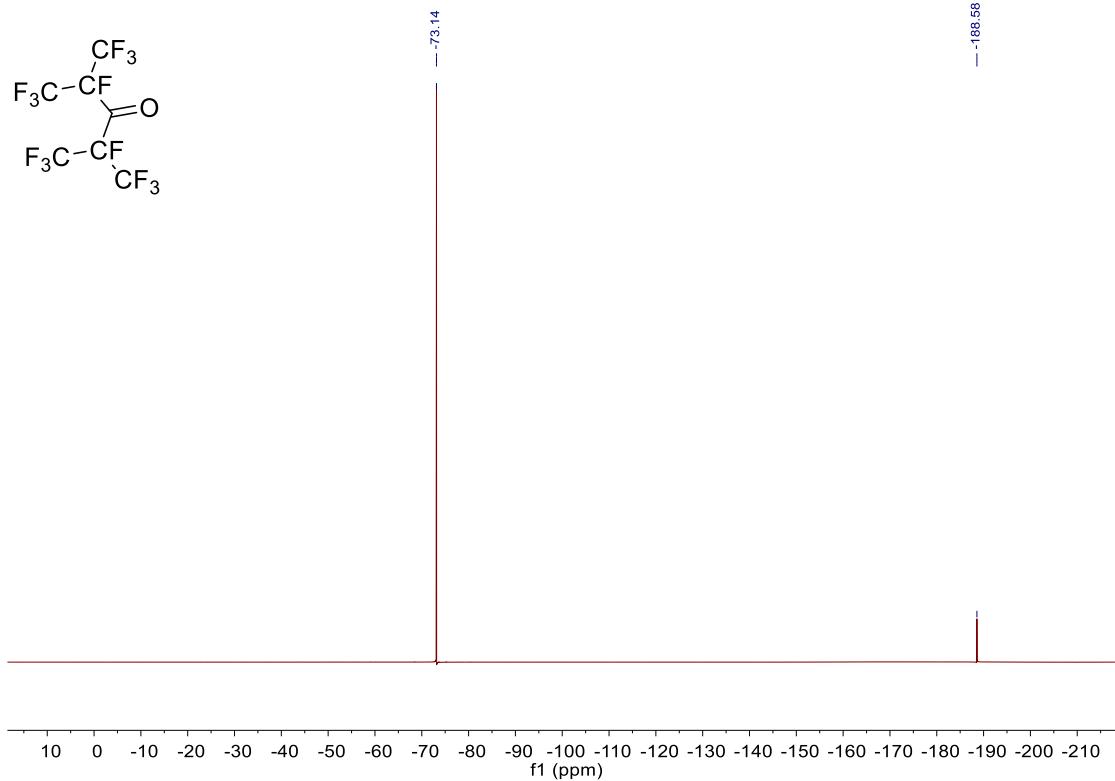


# Supporting Information

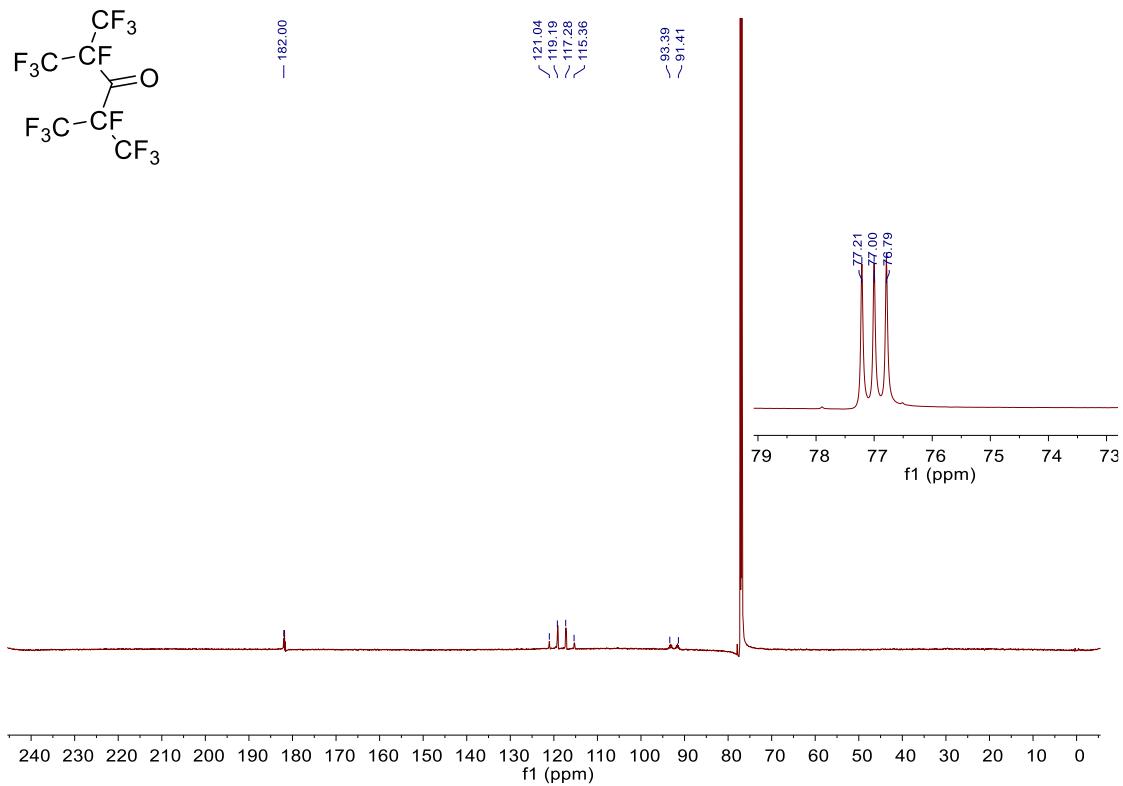
## **Novel and Efficient Synthesis of Insulating Gas- Heptafluoroisobutyronitrile from Hexafluoropropylene**

