

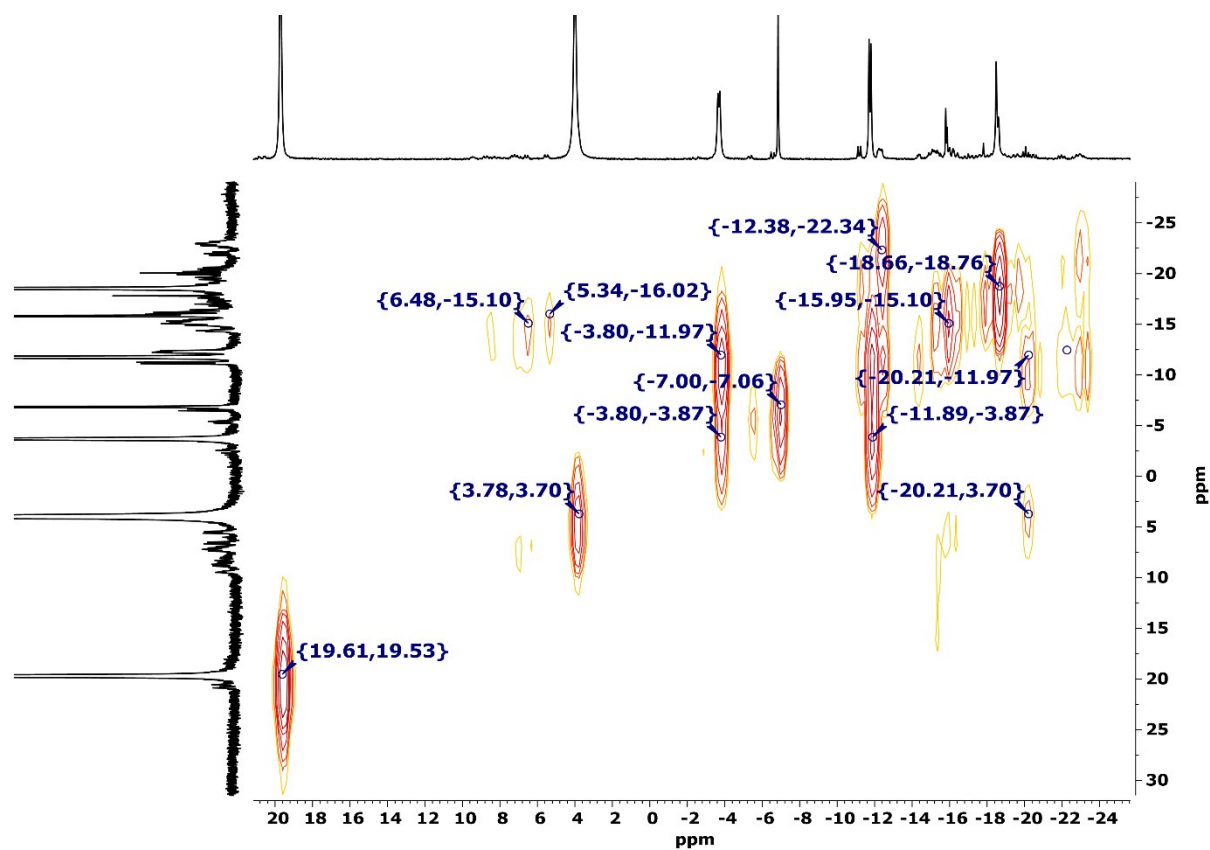
## Supporting Information

### Solvent Effect on Simple and High Yield Synthesis of Polydichlorophosphazene Precursor $\text{Cl}_3\text{P}=\text{NSiMe}_3$

