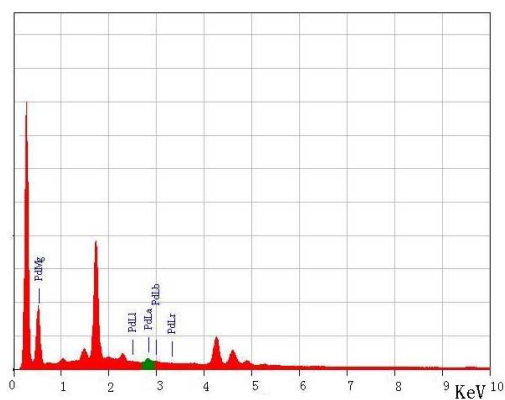


# Supporting information

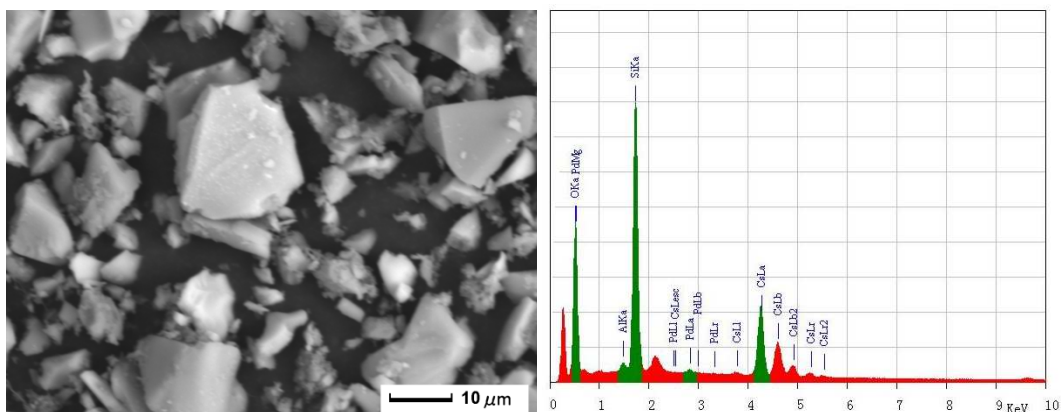
## Table of Contents:

- EDX spectra of fresh catalyst **4** (a)
- SEM image and EDX spectra of catalyst **4** after 4 run recovery (b)
- Infrared spectra of **2** (c)
- Infrared spectra of **3** (d)
- Infrared spectra of neat silica and **4** (e)
- Copies of  $^1\text{H}$  and  $^{31}\text{P}$  NMR spectra of **2** (f)
- Copies of  $^1\text{H}$ ,  $^{31}\text{P}$  and  $^{13}\text{C}$  NMR spectra of **3** (g)

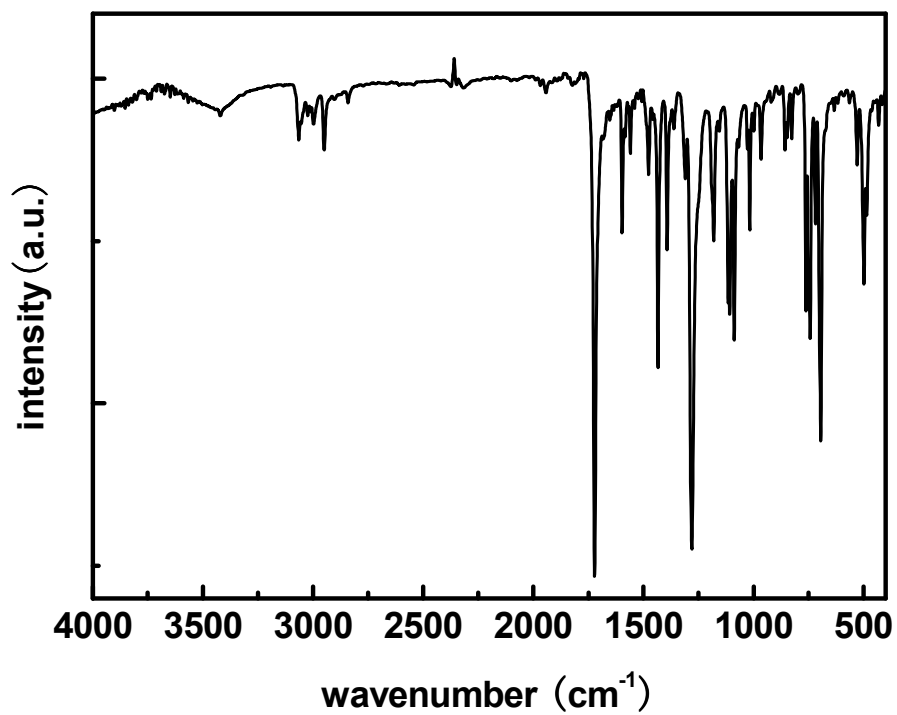
(a)



