

## Supporting Information

### Synthesis of Dual Functional Pyrimidinium Ionic Liquids as Reaction Media and Antimicrobial Agents

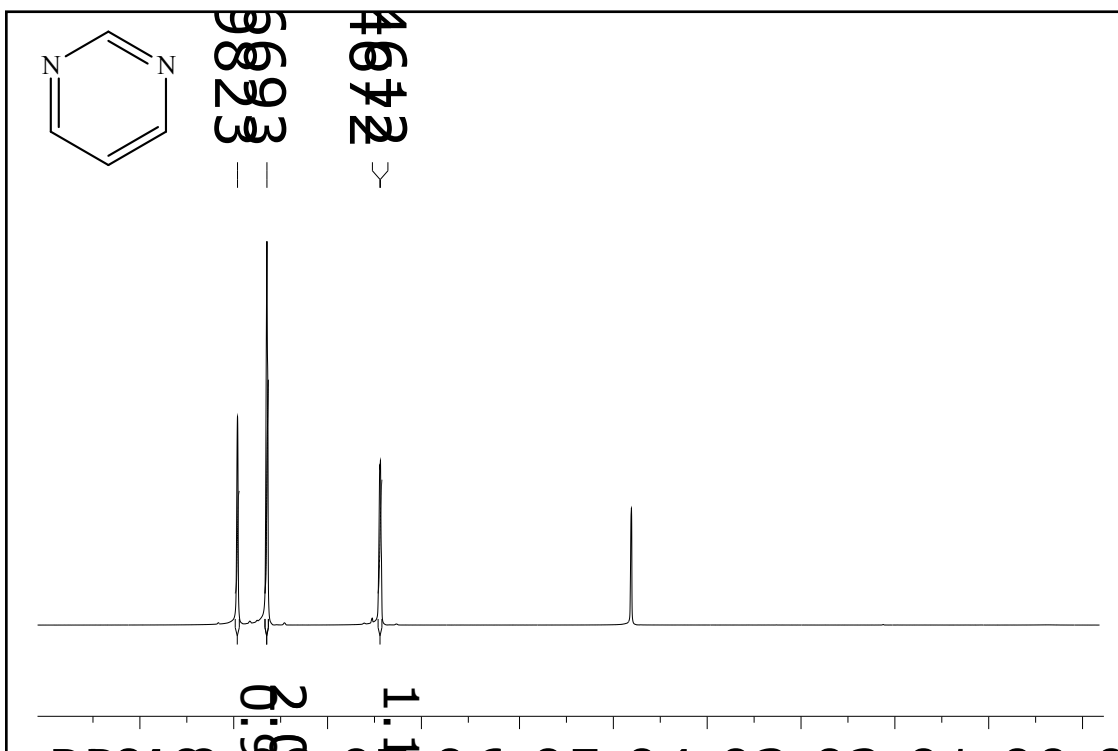
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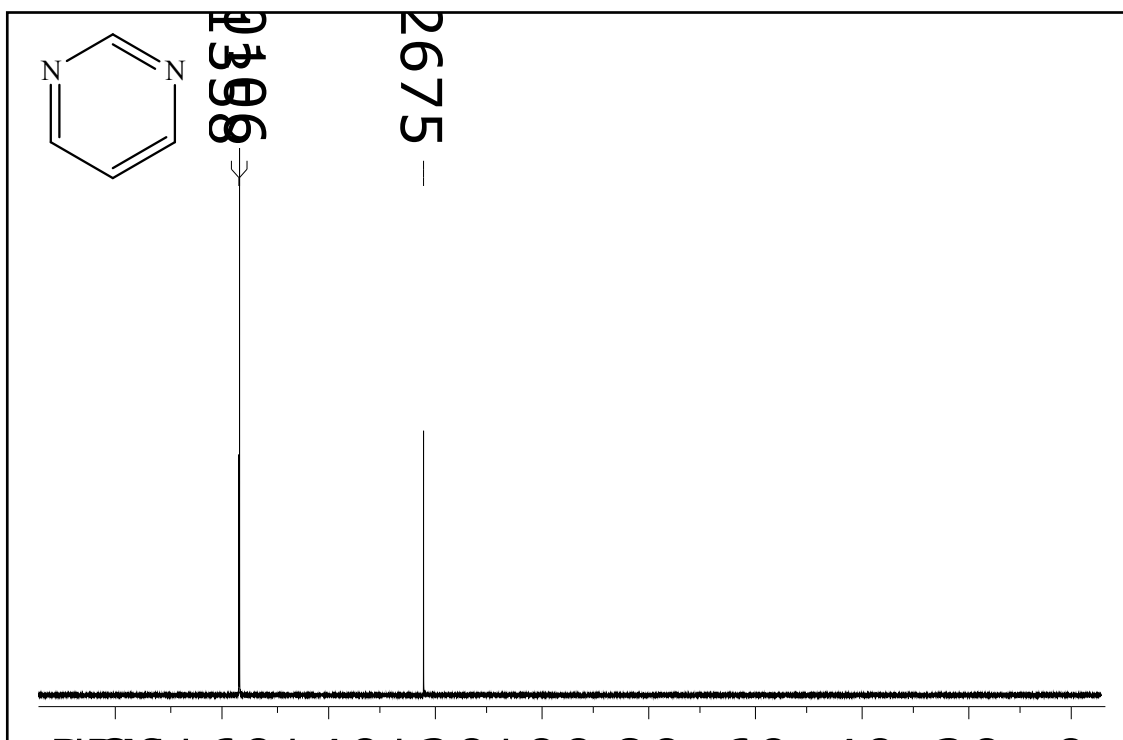
[dhananjoym@yahoo.com](mailto:dhananjoym@yahoo.com)

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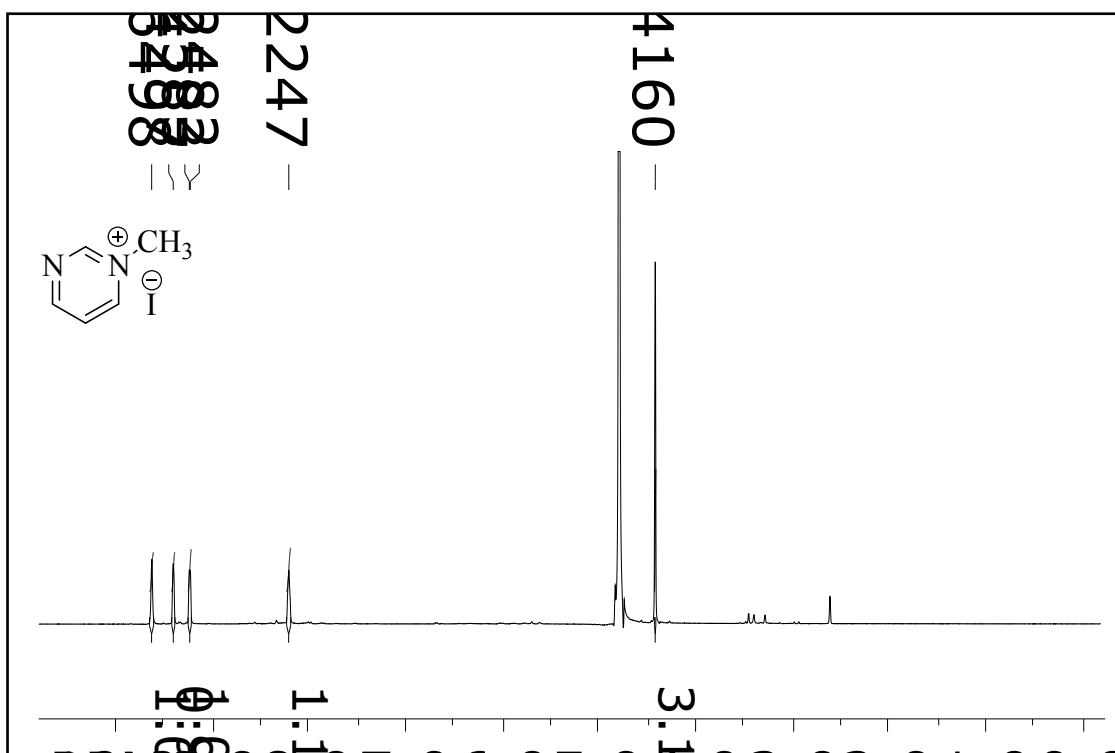
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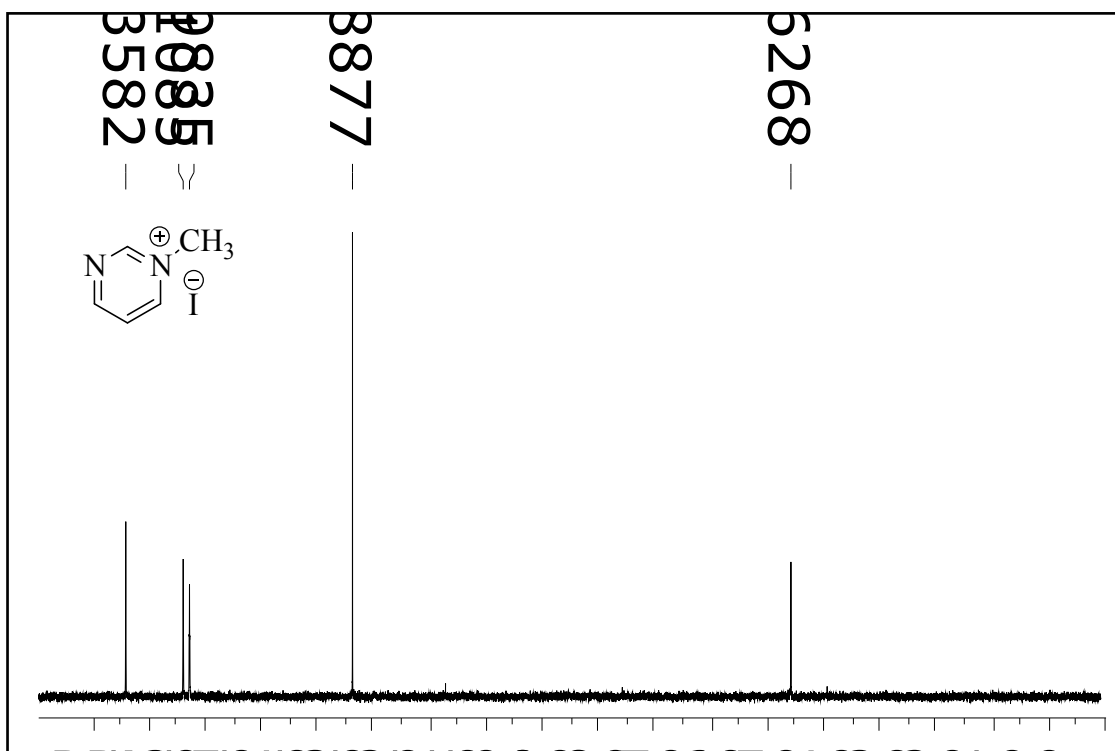
$^1\text{H}$  NMR spectrum of pyrimidine (**1a**) in  $\text{D}_2\text{O}$  at 500 MHz



