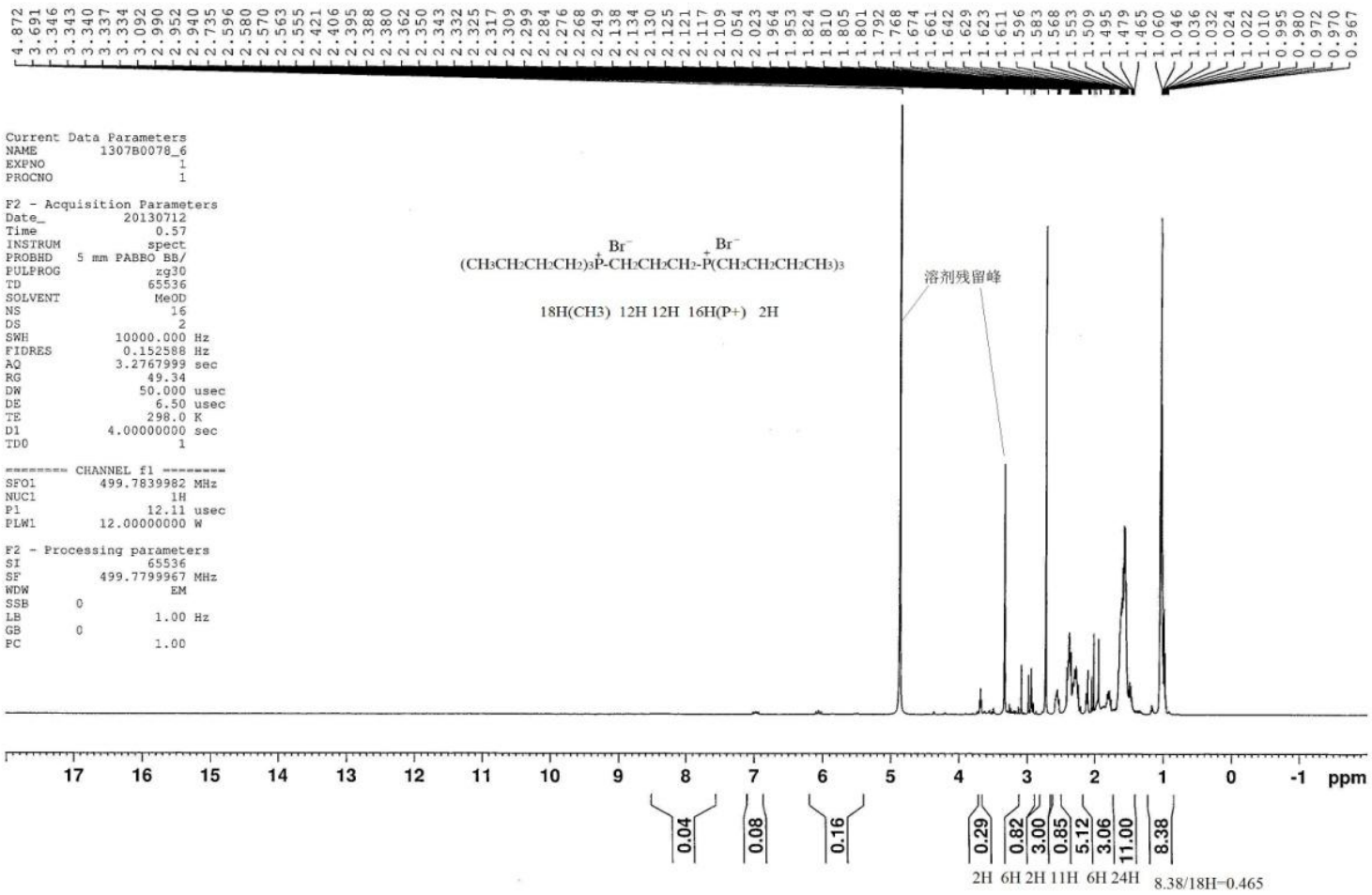

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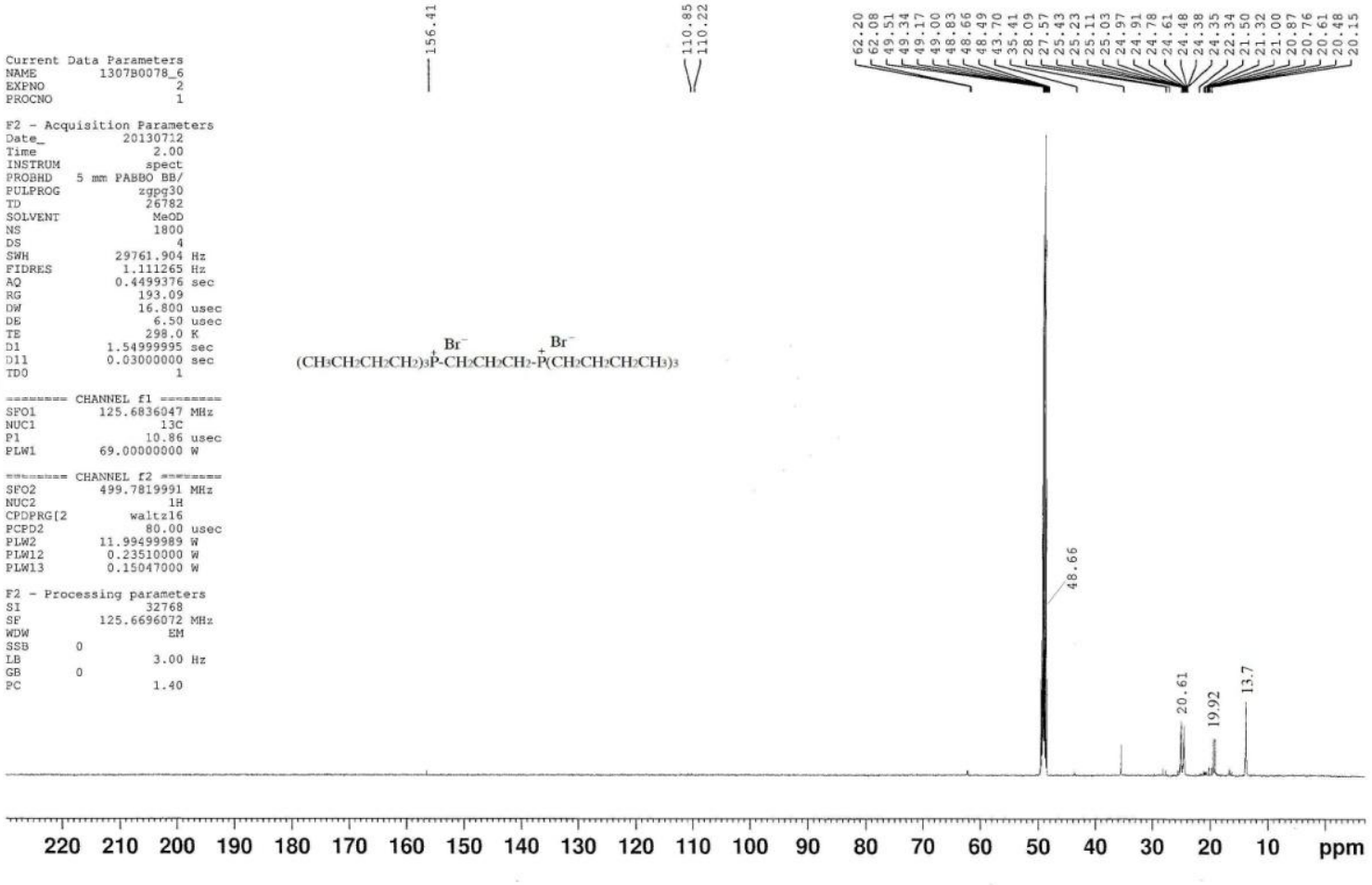
