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标题: Determination of the Carbon Nanotube Concentration and Homogeneity in Resin Films by THz Spectroscopy and Imaging
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摘要: We have recorded the concentration dependent extinction coefficient and refractive index of multi-walled carbon nanotubes (MWNT) embedded in a resin fiber matrix using broadband terahertz time domain spectroscopy. The MWNT concentration levels of the samples range from 0.1 to 1 wt%. The good correlation between the measured absolute values of the transmission and the MWNT concentration reconfirms the potential of THz techniques for monitoring the loading levels. Inhomogenieties in the sample lead to strong fluctuations of the detected terahertz signal. We show that THz line scans and THz images, respectively, are therefore well suited to localize and visualize such accumulations.
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