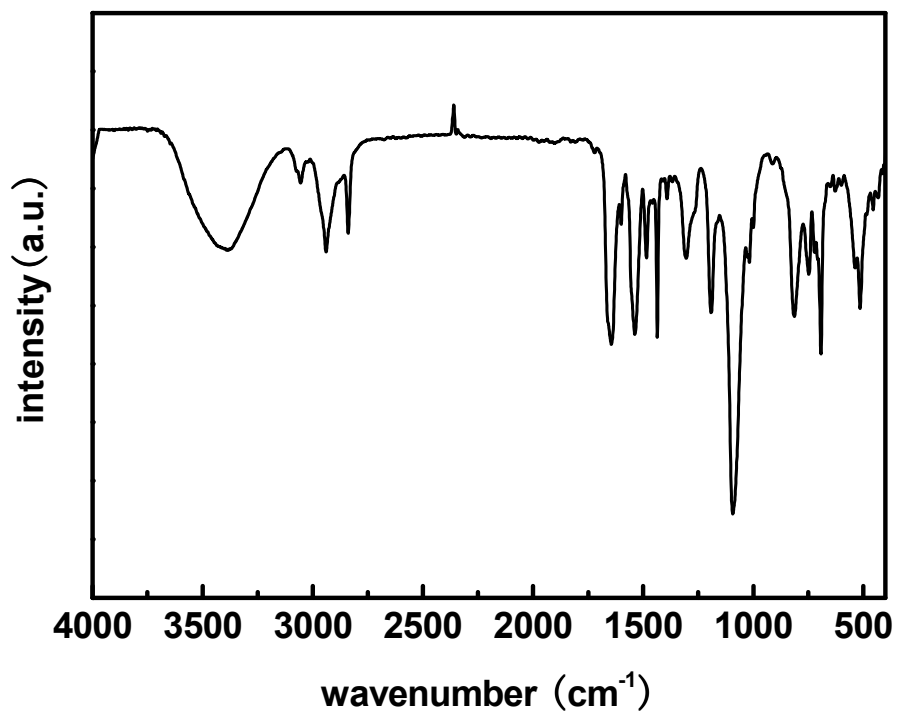
(b)



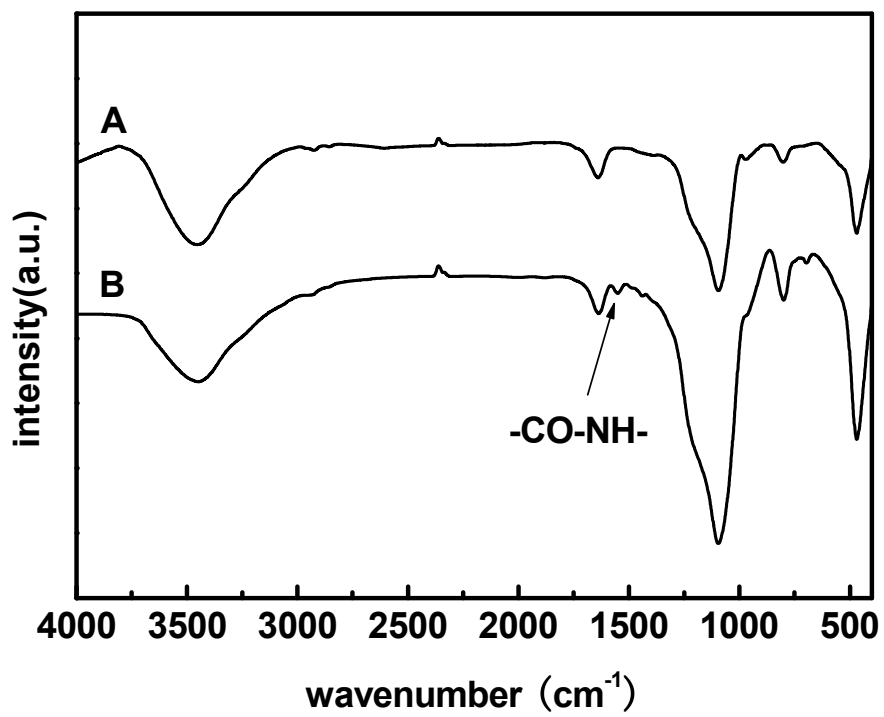
(c)