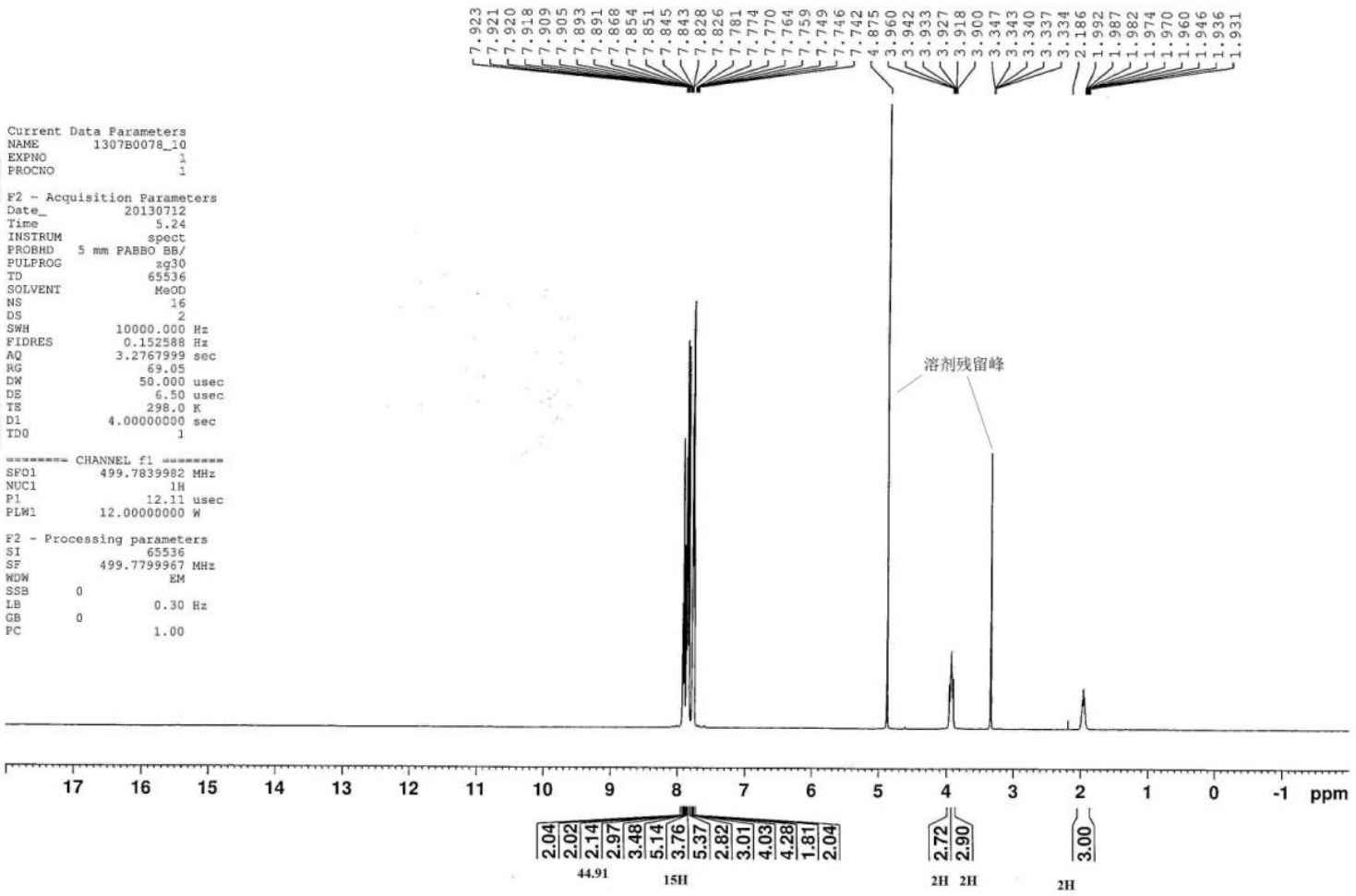
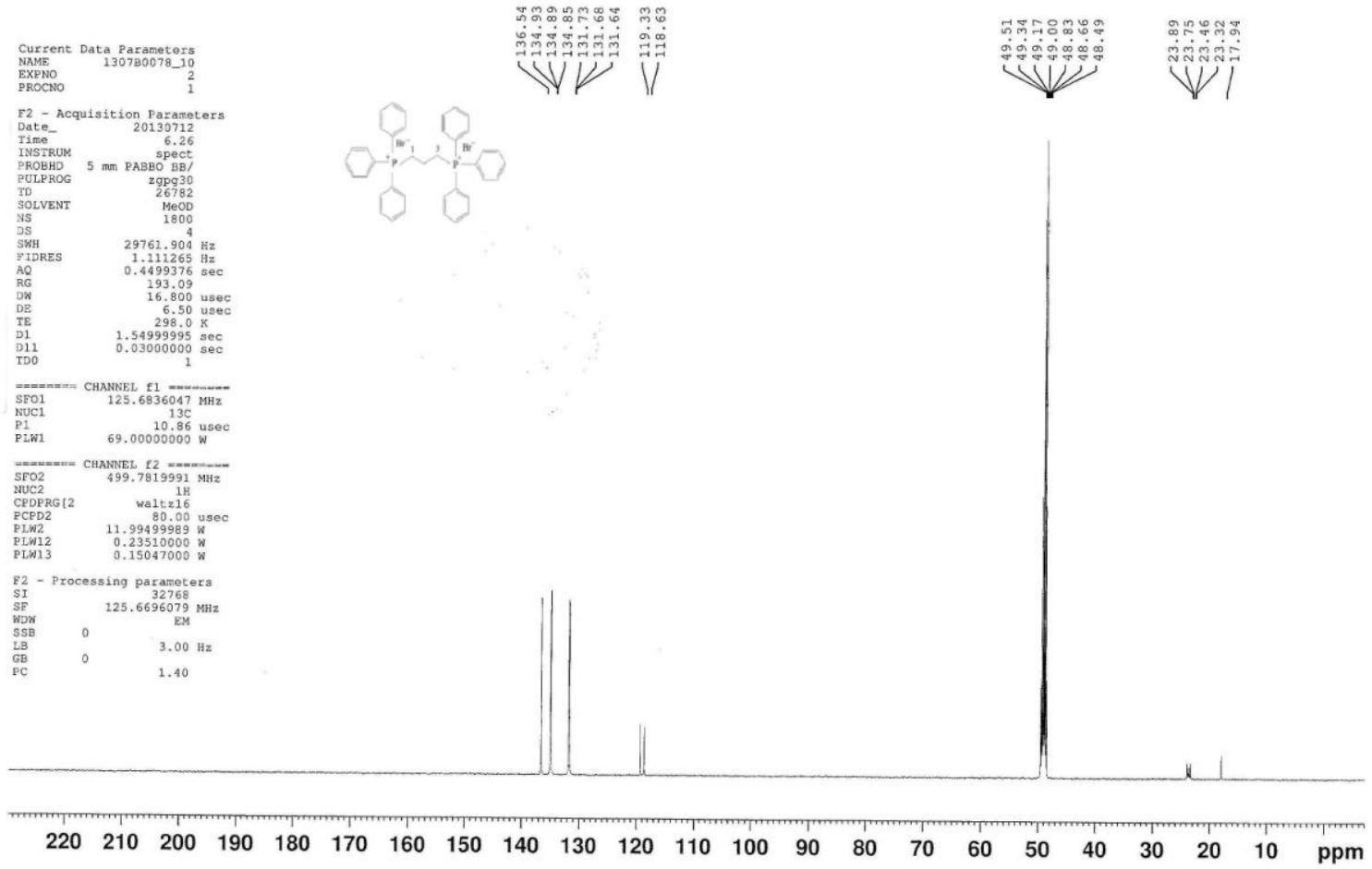


1,3-di (triphenyl phosphonium bromide) propane(DTPPP) — ^{1}HNMR