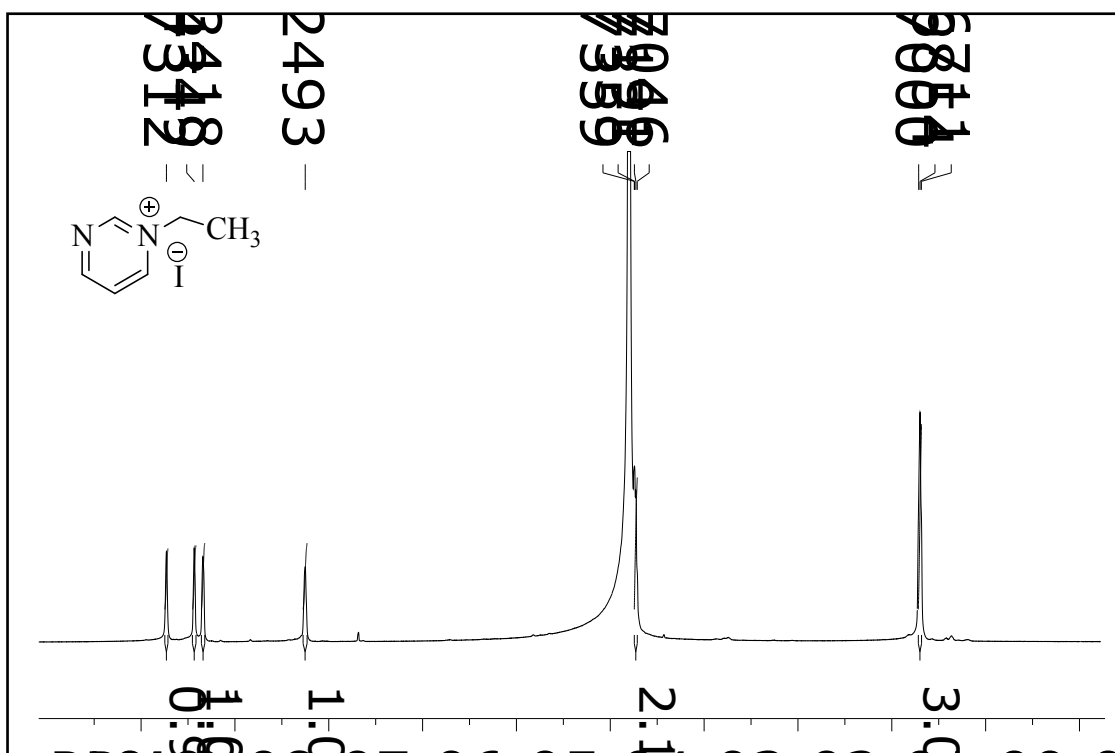
$^{13}\text{C}$  NMR spectrum of pyrimidine (**1a**) in  $\text{D}_2\text{O}$  at 500 MHz



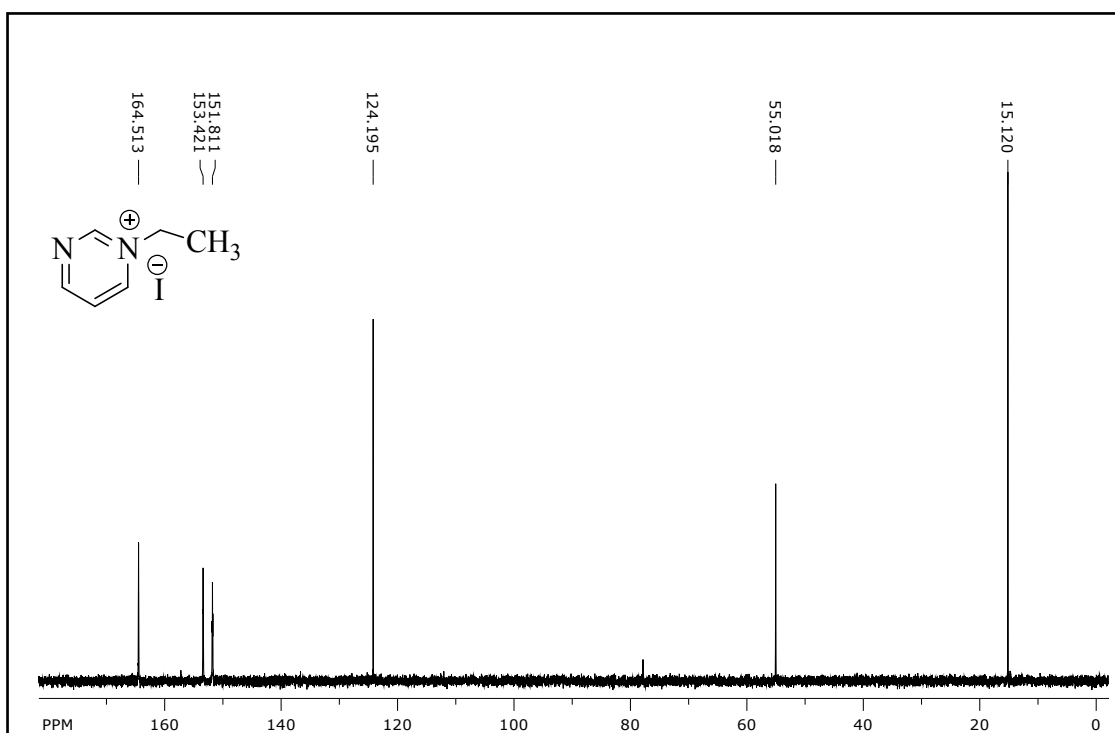
$^1\text{H}$  NMR spectrum of 1-methylpyrimidin-1-ium iodide (**2a**) in  $\text{D}_2\text{O}$  at 500 MHz



$^{13}\text{C}$  NMR spectrum of 1-methylpyrimidin-1-ium iodide (**2a**) in  $\text{D}_2\text{O}$  at 500 MHz



<sup>1</sup>H NMR spectrum of 1-ethylpyrimidin-1-ium iodide (**2b**) in D<sub>2</sub>O at 500 MHz

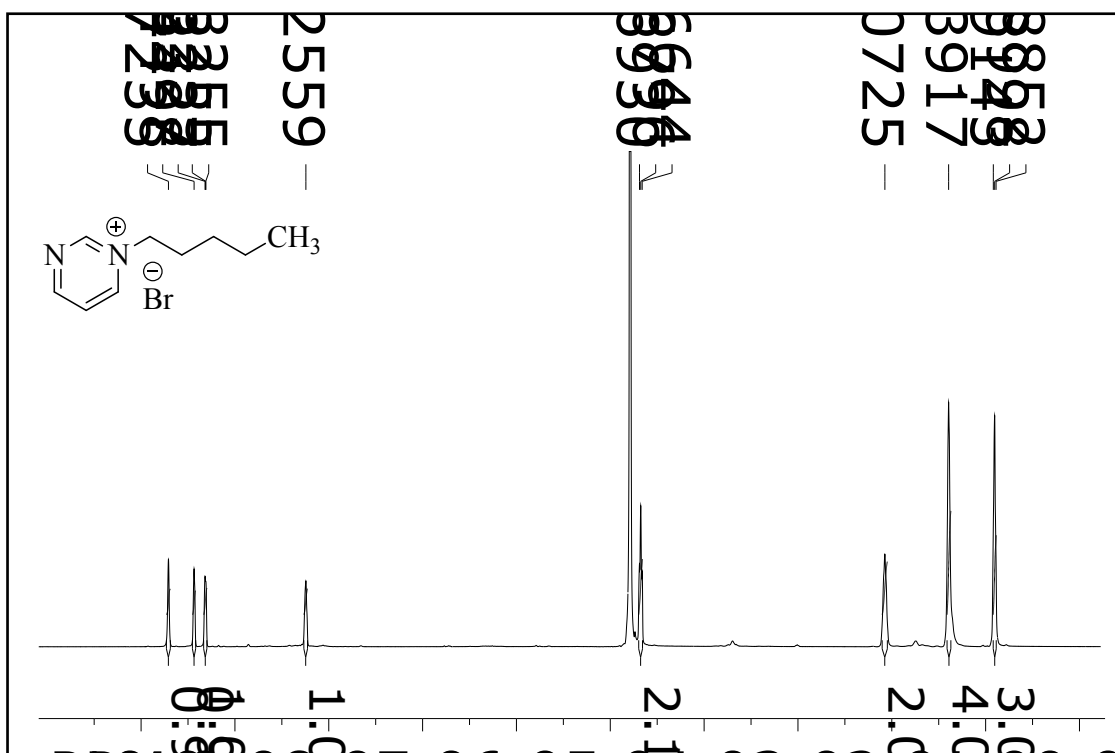


<sup>13</sup>C NMR spectrum of 1-ethylpyrimidin-1-ium iodide (**2b**) in D<sub>2</sub>O at 500 MHz

