A New Development of a Photoacoustic Detector for Microchip-Capillary Electophoresis Using a Simple Pick-up Device

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A novel approach to laser-based non-fluorescence detection was developed for the microchip-CE, utilizing a metallic electromagnetic wave pick-up device. An intensity-modulated laser beam irradiated the microchip, and an acoustic wave was then generated by the periodic thermal expansion. Signals detection was performed by a measurement of the induced electromagnetic wave using a pick-up device. The signal magnitude showed a good linear relationship with the laser power. The acoustic signal displayed a linear dependence on the concentration of the dye sample over a wide range. The separation and detection of dye mixtures was successfully achieved using the new detection method for the microchip-CE.