Zhanyang Gao,<sup>a</sup> Min Wang,<sup>a</sup> Shiya Wang,<sup>a</sup> Yi Wang,<sup>a</sup> Ruichao Peng,<sup>a</sup> Ping Yu,<sup>a</sup> Yunbai Luo<sup>\*a</sup>

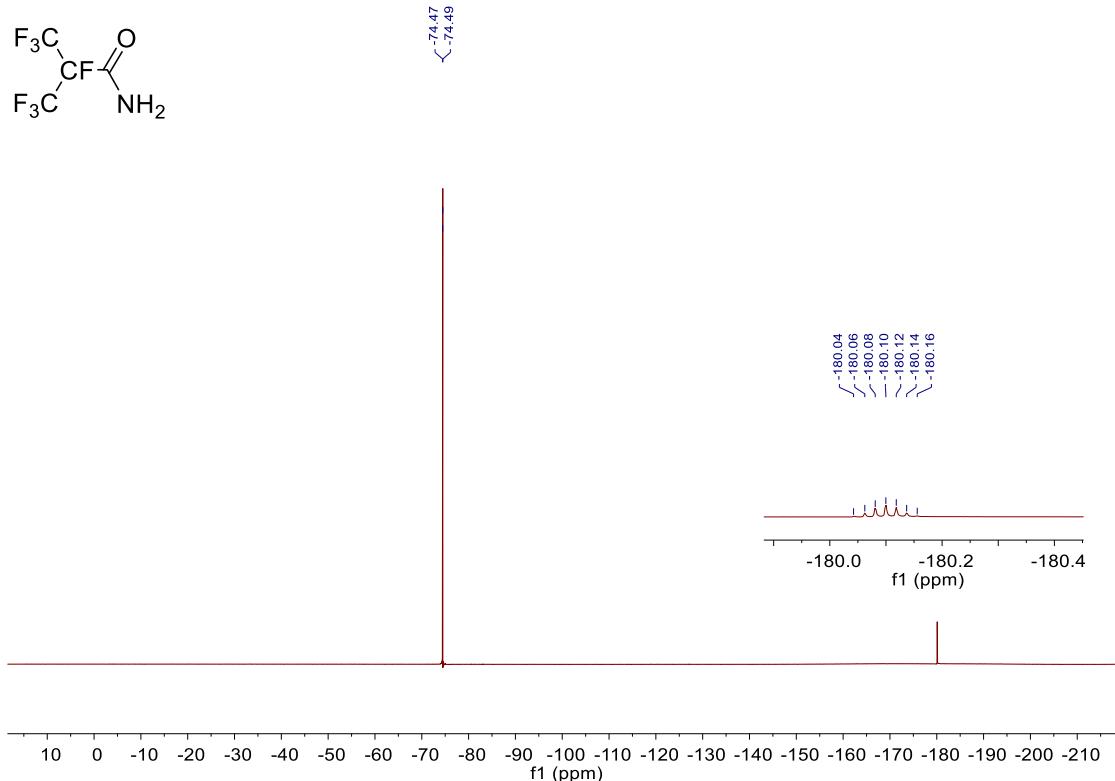
<sup>a</sup>. Engineering Research Center of Organosilicon Compounds & Materials, Ministry of Education, College of Chemistry and Molecular Sciences, Wuhan University, Wuhan, 430072, P. R. China