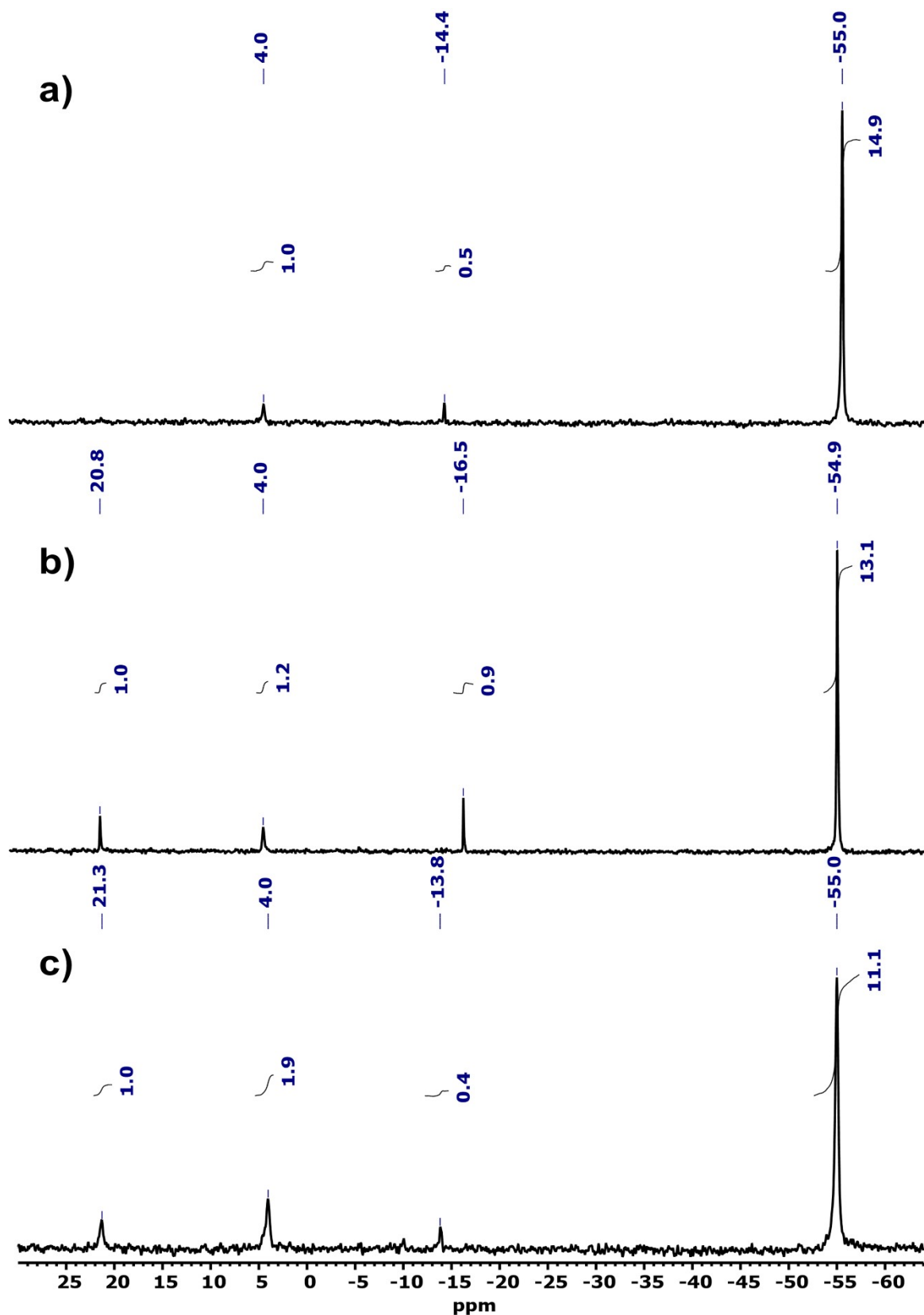
Elif Büşra ÇELEBİ,<sup>a</sup> and Ferda HACIVELİOĞLU\*<sup>a, b, c</sup>

#### CONTENTS

<b>Figure S1.</b>	<sup>31</sup> P- <sup>31</sup> P COSY NMR result of the reaction mixture given in Figure 3a.	<b>2</b>
<b>Figure S2.</b>	<sup>31</sup> P NMR results of PCl <sub>5</sub> (3eq.) with HMDS (4eq.) reaction in <b>a)</b> n-pentane, <b>b)</b> n-hexane, and <b>c)</b> benzene at 0°C.	<b>3</b>
<b>Figure S3.</b>	<b>a)</b> <sup>1</sup> H NMR, <b>b)</b> <sup>31</sup> P NMR, <b>c)</b> <sup>29</sup> Si NMR and <b>d)</b> <sup>13</sup> C NMR of isolated Cl <sub>3</sub> P=NSiMe <sub>3</sub> .	<b>4</b>
<b>Figure S4.</b>	<sup>31</sup> P NMR result from the experiment where the toluene solution of PCl <sub>5</sub> (3eq.) is slowly added to HMDS (4eq.) solution cooled to 0°C.	<b>5</b>
<b>Figure S5.</b>	<sup>1</sup> H NMR monitoring result of the condensation polymerisation of Cl <sub>3</sub> P=NSiMe <sub>3</sub> in the toluene reaction mixture at room temperature, <b>a)</b> 30 <sup>th</sup> min., <b>b)</b> 60 <sup>th</sup> min. and <b>c)</b> 90 <sup>th</sup> min.	<b>6</b>