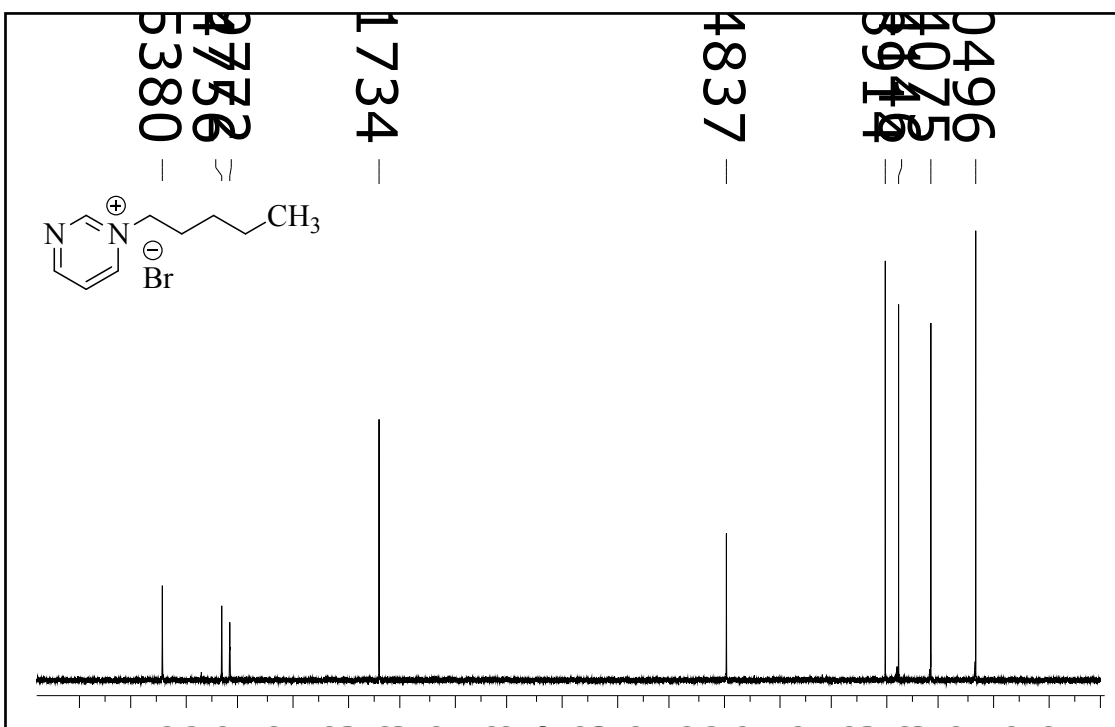






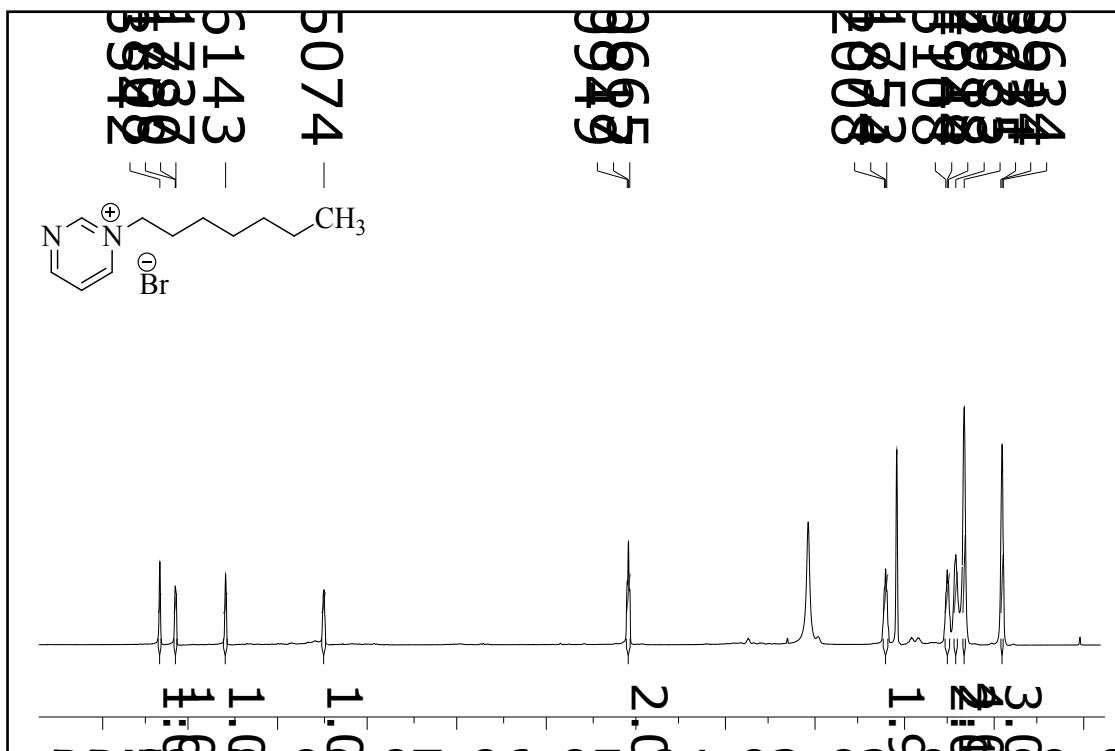


$^1\text{H}$  NMR spectrum of 1-pentylpyrimidin-1-ium bromide (**2e**) in  $\text{D}_2\text{O}$  at 500 MHz

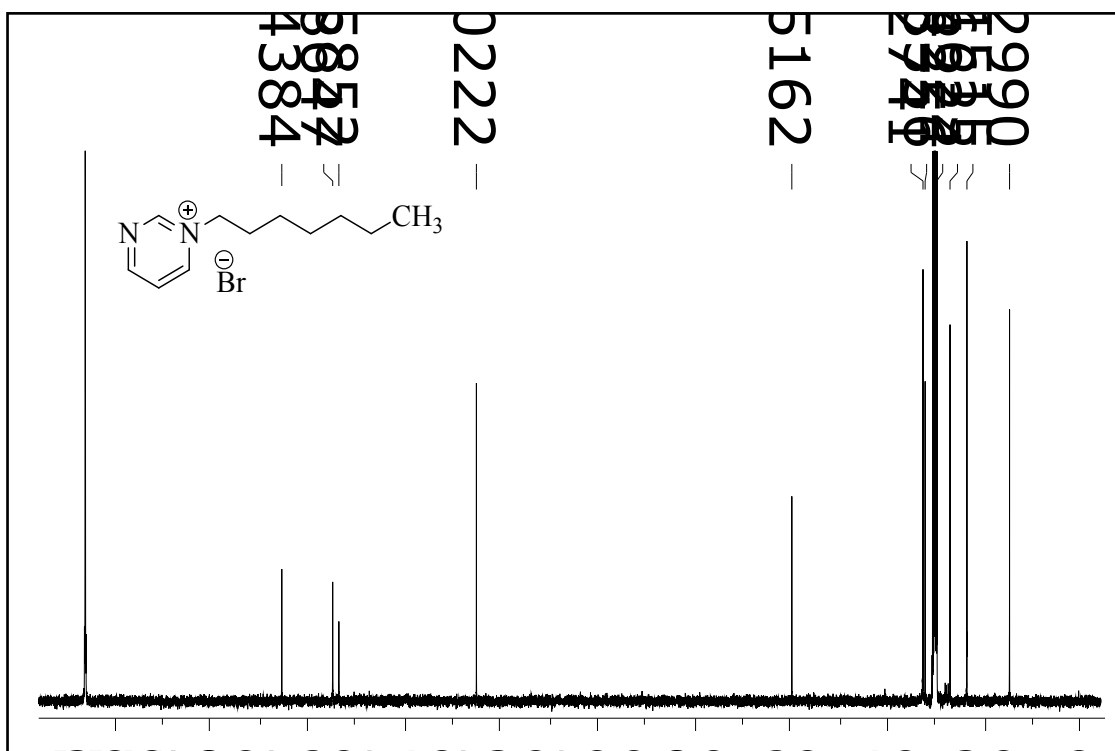


$^{13}\text{C}$  NMR spectrum of 1-pentylpyrimidin-1-ium bromide (**2e**) in  $\text{D}_2\text{O}$  at 500 MHz





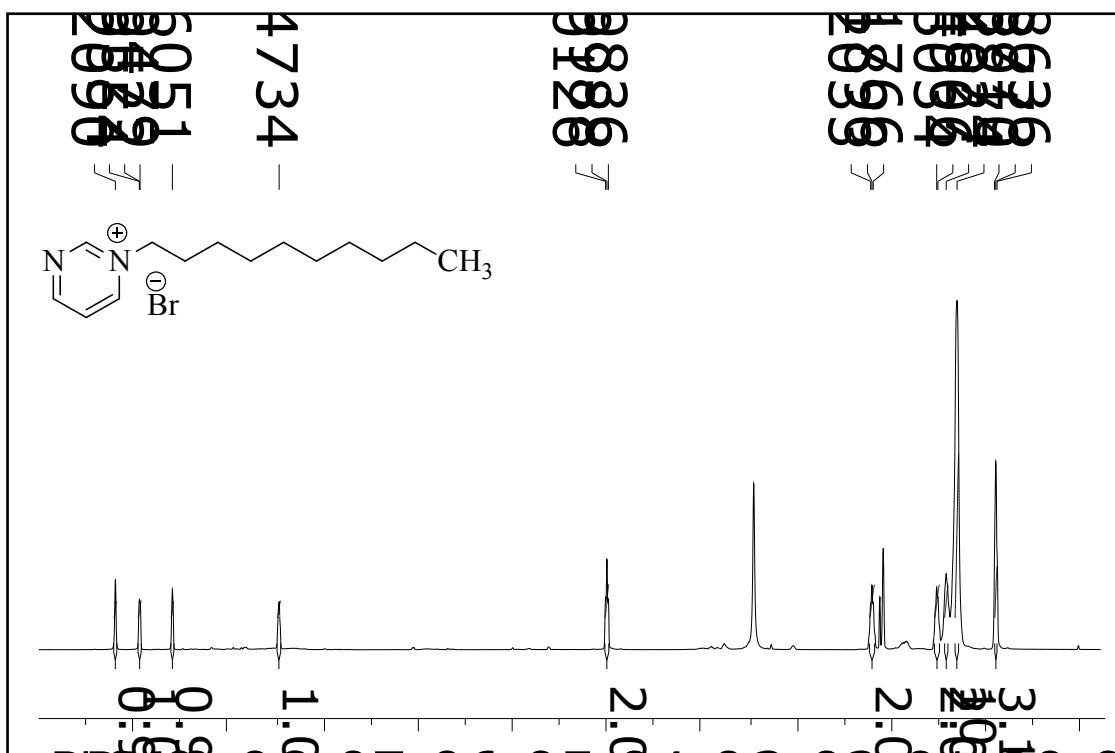
$^1\text{H}$  NMR spectrum of 1-heptylpyrimidin-1-ium bromide (**2g**) in acetone- $\text{d}_6$  at 500 MHz



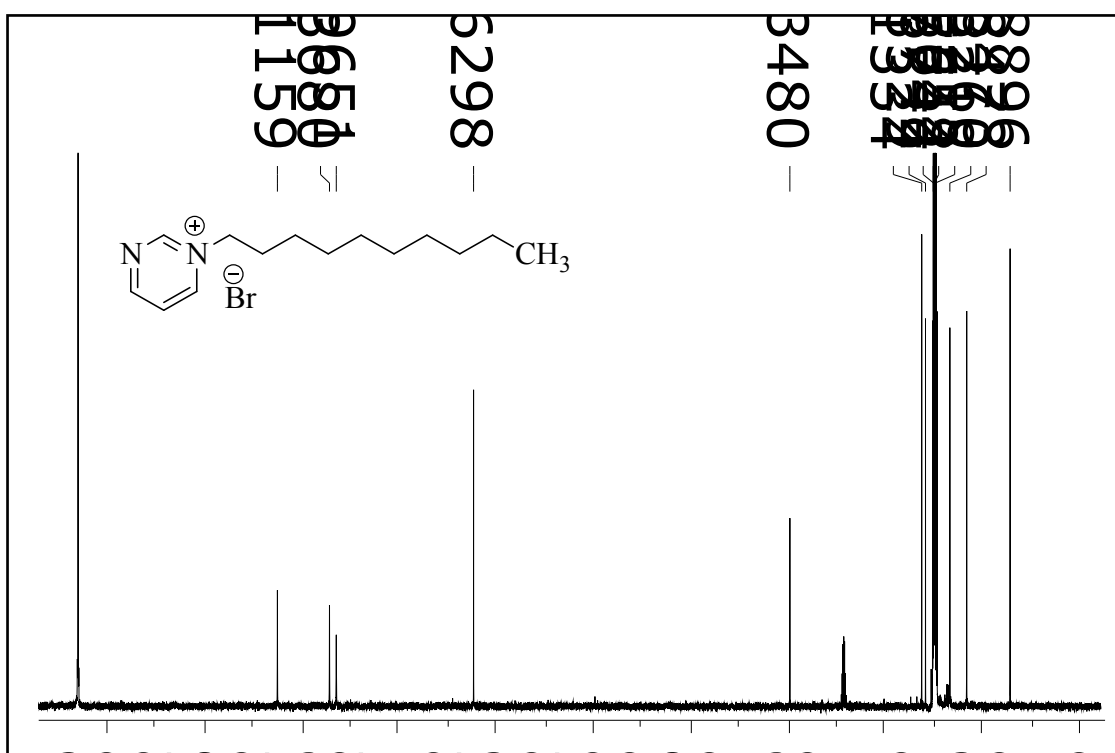
$^{13}\text{C}$  NMR spectrum of 1-heptylpyrimidin-1-ium bromide (**2g**) in acetone- $\text{d}_6$  at 500 MHz