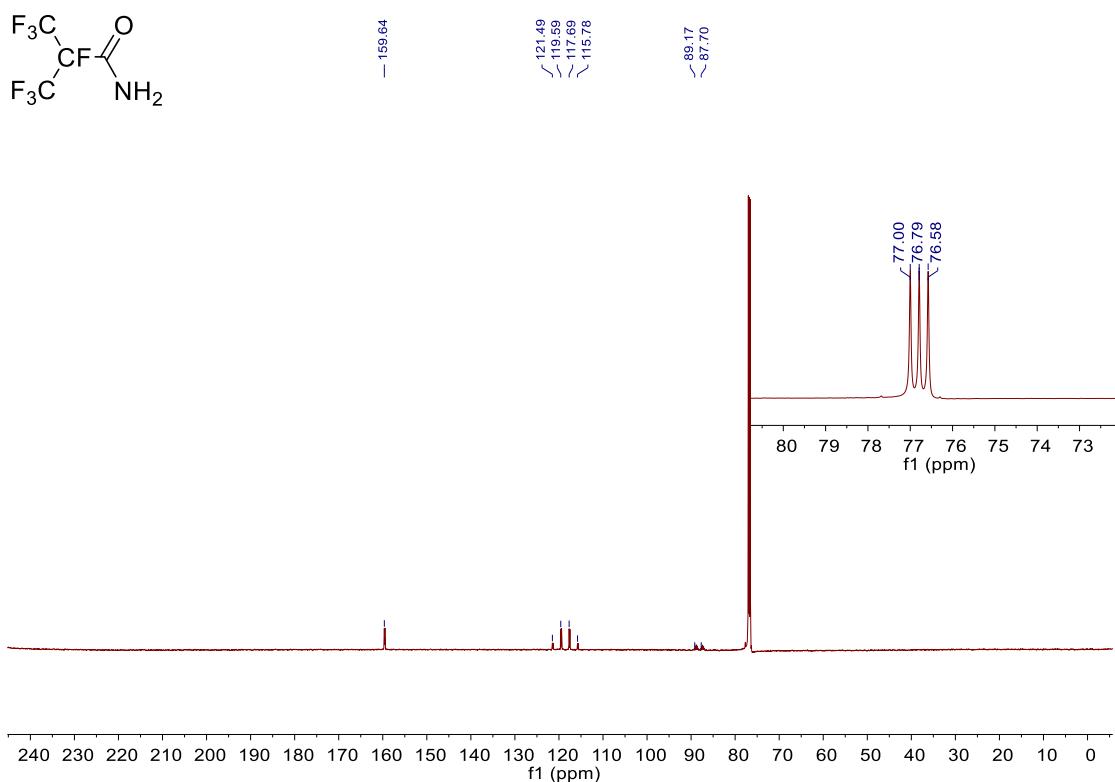
**Figure S.1.**  $^{19}\text{F}$  NMR ( $\text{CDCl}_3$  376 MHz) of bis-(perfluoroisopropyl) ketone



