

## Electronic supplementary information for:

### Synthesis of Dibutyl-trimethylsilanylmethyl-amine and Its Application Towards

#### SO<sub>2</sub> Absorption with Phase Change Behaviors

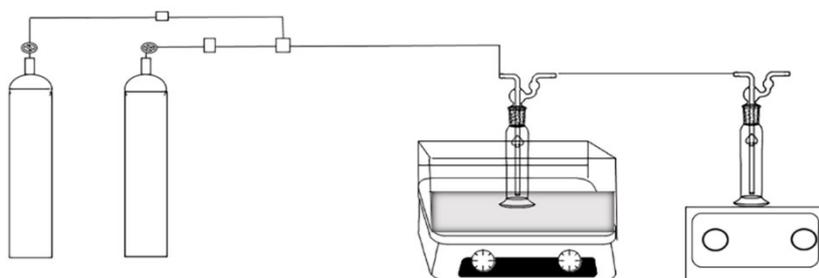


Figure S1. Schematic of platform for SO<sub>2</sub> absorption experiment.

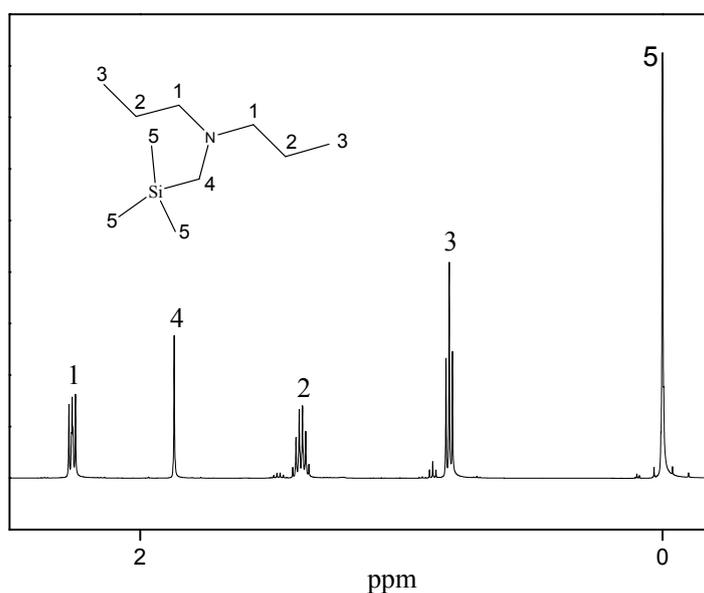


Figure S2. <sup>1</sup>H NMR (600 MHz, CDCl<sub>3</sub>) spectra for the synthesized dipropyl-trimethylsilanylmethyl-amine.

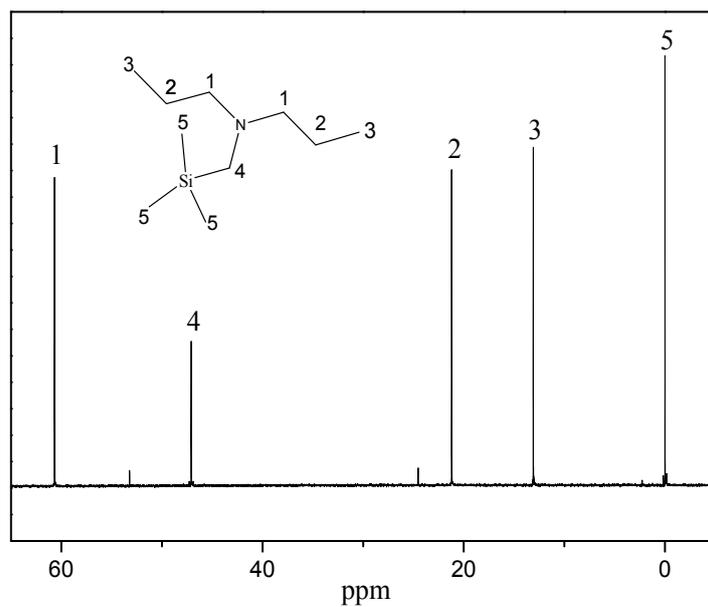


Figure S3. <sup>13</sup>C NMR (600 MHz, CDCl<sub>3</sub>) spectra for the synthesized dipropyl-trimethylsilylmethyl-amine.