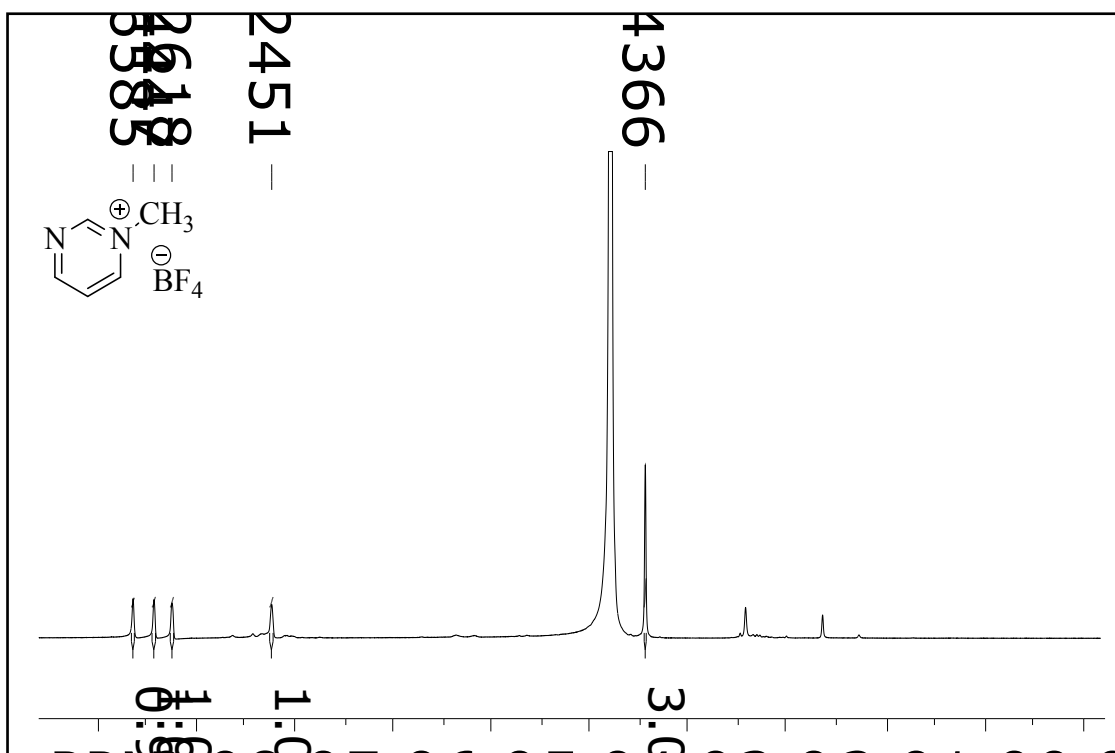


$^1\text{H}$  NMR spectrum of 1-decylpyrimidin-1-ium bromide (**2j**) in acetone- $\text{d}_6$ + $\text{CD}_3\text{OD}$  at 500 MHz

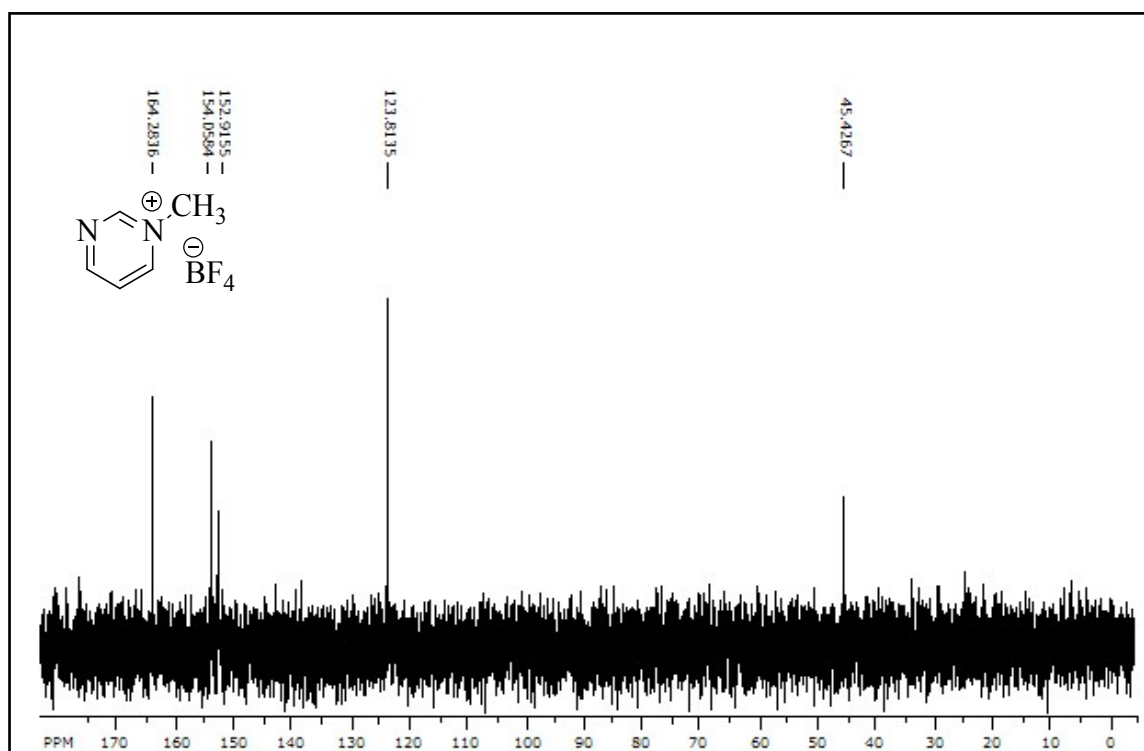


$^{13}\text{C}$  NMR spectrum of 1-decylpyrimidin-1-ium bromide (**2j**) in acetone- $\text{d}_6$ + $\text{CD}_3\text{OD}$  at 500 MHz



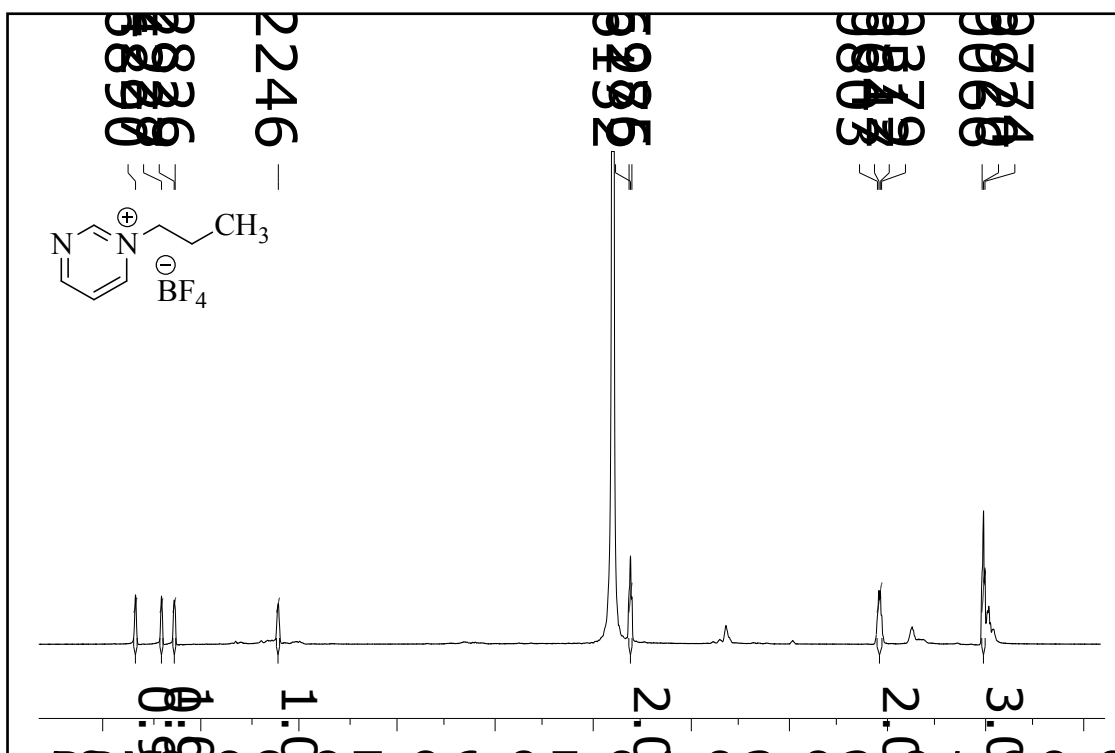


$^1\text{H}$  NMR spectrum of 1-methylpyrimidin-1-ium tetrafluoroborate (**3a**) in  $\text{D}_2\text{O}$  at 500 MHz

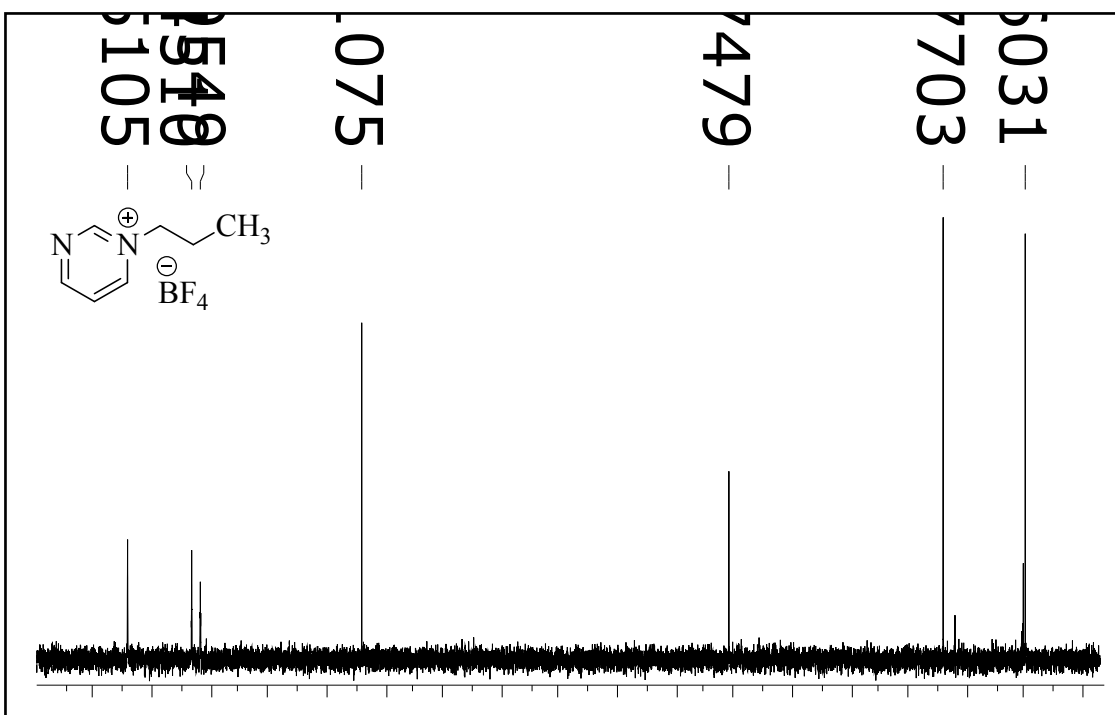


$^{13}\text{C}$  NMR spectrum of 1-methylpyrimidin-1-ium tetrafluoroborate (**3a**) in  $\text{D}_2\text{O}$  at 500 MHz





$^1\text{H}$  NMR spectrum of 1-propylpyrimidin-1-ium tetrafluoroborate (**3c**) in  $\text{D}_2\text{O}$  at 500 MHz



$^{13}\text{C}$  NMR spectrum of 1-propylpyrimidin-1-ium tetrafluoroborate (**3c**) in  $\text{D}_2\text{O}$  at 500 MHz