**Figure S1.**  $^{31}\text{P}$ - $^{31}\text{P}$  COSY NMR result of the reaction mixture given in Figure 3a.



**Figure S2.**  $^{31}\text{P}$  NMR results of  $\text{PCl}_5$  (3eq.) with HMDS (4eq.) reaction in **a)** n-pentane, **b)** n-hexane, and **c)** benzene at  $0^\circ\text{C}$ .

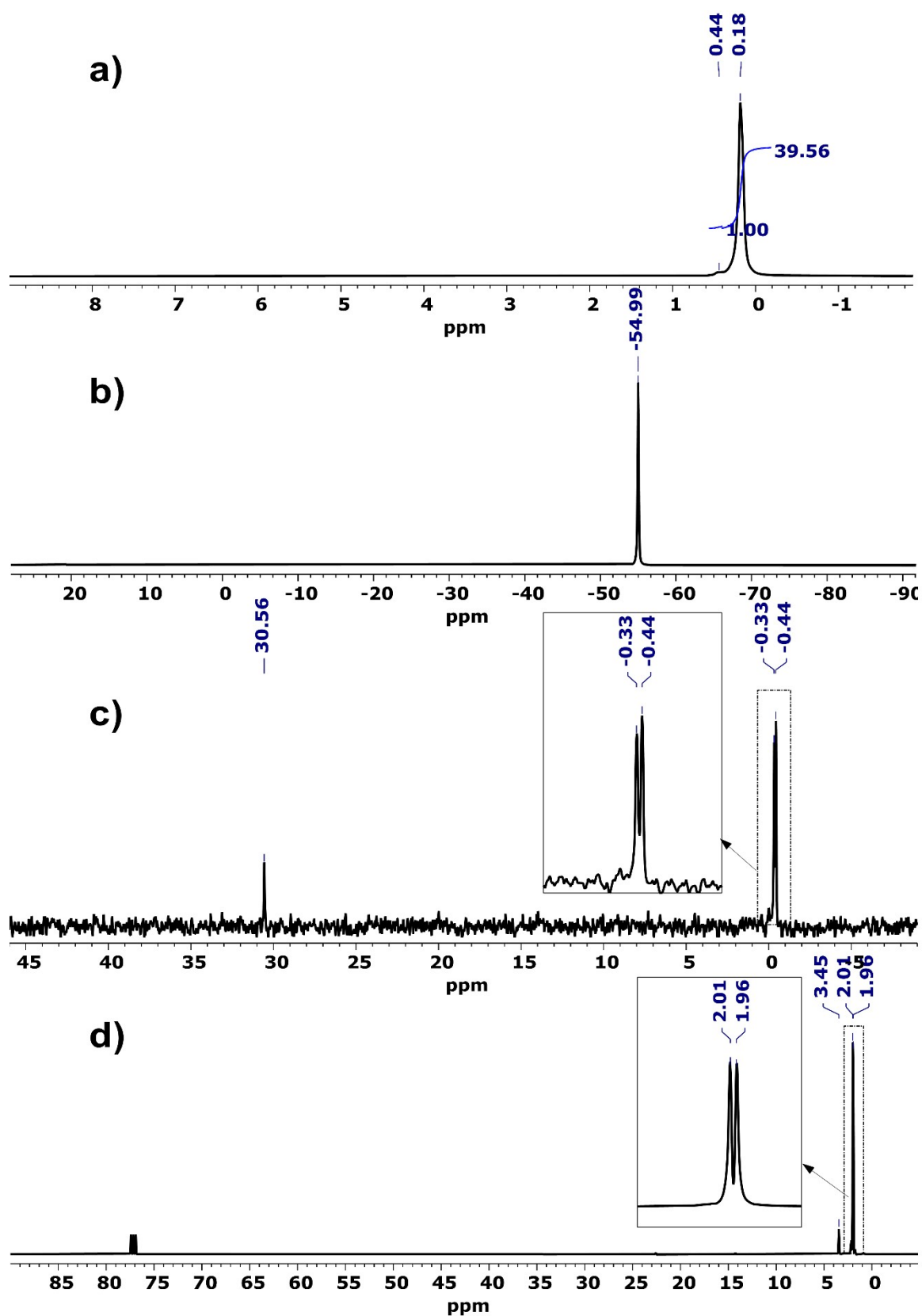