1,3-di (triphenyl phosphonium bromide) propane(DTPPP) —$^{13}C\{^{1}H\}$NMR

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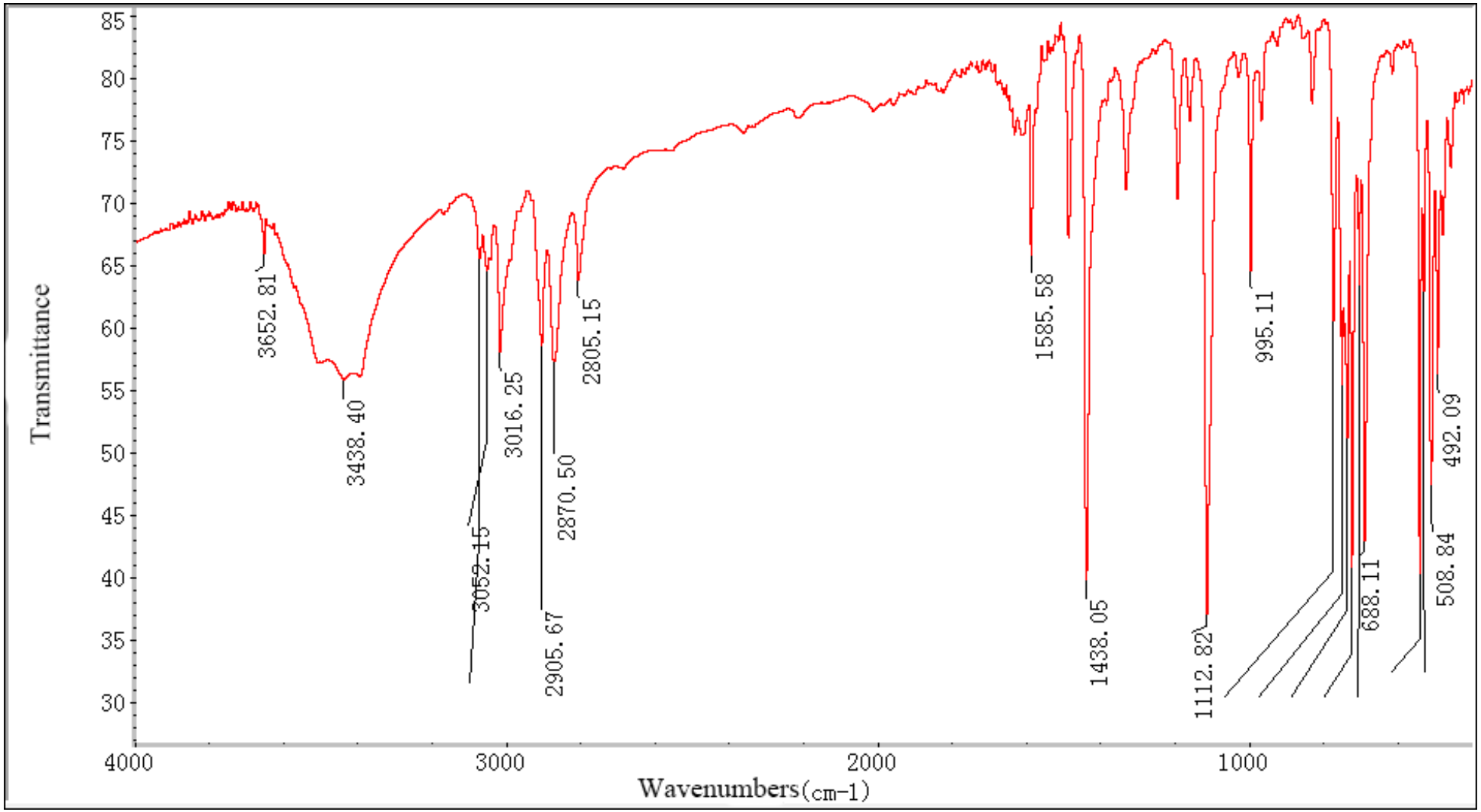