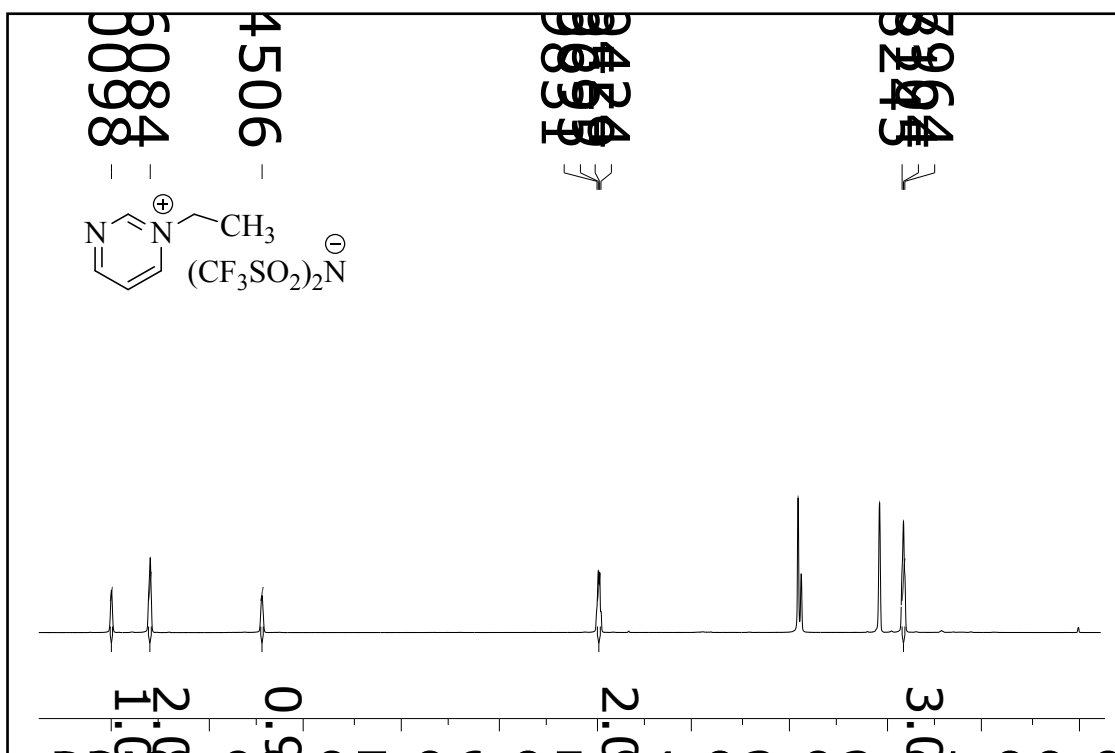




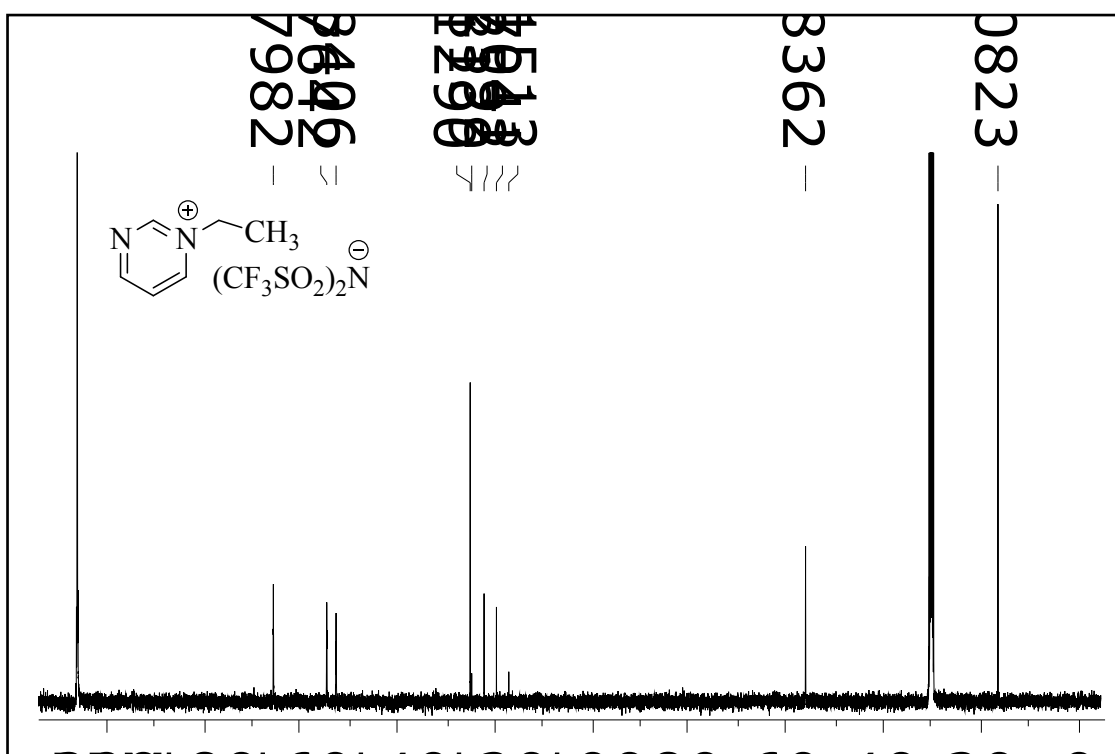




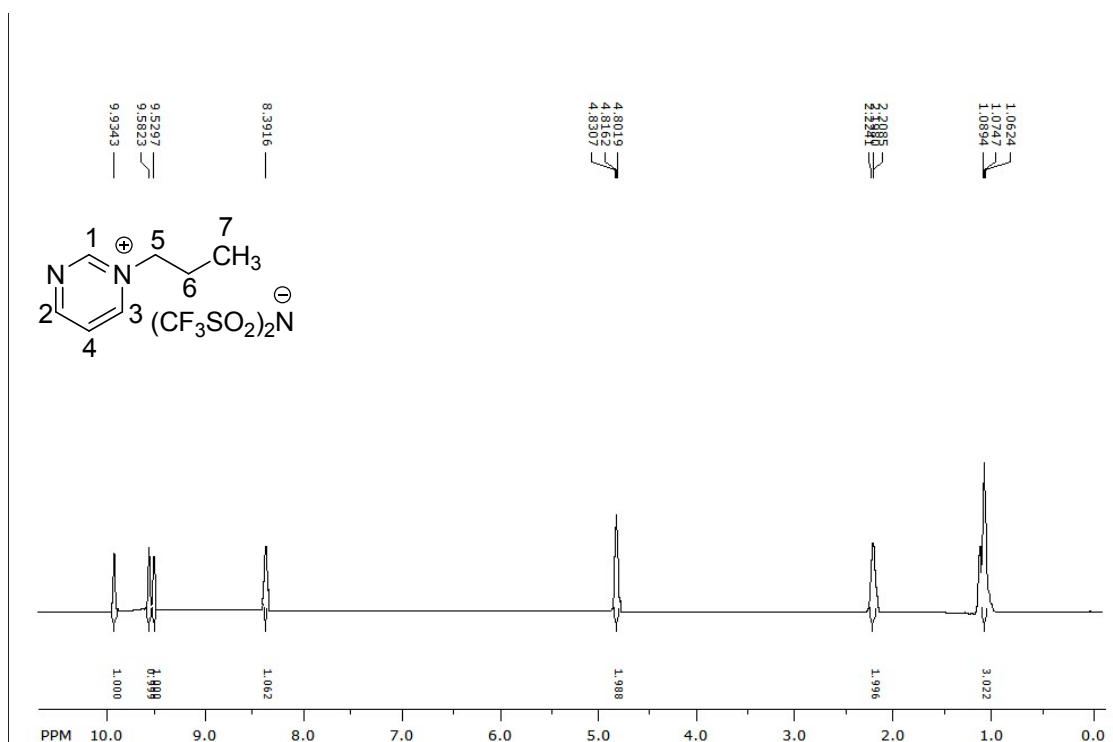




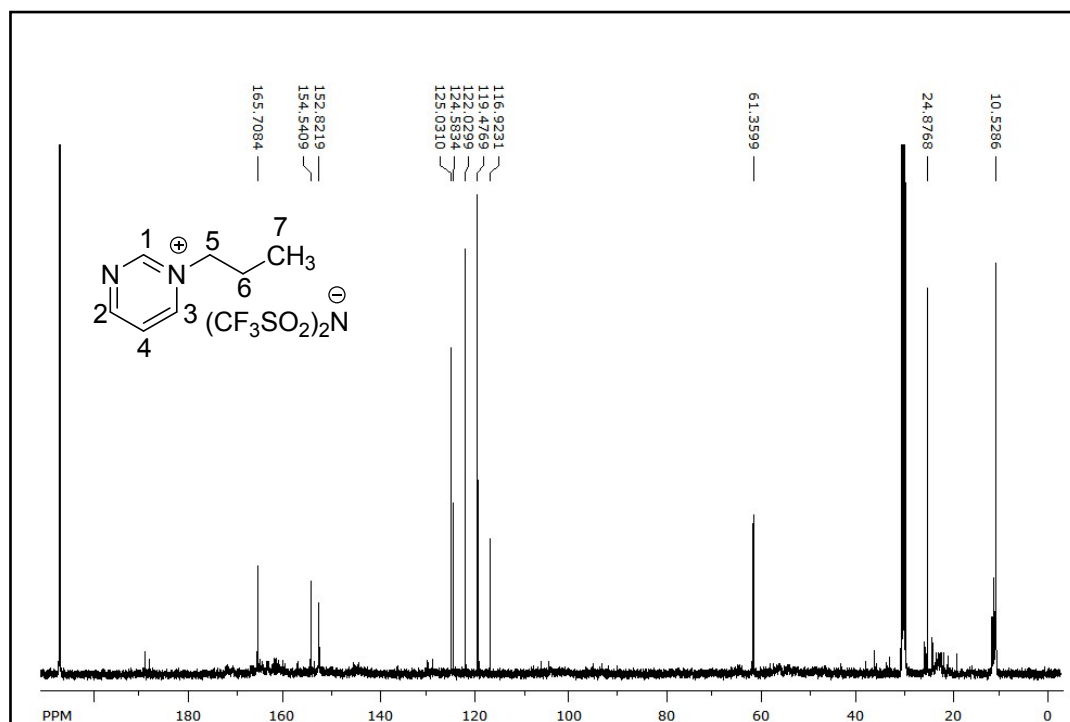
<sup>1</sup>H NMR spectra of 1-ethylpyrimidin-1-ium bis(trifluoromethanesulfonyl)amide (**4b**) in acetone-d<sub>6</sub> at 500 MHz



<sup>13</sup>C NMR spectrum of 1-ethylpyrimidin-1-ium bis(trifluoromethanesulfonyl)amide (**4b**) in acetone-d<sub>6</sub> at 500 MHz