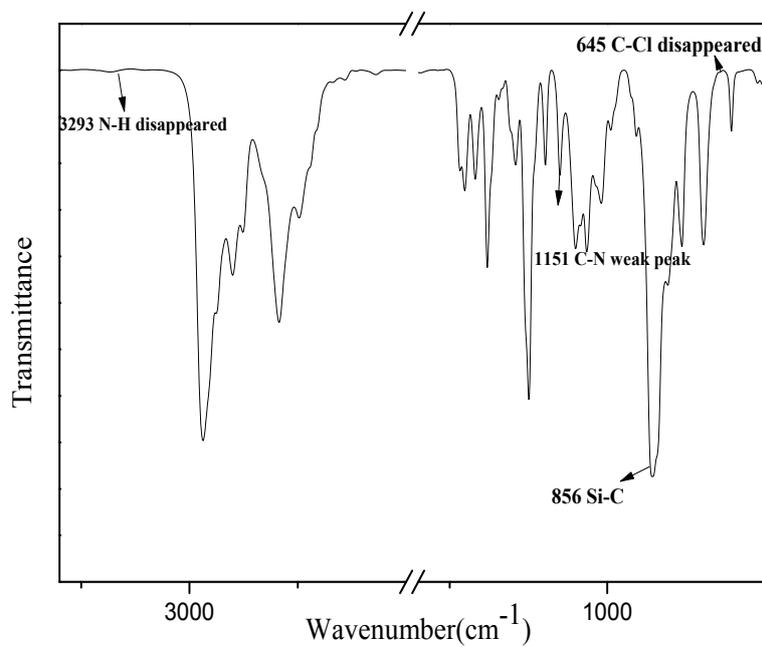


Figure S4. Infrared spectra for the synthesized diethyl-trimethylsilylmethyl-amine.

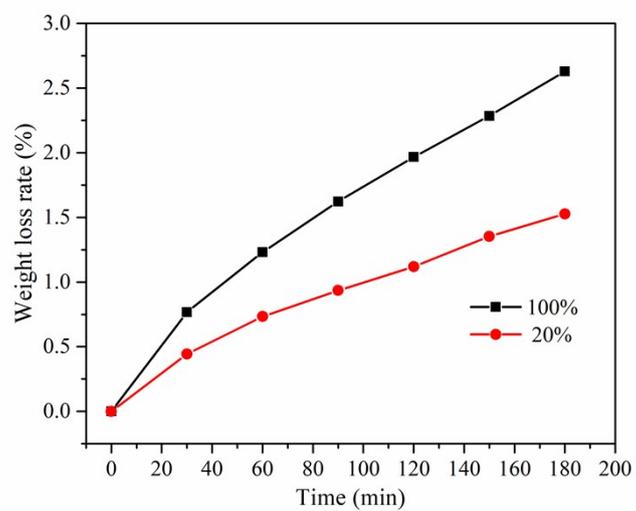


Figure S5. Effects of DTSMAs concentration on the weight loss rate.