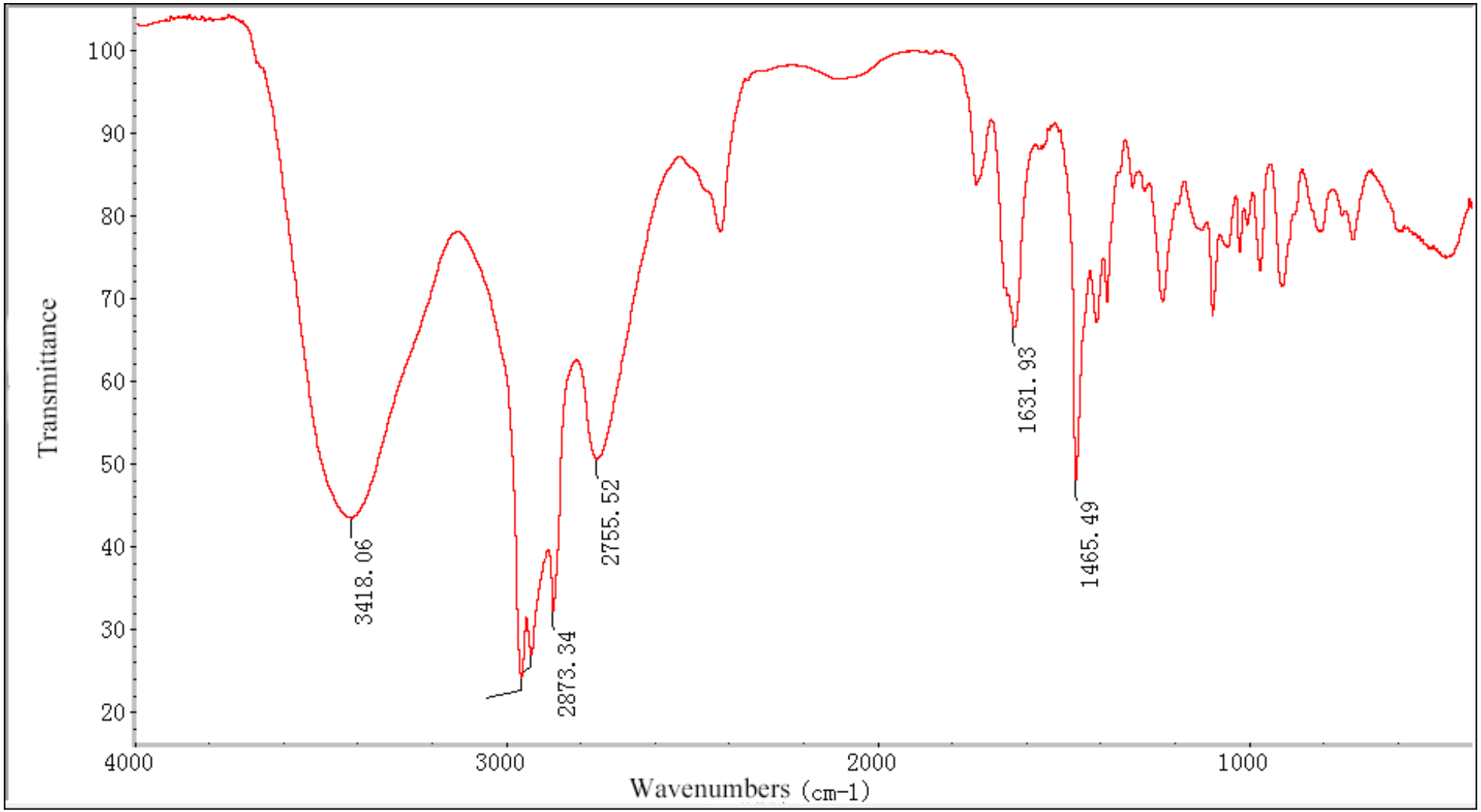
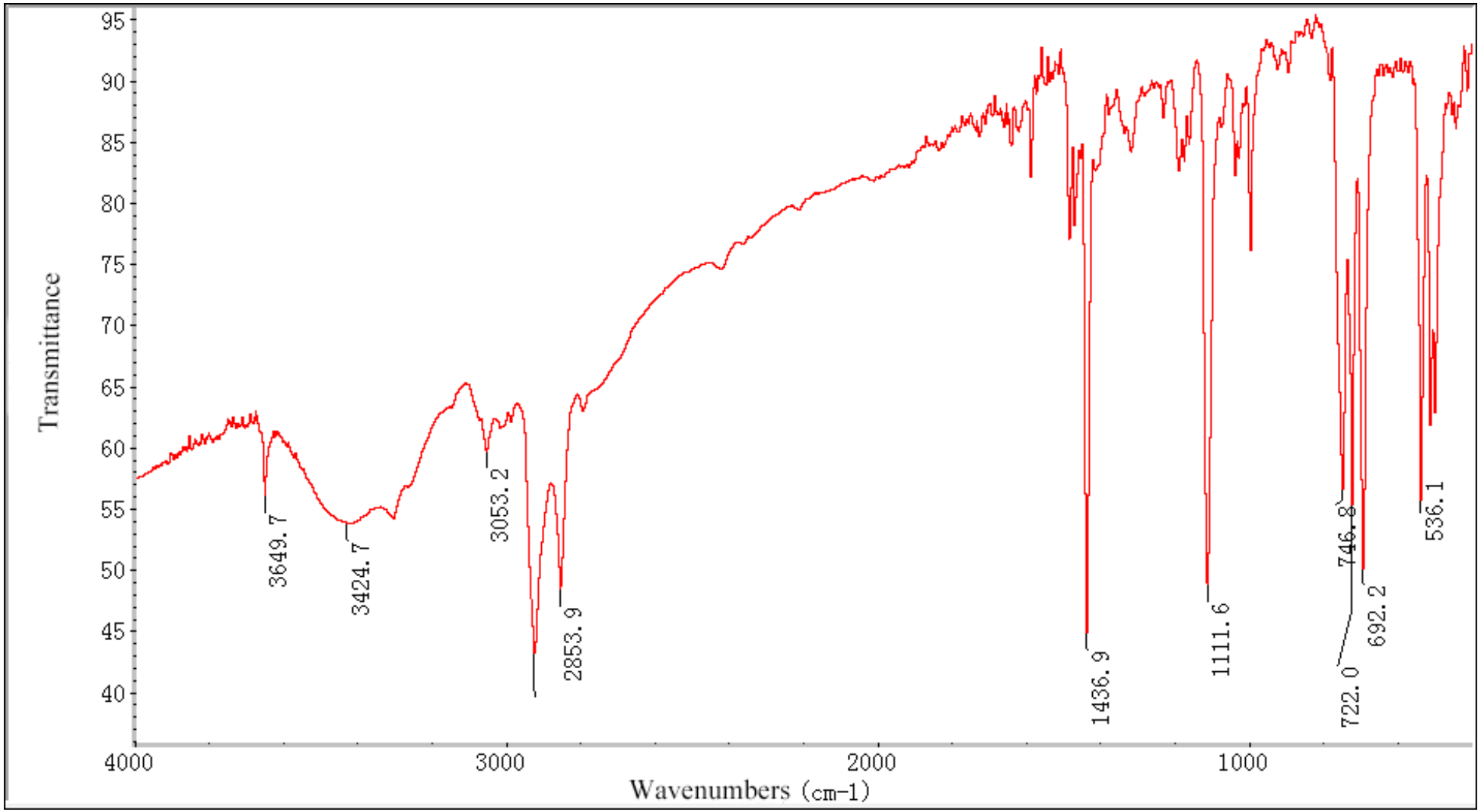
Infrared spectra for 1,3-di (triphenyl phosphonium bromide) propane