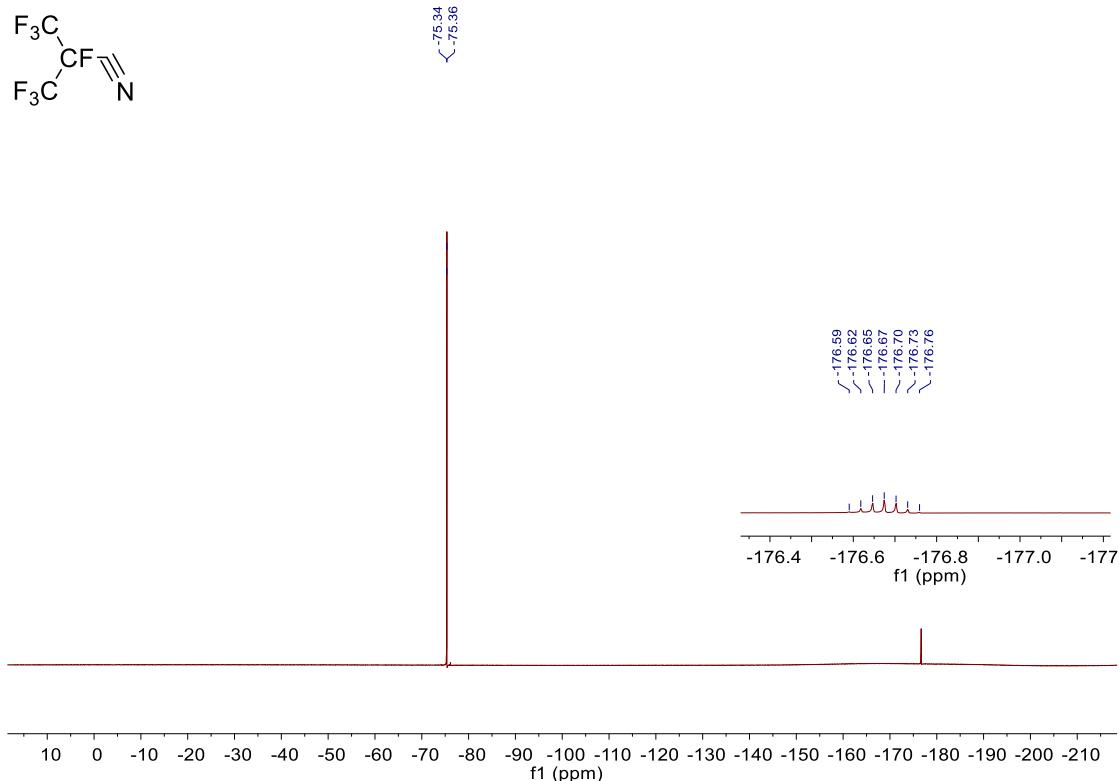
**Figure S.2.**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$  126 MHz) of bis-(perfluoroisopropyl) ketone



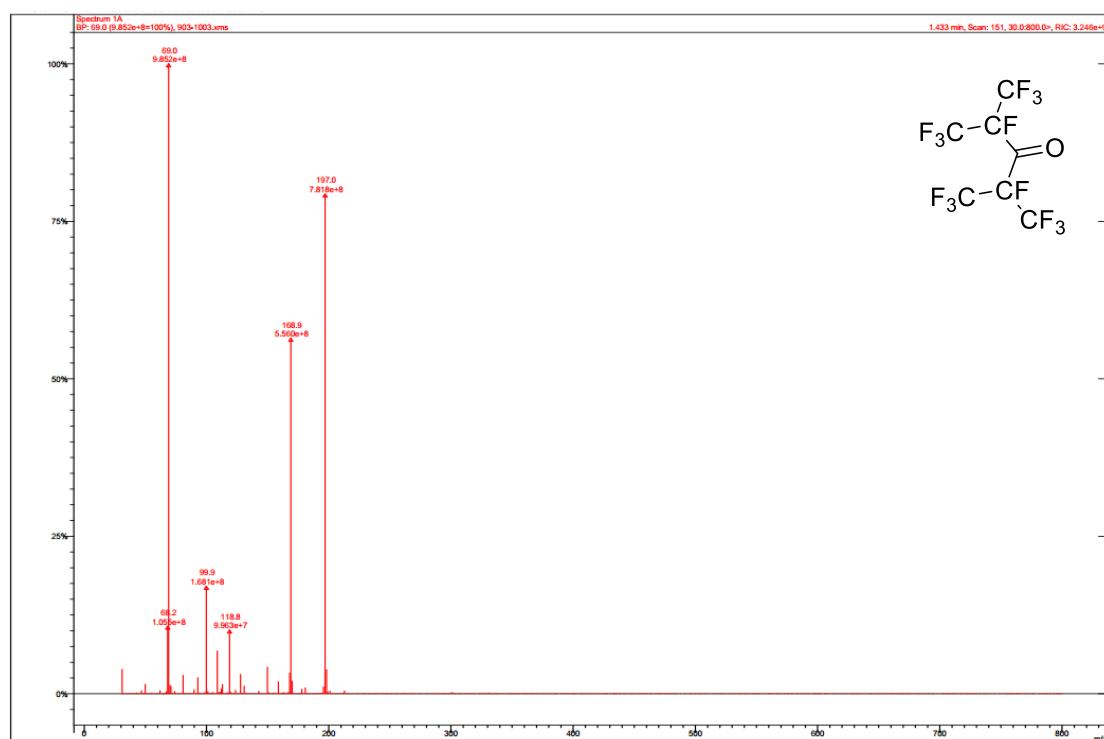
**Figure S.3.** <sup>19</sup>F NMR (CDCl<sub>3</sub> 376 MHz) of heptafluoroisobutyramide