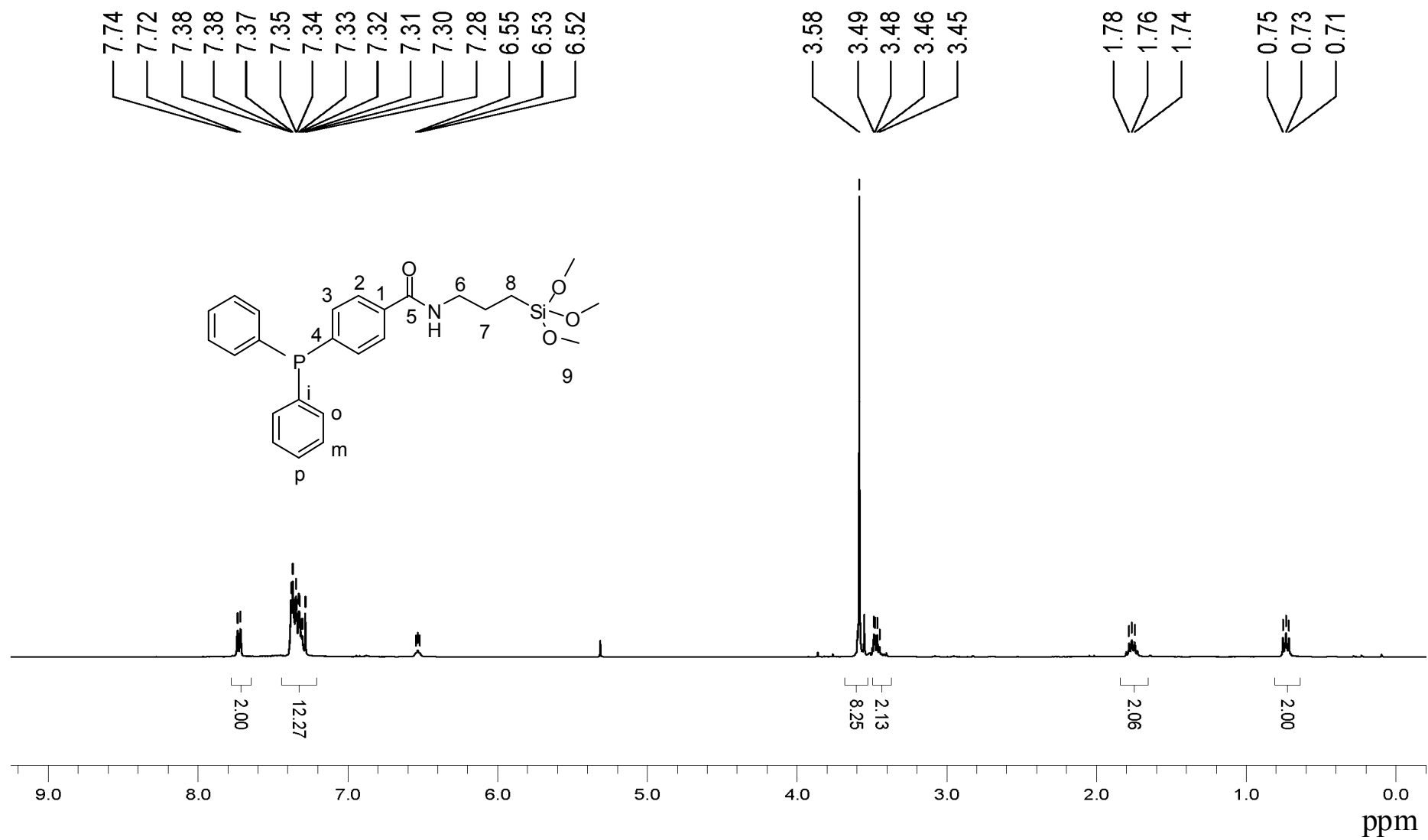
(d)