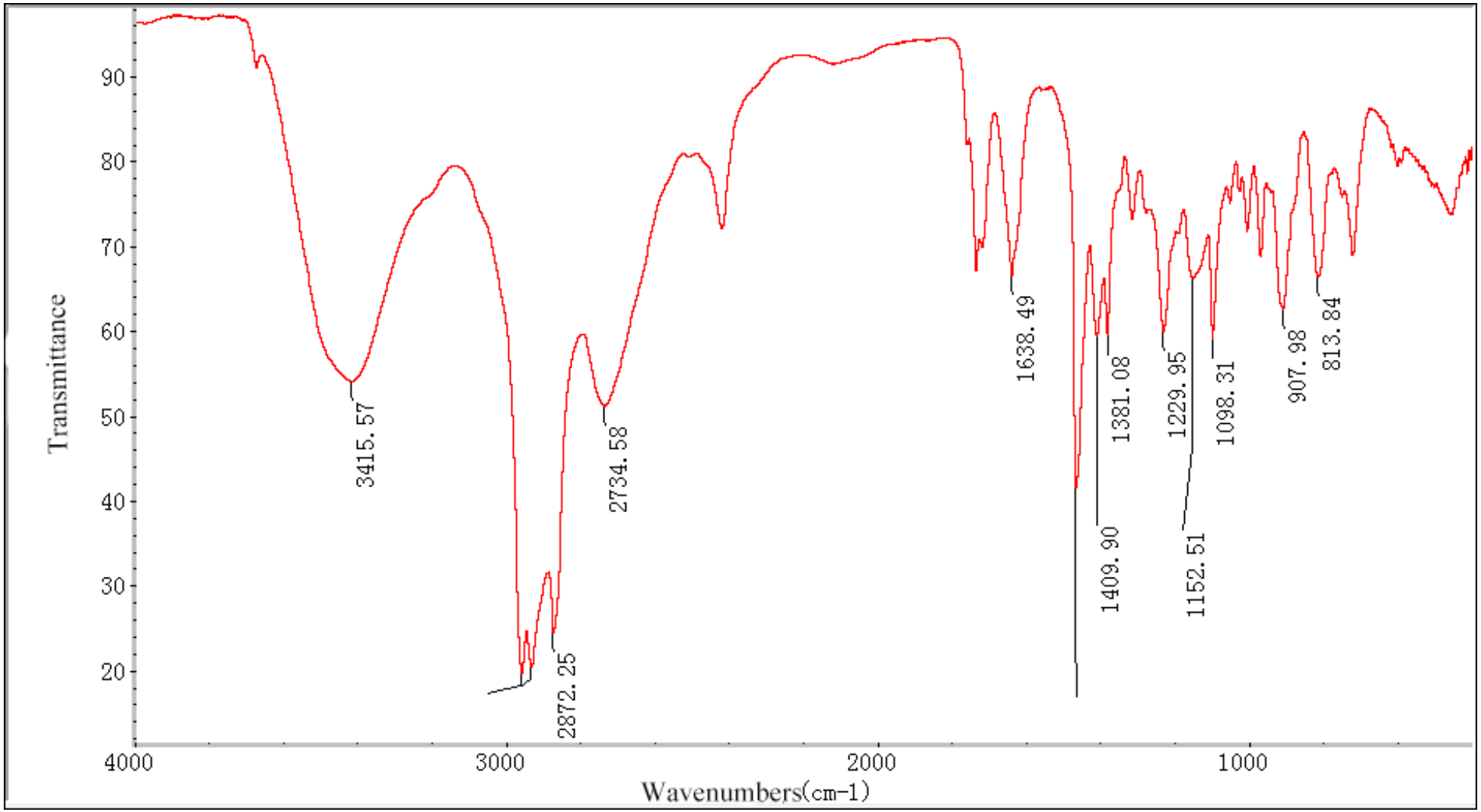
Infrared spectra for 1,3-di (tributyl phosphonium bromide) propane



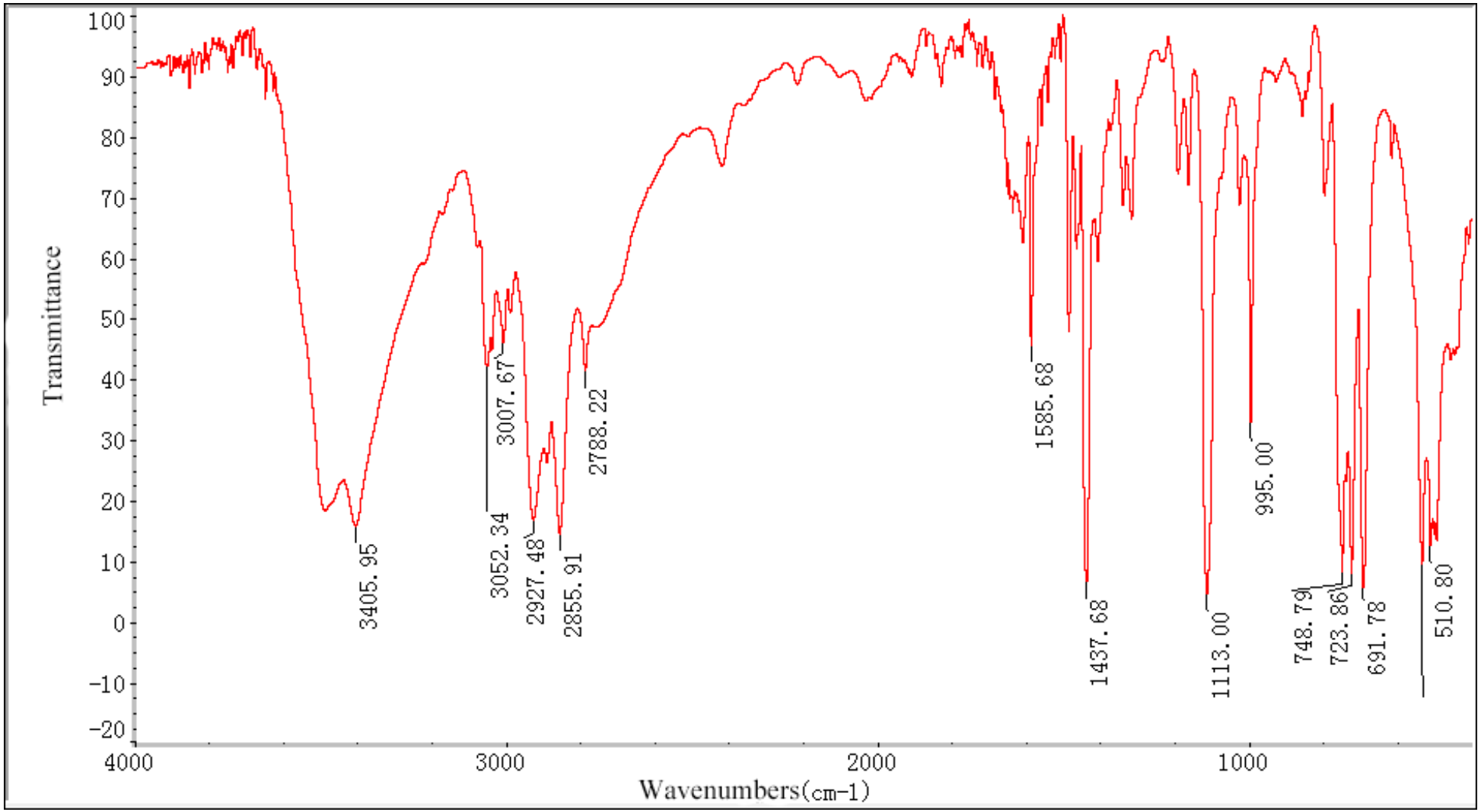
