

## Supporting Information

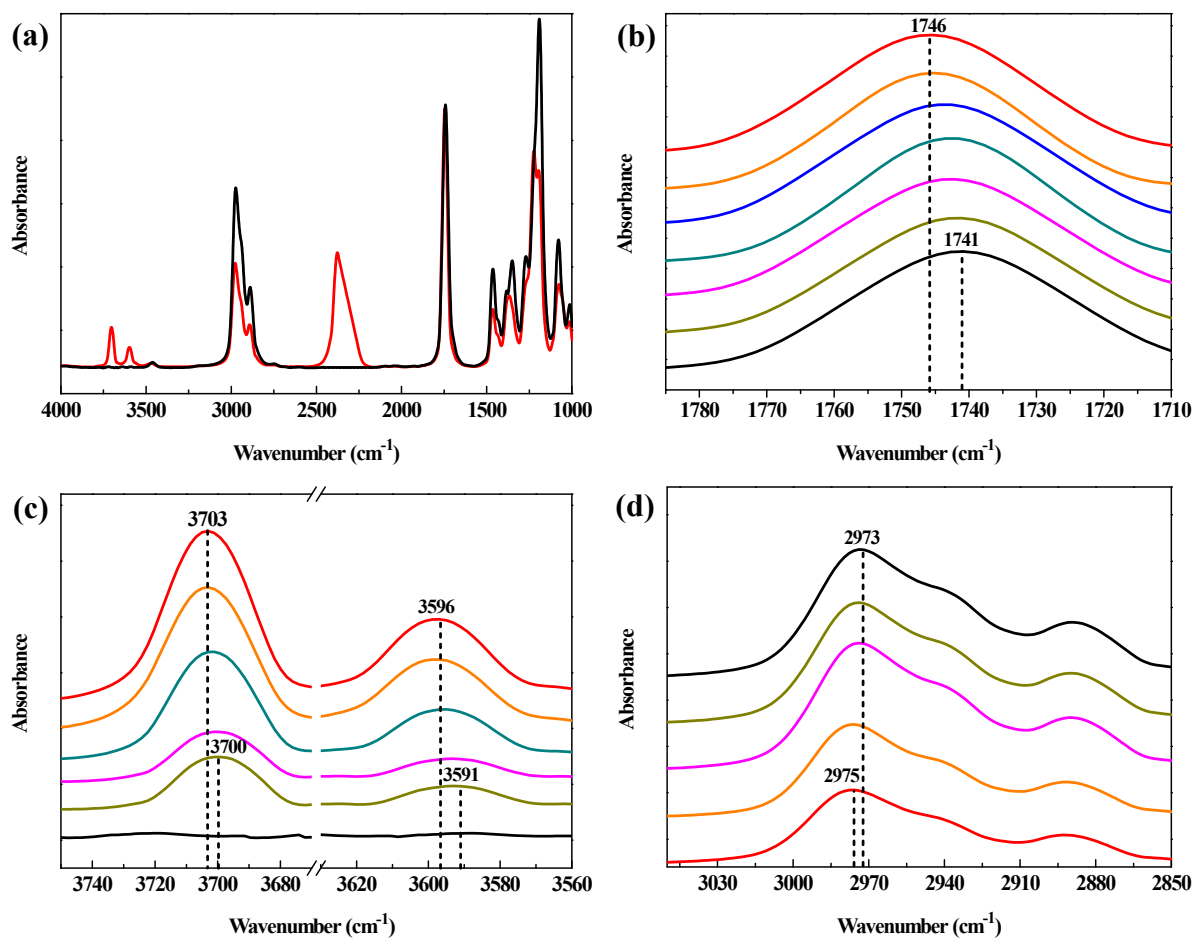
# Investigation on dispersion properties of CO<sub>2</sub> and ester solvents mixtures using *in situ* FTIR spectroscopy