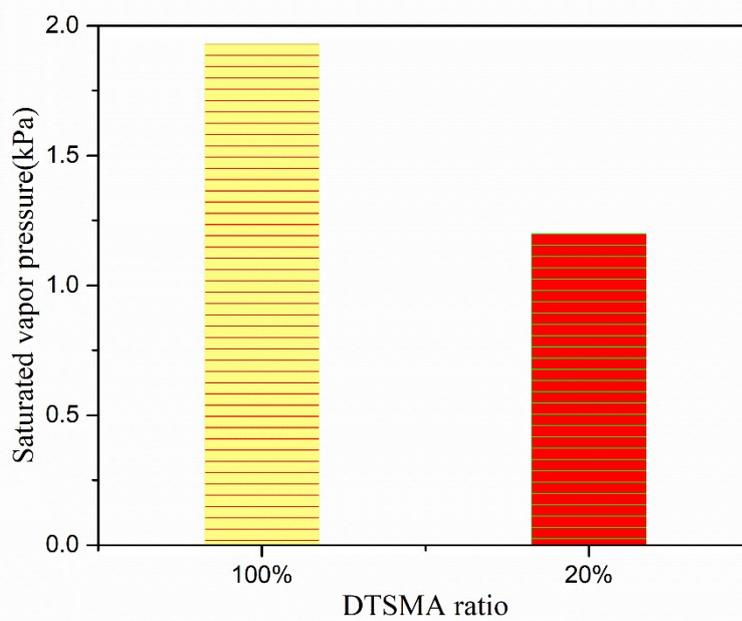


Figure S6. The saturated vapor pressure of the pure absorbent DTSMAs and 20%DTSMAs solution

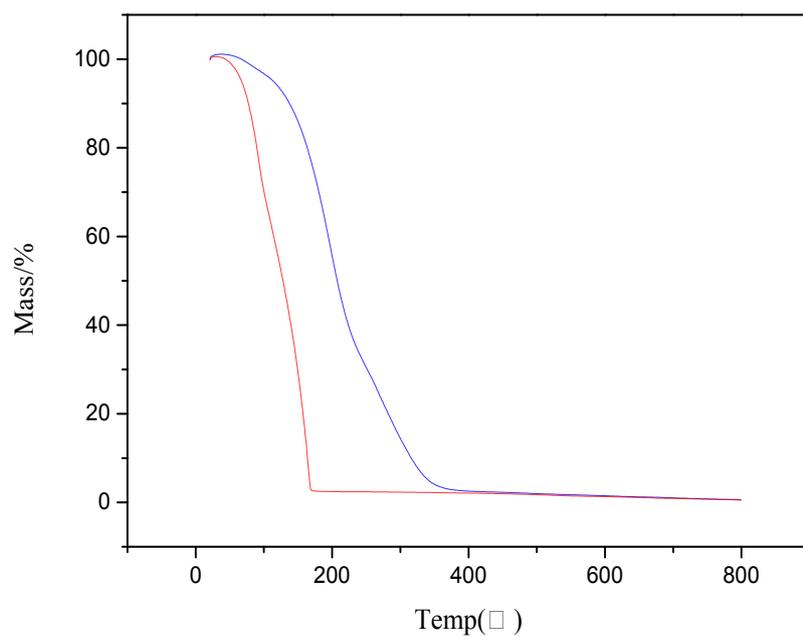


Figure S7. TG curves of the pure DTSMAs and DTSMAs/DSO solution with 60 wt% of DTSMAs.

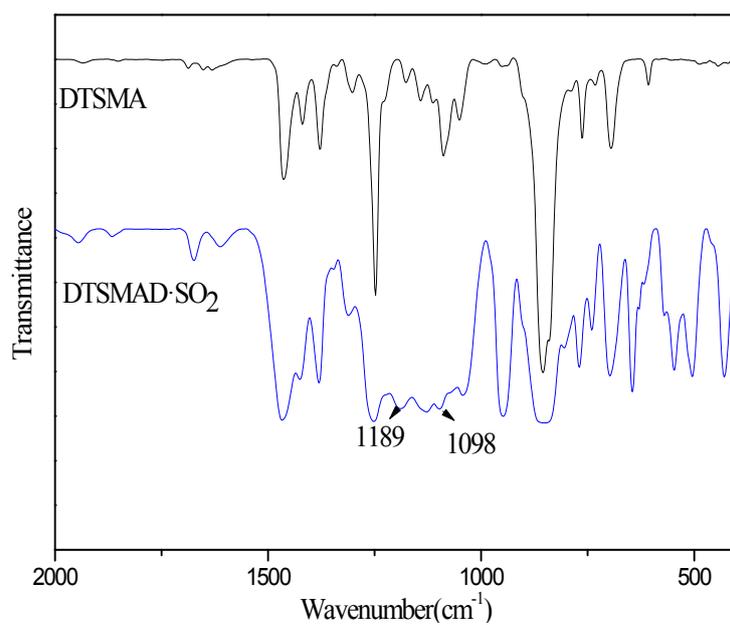


Figure S8. Infrared spectra of the DTSMAs absorbent and the corresponding SO<sub>2</sub> absorption product.