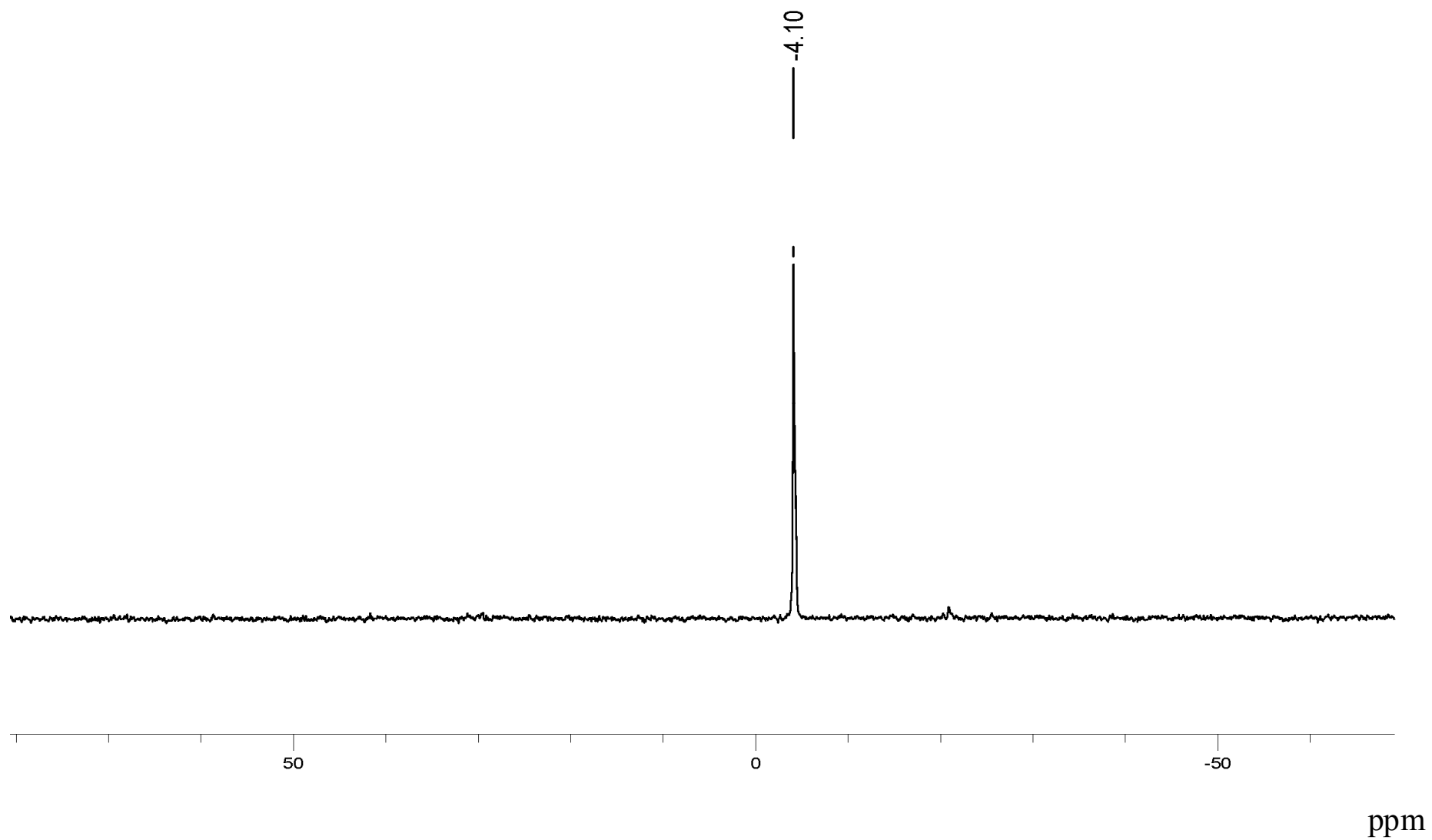