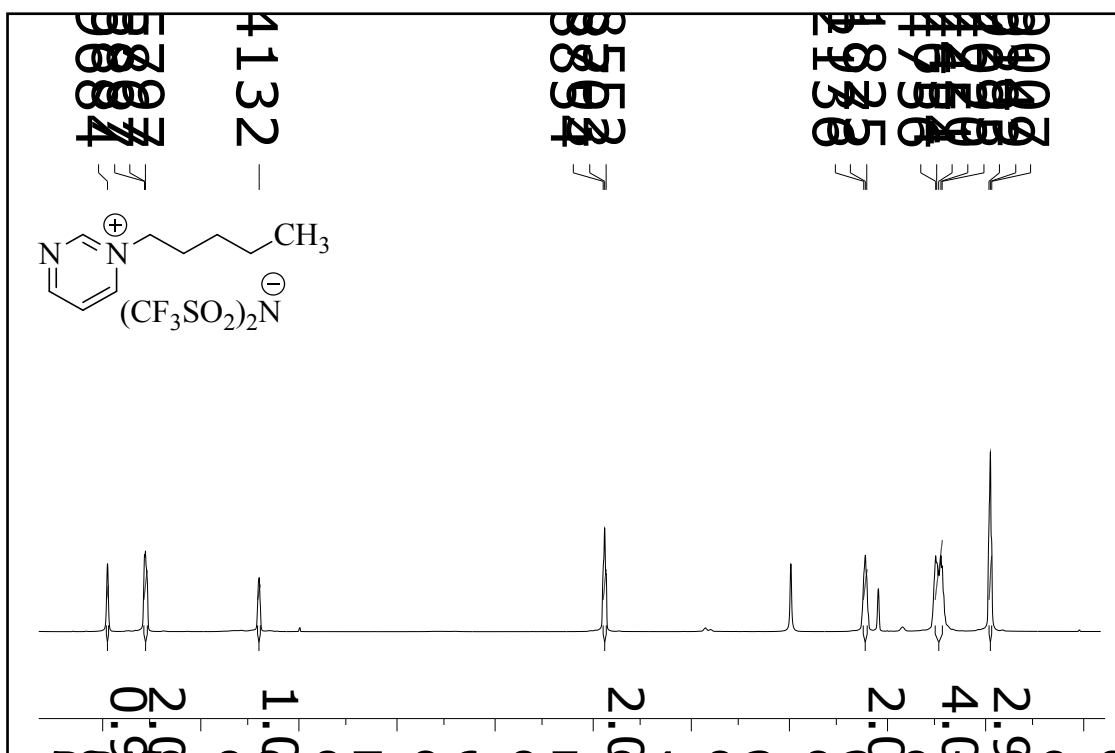


<sup>1</sup>H NMR spectrum of 1-propylpyrimidin-1-ium bis(trifluoromethanesulfonyl)amide (**4c**) in acetone-d<sub>6</sub> at 500 MHz

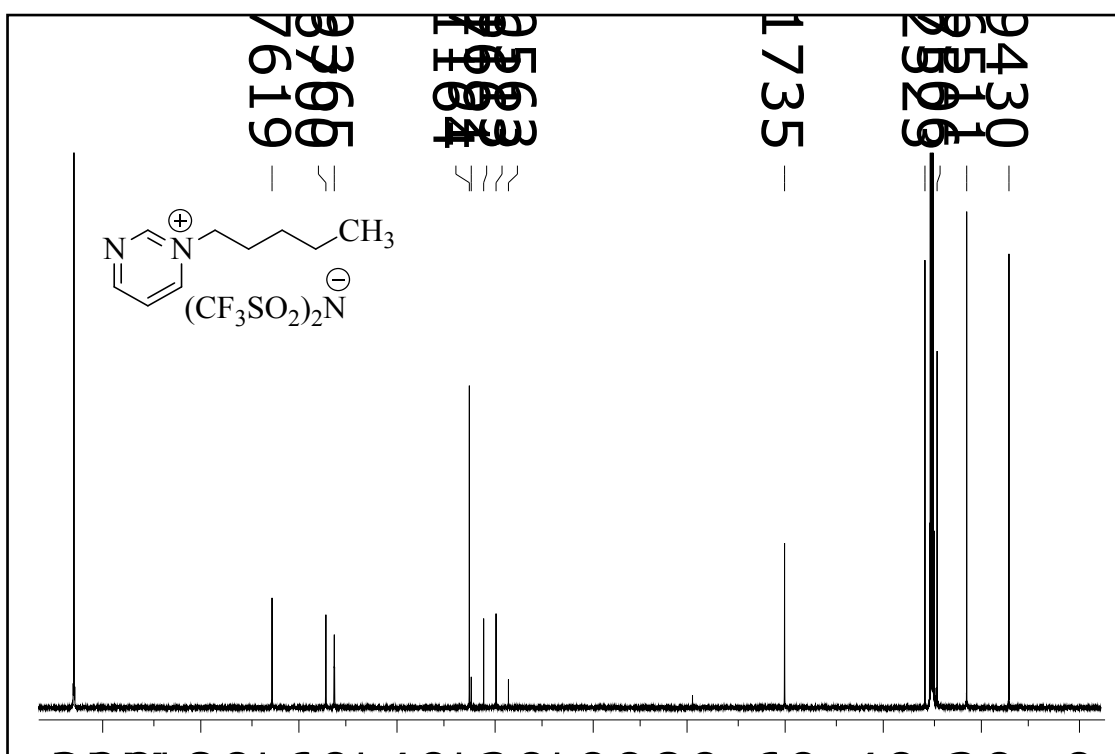


<sup>13</sup>C NMR spectrum of 1-propylpyrimidin-1-ium bis(trifluoromethanesulfonyl)amide (**4c**) in acetone-d<sub>6</sub> at 500 MHz



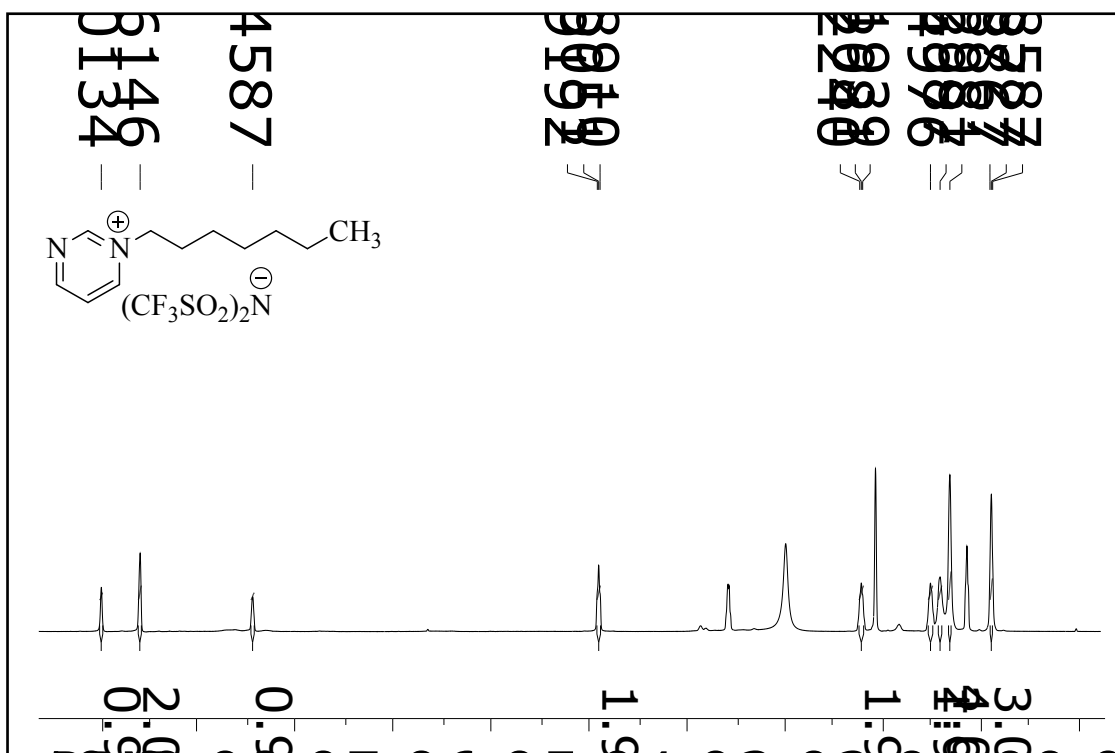


<sup>1</sup>H NMR spectrum of 1-pentylpyrimidin-1-ium bis(trifluoromethanesulfonyl)amide (**4e**) in acetone-d<sub>6</sub> at 500 MHz

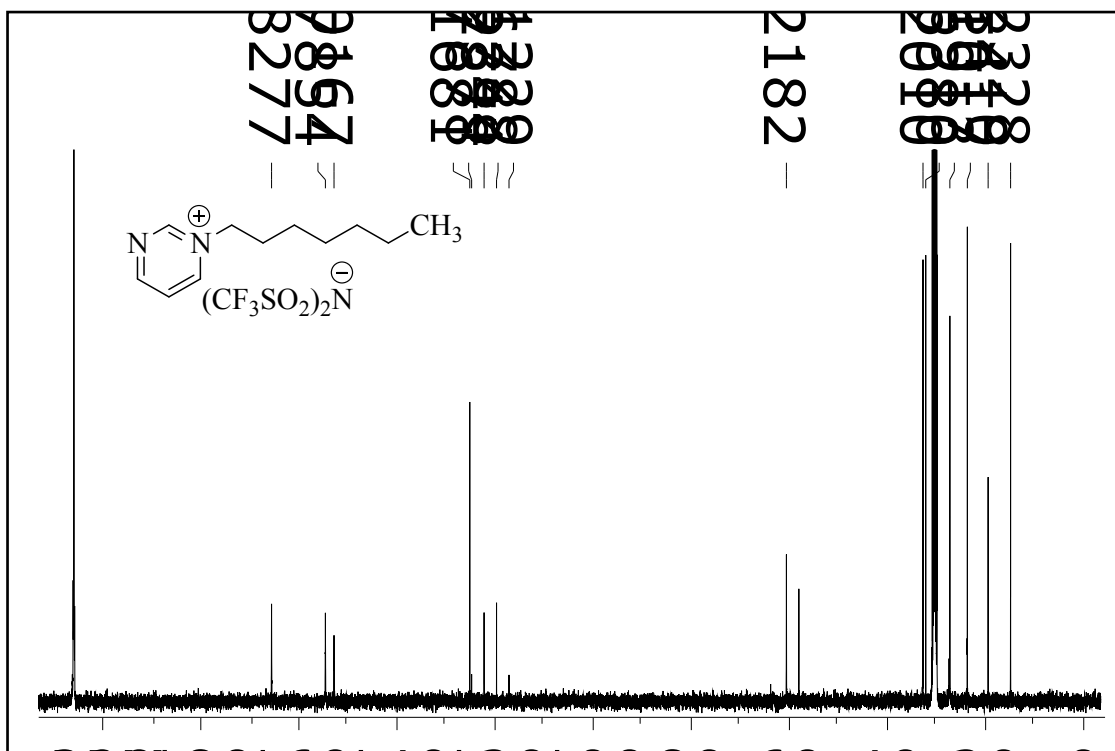






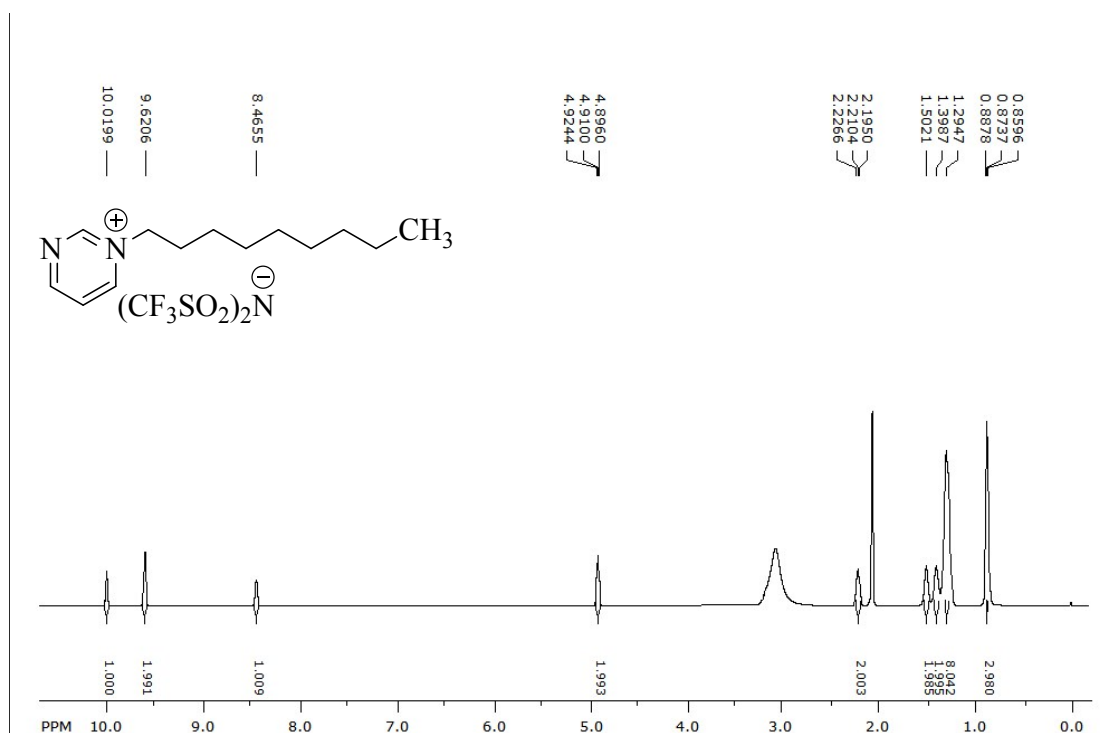


$^1\text{H}$  NMR spectrum of 1-heptylpyrimidin-1-ium bis(trifluoromethanesulfonyl)amide (**4g**) in acetone- $\text{d}_6$  at 500 MHz

