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Title:Identification of pour point depressant by terahertz time-domain spectroscopy
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Abstract:The frequency-dependent absorption coefficients and refractive indexes of three selected pour point depressants (PPDs) are extracted within the spectral range of 0.2-2.5 THz using terahertz time-domain spectroscopy (THz-TDS). The selected PPDs are also characterized by the middle-infrared spectrum. The experimental results reveal that PPD is more sensitive in the THz range than that in the middle-infrared range. Moreover, the different compositions of PPD can be identified according to their different spectral features in the THz range. Due to its properties of better repeatability, shorter testing time, and easier operation, THz-TDS can be used as a complement for identifying the chemical compositions of PPD.
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