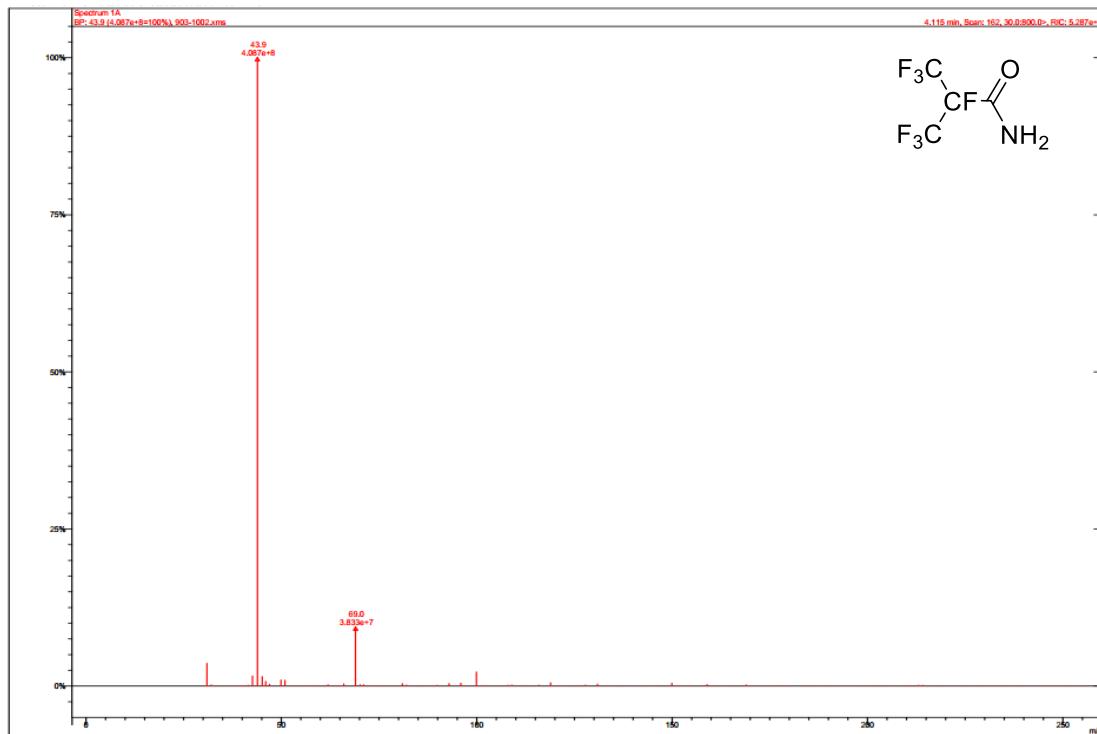
**Figure S.4.** <sup>13</sup>C NMR (CDCl<sub>3</sub> 126 MHz) of heptafluoroisobutyramide