Infrared spectra for 1,6-di (triphenyl phosphonium bromide) hexane



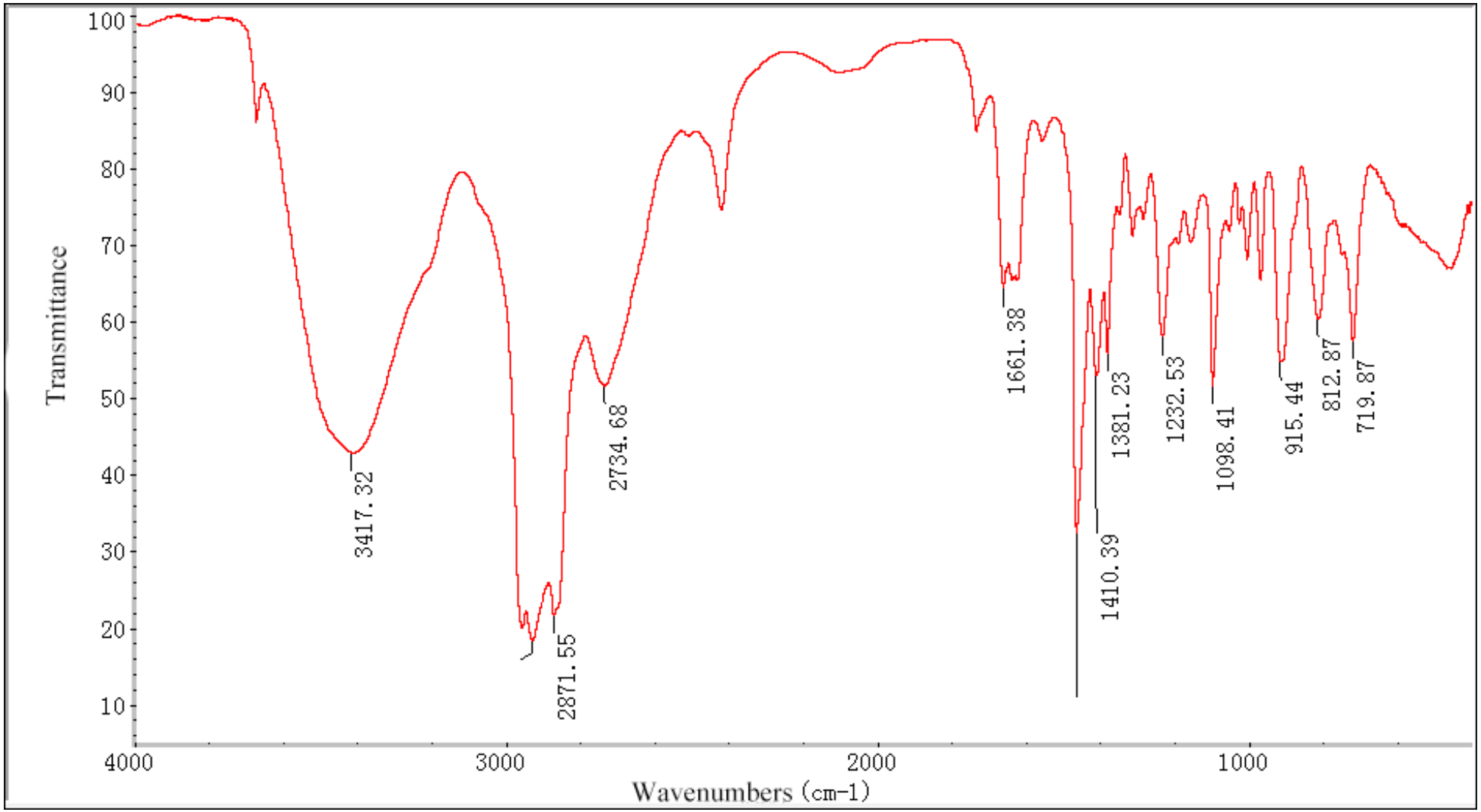
Infrared spectra for 1,6-di (tributyl phosphonium bromide) hexane



Infrared spectra for 1,10-di (triphenyl phosphonium bromide) decane



Infrared spectra for 1,10-di (tributyl phosphonium bromide) decane



Infrared spectrum for 1,12-di (triphenyl phosphonium bromide) dodecane

Infrared spectrum for 1,12-di (tributyl phosphonium bromide) dodecane