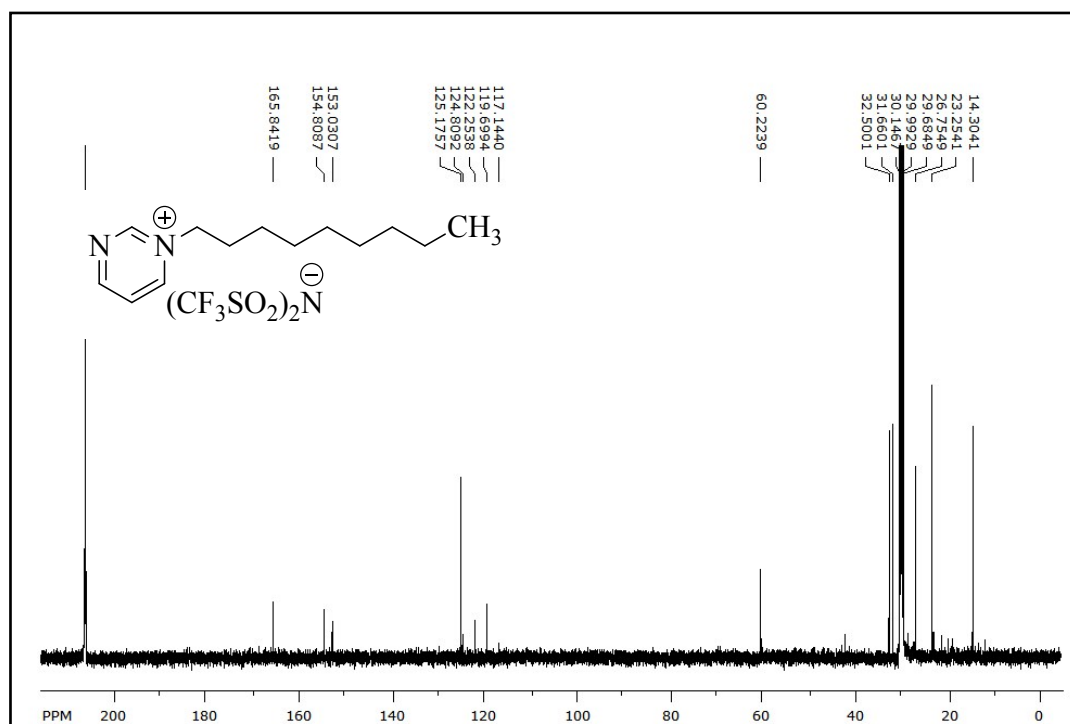


$^{13}\text{C}$  NMR spectrum of 1-heptylpyrimidin-1-ium bis(trifluoromethanesulfonyl)amide (**4g**) in acetone- $\text{d}_6$  at 500 MHz

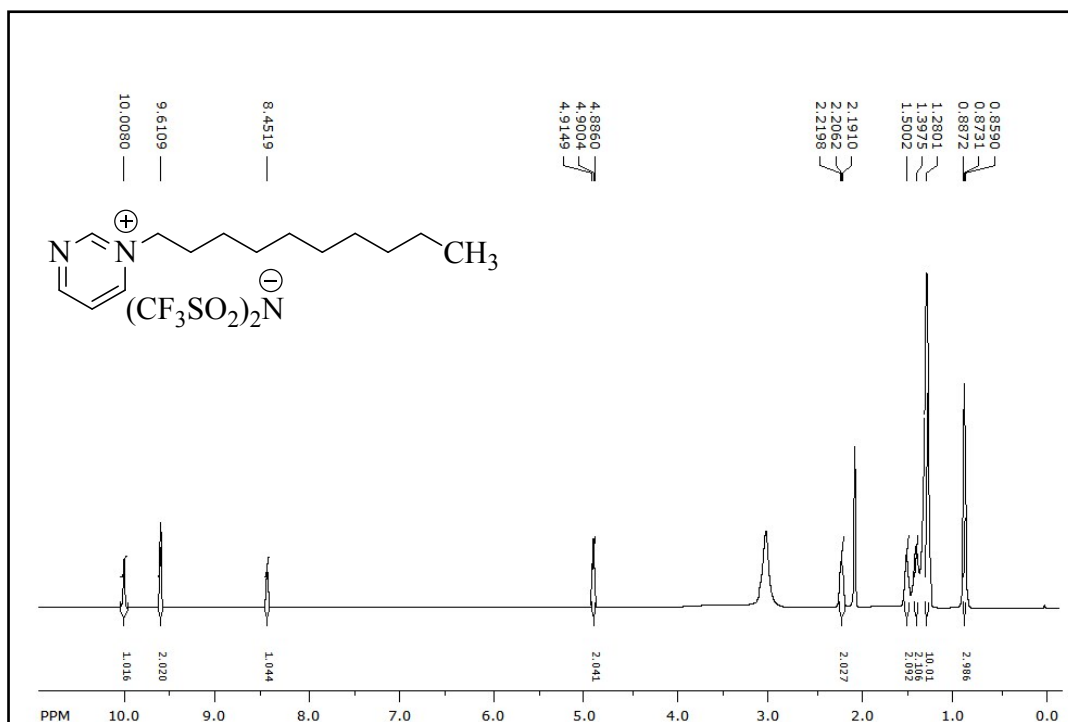




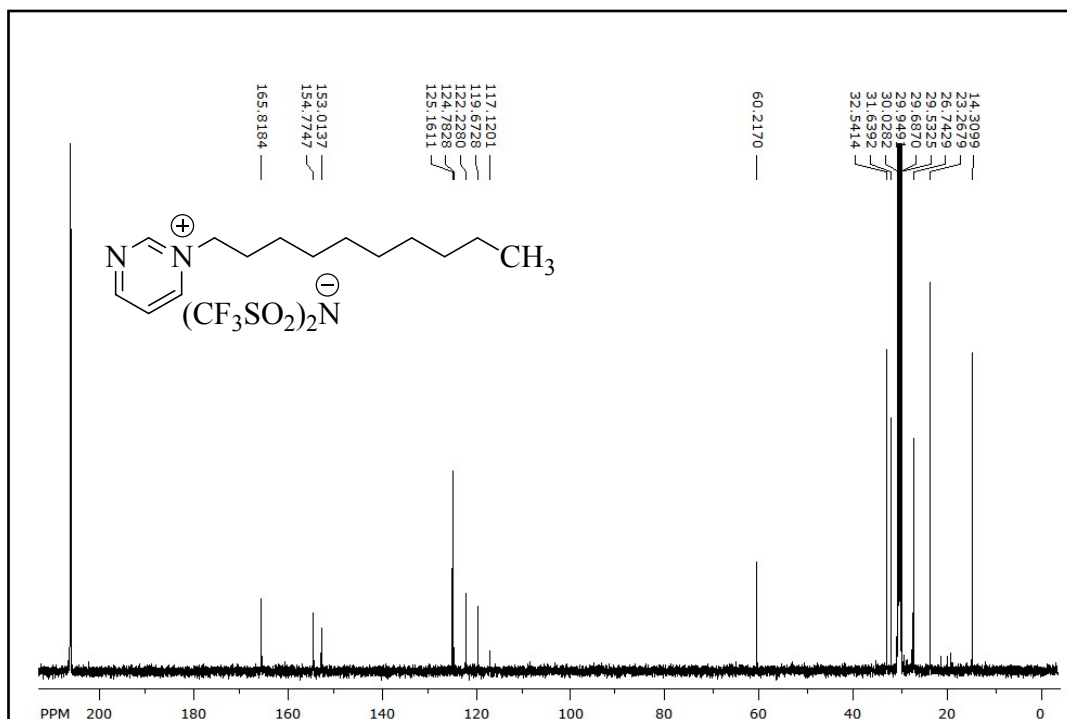
$^1\text{H}$  NMR spectrum of 1-nonylpyrimidin-1-ium bis(trifluoromethanesulfonyl)amide (**4i**) in acetone- $\text{d}_6$  at 500 MHz



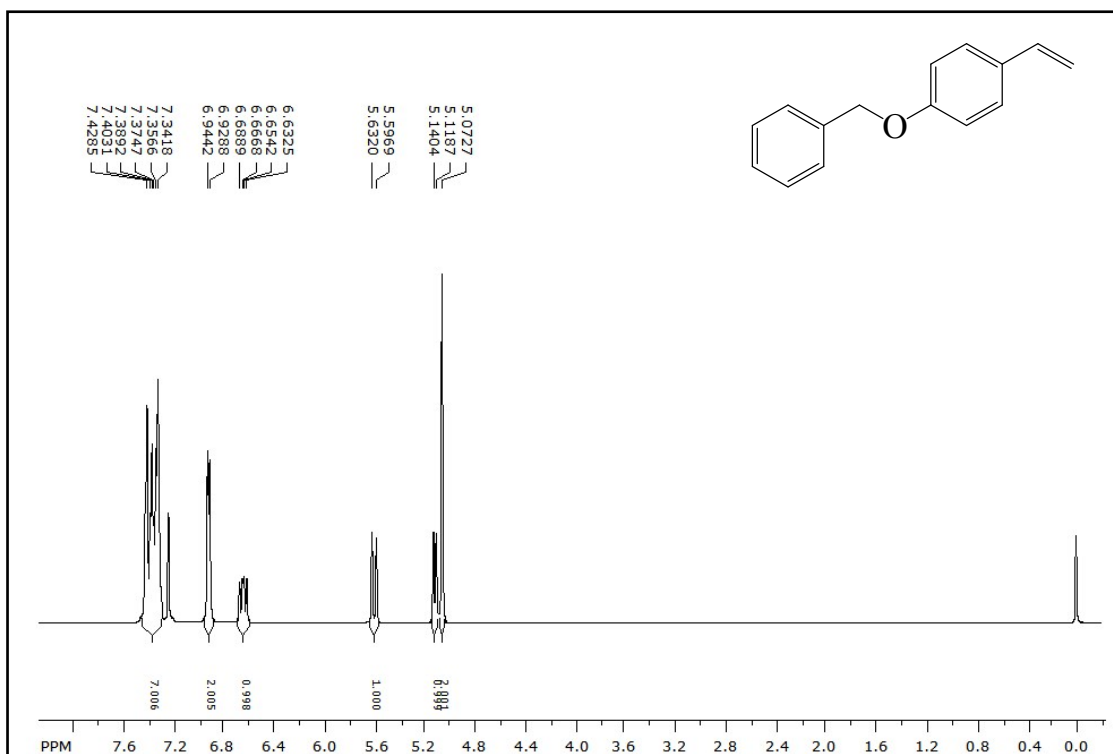
$^{13}\text{C}$  NMR spectrum of 1-nonylpyrimidin-1-ium bis(trifluoromethanesulfonyl)amide (**4i**) in acetone- $\text{d}_6$  at 500 MHz