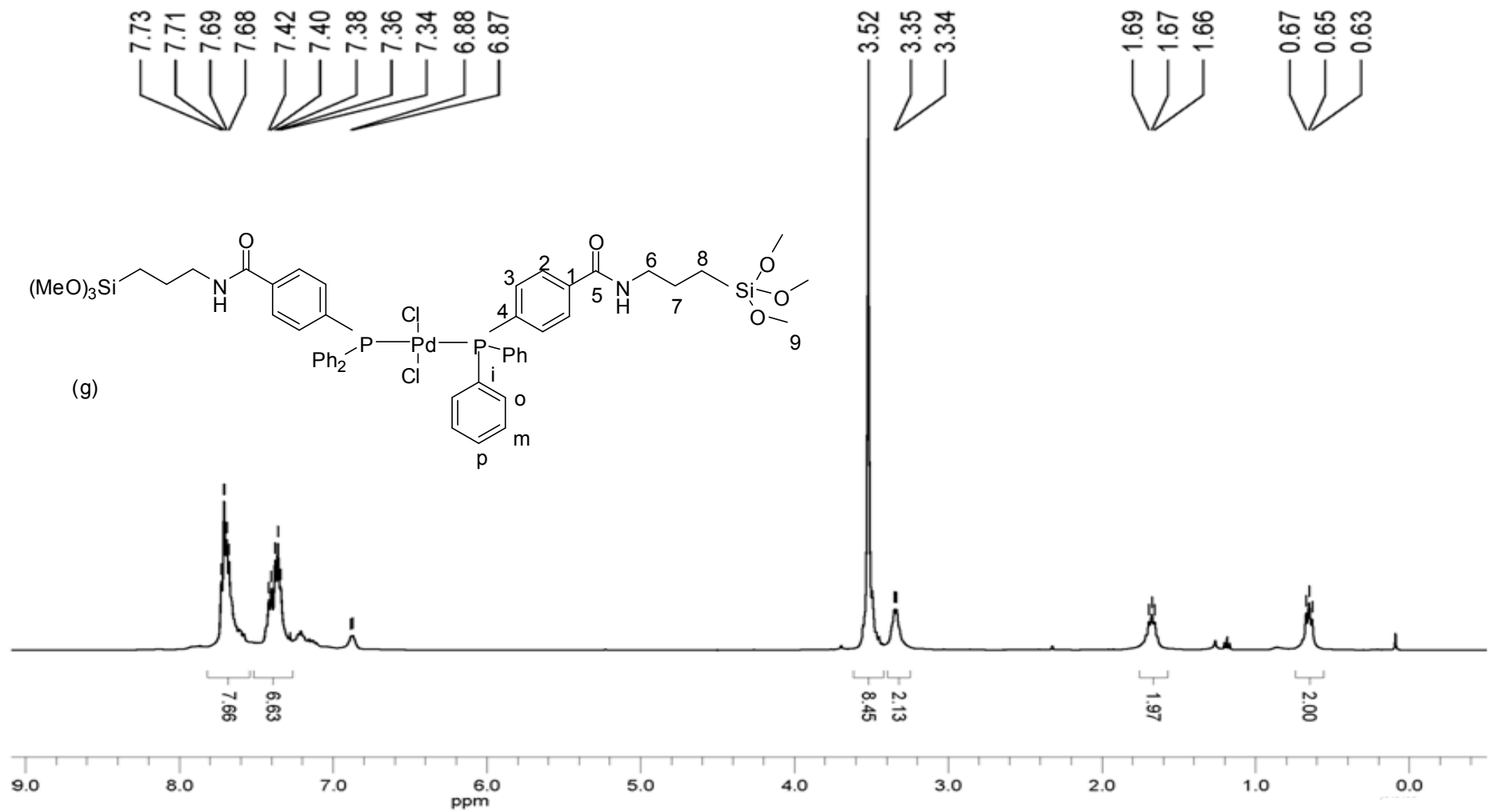
(e)



(f)







ppm

