

Optical characteristic for carbon dioxide of
water-insoluble dyes using ion-pairing

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Carbon dioxide indicator films based on the Bromothymol blue, Methyl red and cresol red (indicator materials) and Tetraoctylammonium bromide (phase transfer catalyst) for ion-pairing. Water-insoluble dyes were manufactured using various ratio of toluene and methanol. 30 μm Indicator films were prepared by casting blending solution with polystyrene, polyethyleneimine and ion-pairing materials on slide glass. Scanning electron microscopy(SEM), Digital camera and UV-visible spectrophotometer were employed to characterize the morphology, and optical characteristic change according to composite of the carbon dioxide in air.