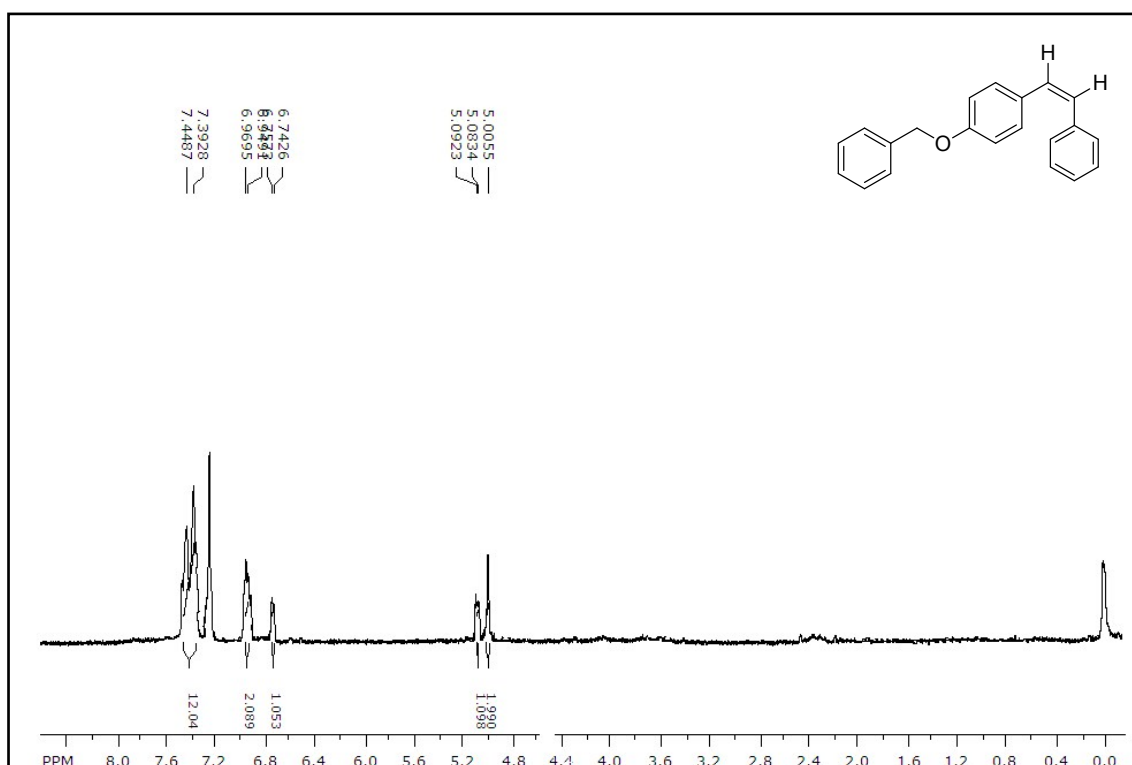
$^1\text{H}$  NMR spectrum of 1-decylpyrimidin-1-ium bis(trifluoromethanesulfonyl)amide (**4j**) in acetone- $\text{d}_6$  at 500 MHz



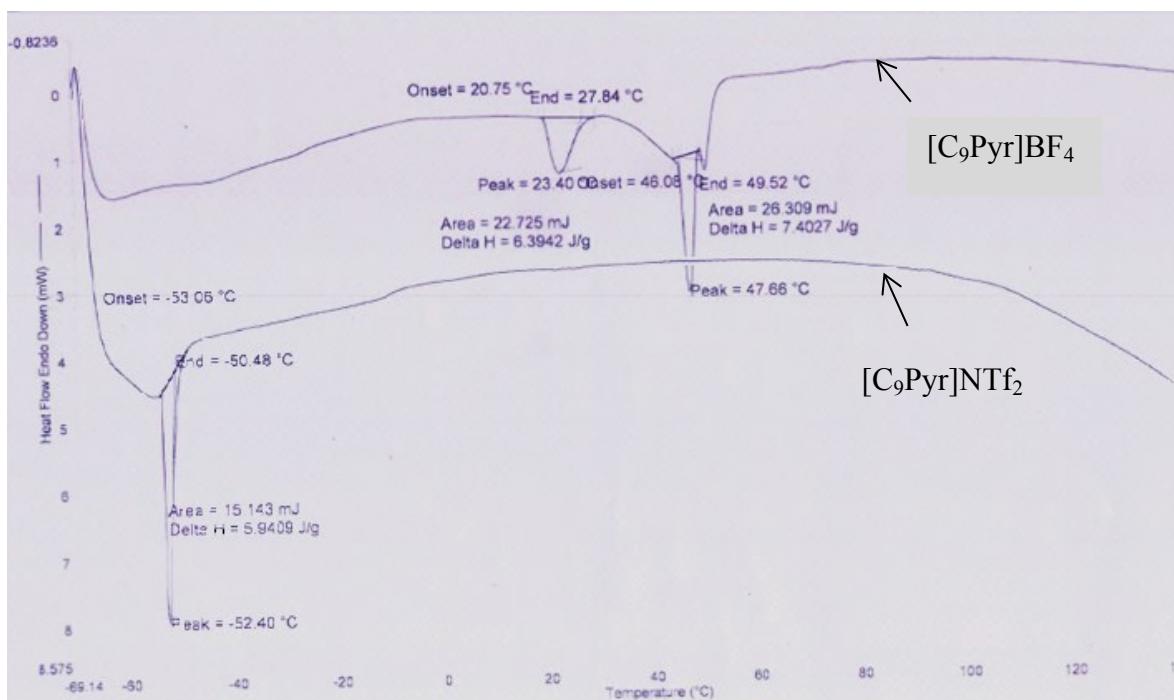
$^{13}\text{C}$  NMR spectrum of 1-decylpyrimidin-1-ium bis(trifluoromethanesulfonyl)amide (**4j**) in acetone- $\text{d}_6$  at 500 MHz



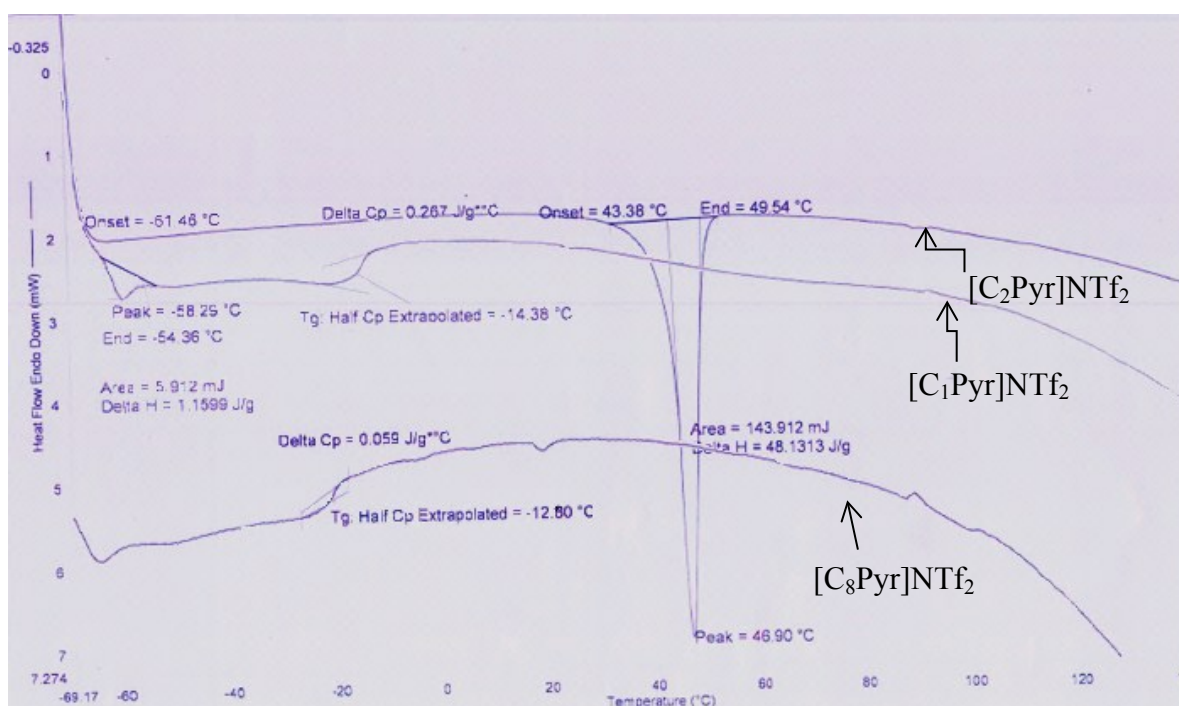
$^1\text{H}$  NMR spectrum of 1-(benzyloxy)-4-vinylbenzene (**5**) in  $\text{CDCl}_3$  at 500 MHz



$^1\text{H}$  NMR spectrum of (*cis*)-1-(benzyloxy)-4-styrylbenzene (**7**) in  $\text{CDCl}_3$  at 500 MHz



**Figure S1.** DSC plot of [C<sub>9</sub>Pyr]BF<sub>4</sub> and [C<sub>9</sub>Pyr]NTf<sub>2</sub> ionic liquid



**Figure S2.** DSC plot of [C<sub>1</sub>Pyr]NTf<sub>2</sub>, [C<sub>2</sub>Pyr]NTf<sub>2</sub> and [C<sub>8</sub>Pyr]NTf<sub>2</sub> ionic liquid

<b>Pyrimidinium ionic liquids</b>	$\Delta H_m / \text{J}\cdot\text{g}^{-1}$	$T_{\text{onset}} / ^\circ\text{C}$	$T_{\text{peak}} / ^\circ\text{C}$ ( $T_m$ )	$T_{\text{endset}} / ^\circ\text{C}$	$\Delta C_p / \text{J}\cdot\text{g}^{-1}\cdot^\circ\text{C}$
[C <sub>9</sub> Pyr]BF <sub>4</sub>	7.4027	46.08	47.66	49.52	-
[C <sub>1</sub> Pyr]NTf <sub>2</sub>	1.1599	-61.46	-58.29	-54.36	0.267
[C <sub>2</sub> Pyr] NTf <sub>2</sub>	48.1313	43.38	46.90	49.54	-
[C <sub>8</sub> Pyr] NTf <sub>2</sub>	-	-	-	-	0.059
[C <sub>9</sub> Pyr] NTf <sub>2</sub>	5.9409	-53.06	-52.40	-50.48	-

**Table 1S.** Thermal properties of pyrimidinium ionic liquids