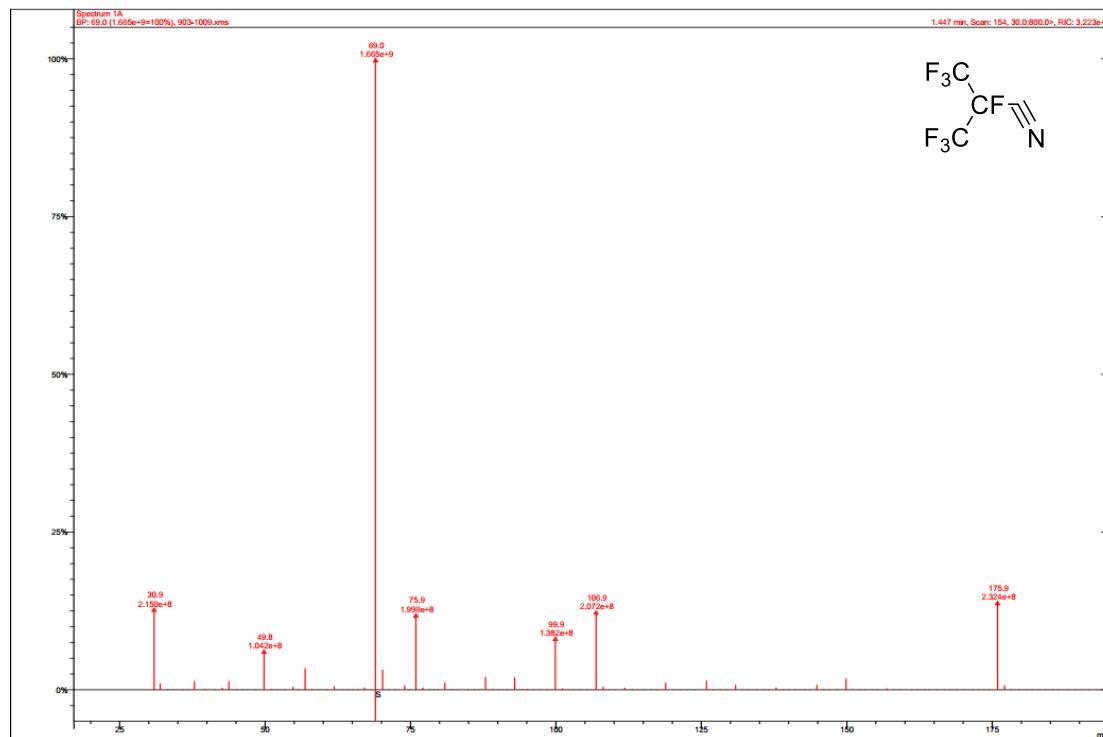
**Figure S.5.**  $^{19}\text{F}$  NMR ( $\text{CDCl}_3$ , 376 MHz) of heptafluoroisobutynitrile



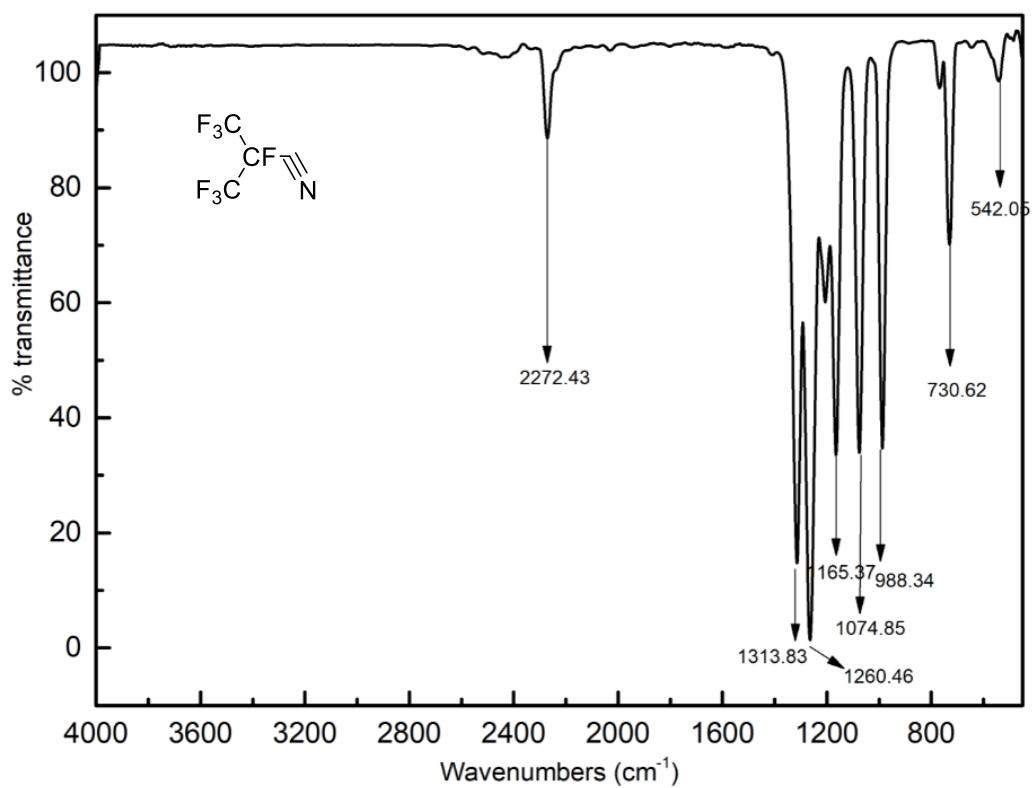
**Figure S.6.** EI/MS of bis-(perfluoroisopropyl) ketone



**Figure S.7.** EI/MS of heptafluoroisobutyramide



**Figure S.8.** EI/MS of heptafluoroisobutyronitrile



**Figure S.9.** FT-IR of heptafluoroisobutyronitrile