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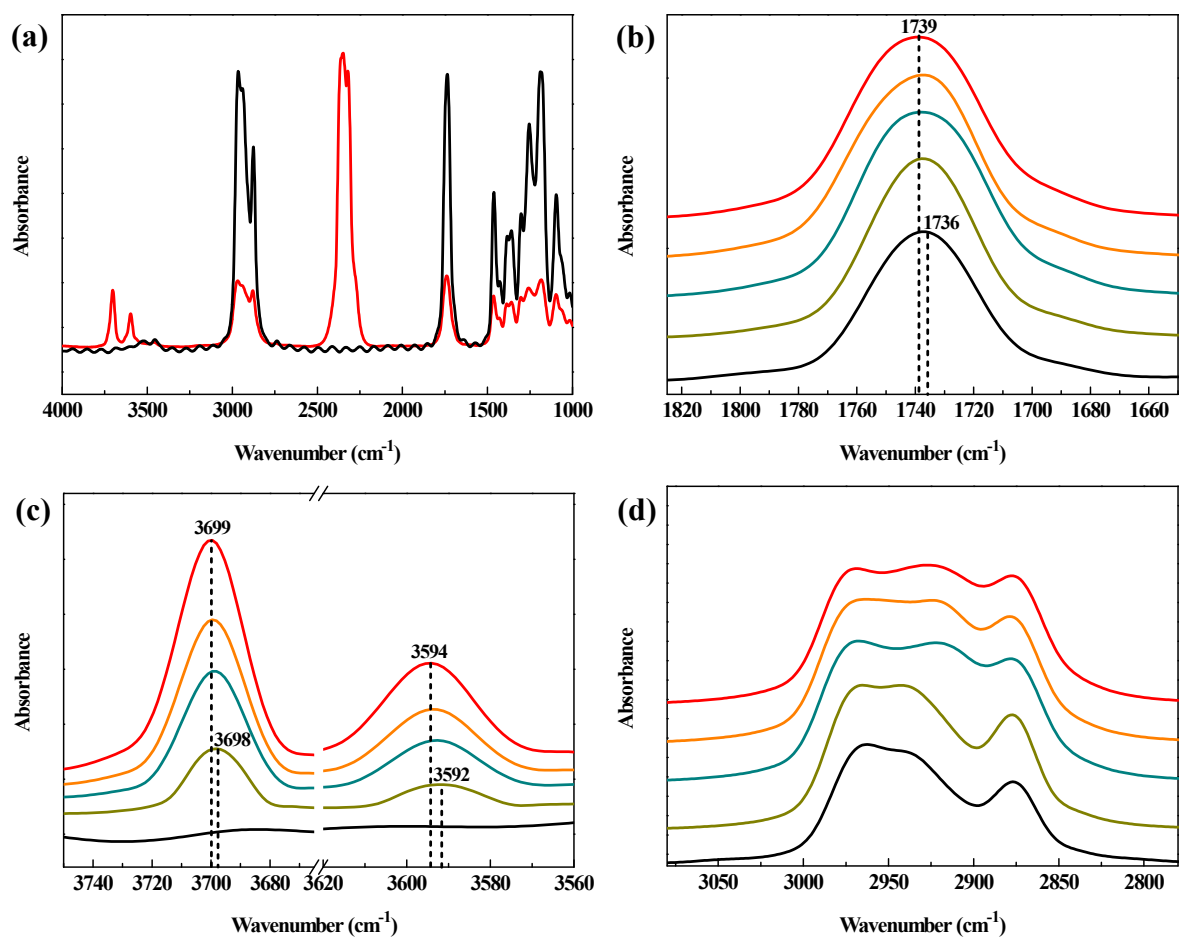
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**Fig. S1.** FTIR spectra of CO<sub>2</sub>-propyl propionate system under different pressure conditions: (a) full spectrum; (b) the  $\nu_{\text{C}=\text{O}}$  region of propyl propionate; (c) the combination modes  $2\nu_2 + \nu_3$  and  $\nu_1 + \nu_3$  regions of CO<sub>2</sub> molecules; (d) the  $\nu_{\text{-CH}_3}$  region of propyl propionate. (—) ambient pressure, (—) 1.72 MPa, (—) 2.75 MPa, (—) 3.71 MPa, (—) 4.85 MPa, (—) 5.83 MPa, (—) 7.39 MPa.



**Fig. S2.** FTIR spectra of CO<sub>2</sub>- butyl butyrate system under different pressure conditions: (a) full spectrum; (b) the  $\nu_{\text{C=O}}$  region of butyl butyrate; (c) the combination modes  $2\nu_2 + \nu_3$  and  $\nu_1 + \nu_3$  regions of CO<sub>2</sub> molecules; (d) the  $\nu_{\text{-CH}_3}$  region of butyl butyrate. (—) ambient pressure, (—) 1.82 MPa, (—) 3.75 MPa, (—) 5.56 MPa, (—) 7.41 MPa.