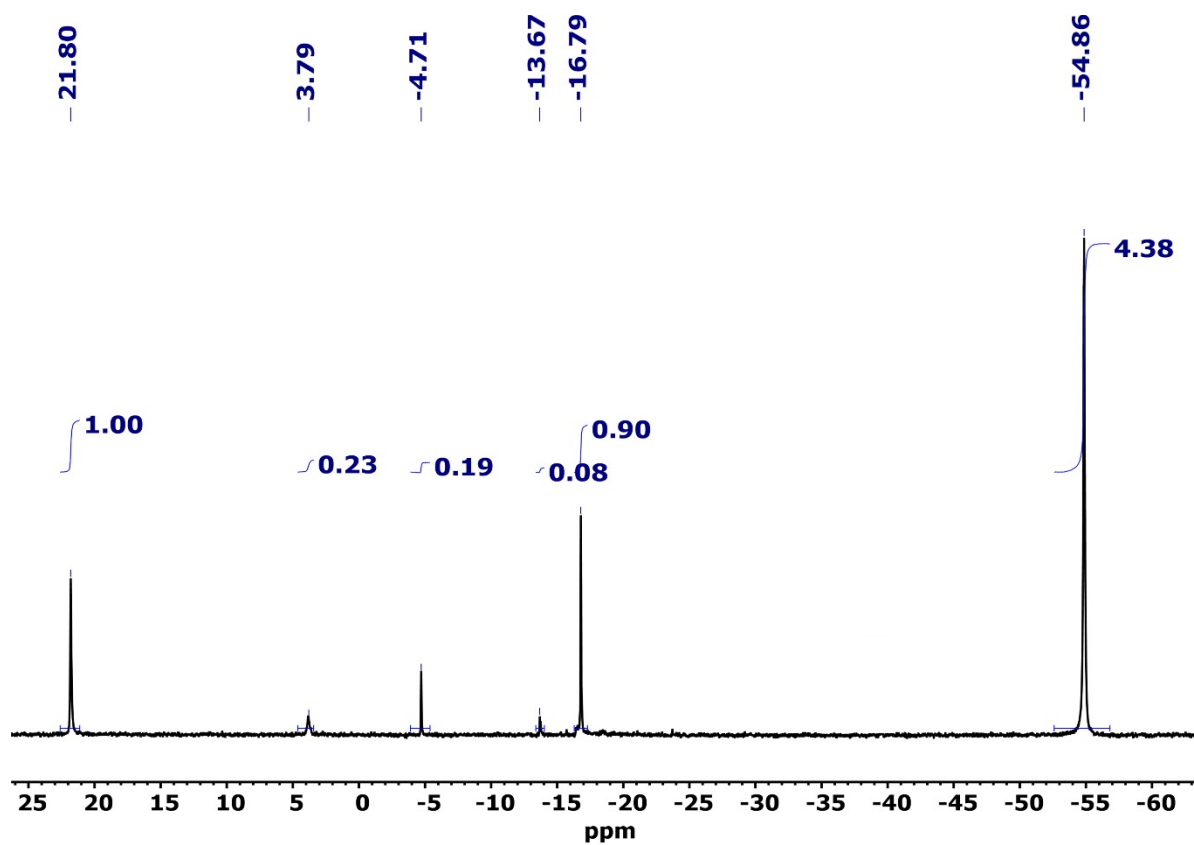
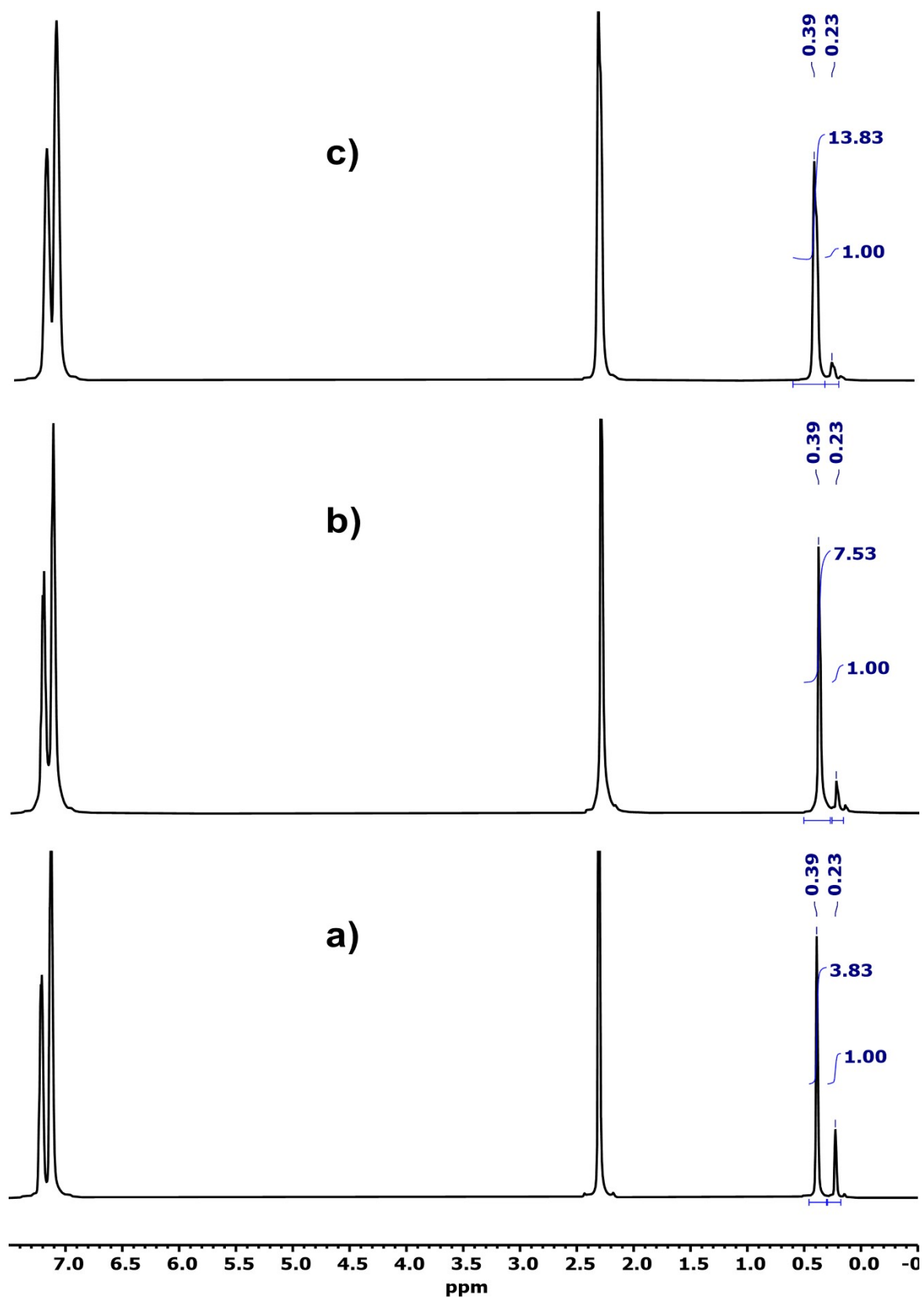


Figure S3. a)  $^1\text{H}$  NMR, b)  $^{31}\text{P}$  NMR, c)  $^{29}\text{Si}$  NMR and d)  $^{13}\text{C}$  NMR of isolated  $\text{Cl}_3\text{P}=\text{NSiMe}_3$



**Figure S4.**  $^{31}\text{P}$  NMR result from the experiment where the toluene solution of  $\text{PCl}_5$  (3eq.) is slowly added to HMDS (4eq.) solution cooled to  $0^\circ\text{C}$ .



**Figure S5.**  $^1\text{H}$  NMR monitoring result of the condensation polymerisation of  $\text{Cl}_3\text{P}=\text{NSiMe}_3$  in the toluene reaction mixture at room temperature, **a)** 30<sup>th</sup> min., **b)** 60<sup>th</sup> min. and **c)** 90<sup>th</sup> min.