Development of Microchip for Rapid Pretreatment of Trichloroethylene and Tetrachloroethylene Volatilized from Polluted Soil

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In the field of environmental analysis, microchip technology has many attractive features and is expected to realize the miniaturization of analytical instruments allowing on-site and multipoint monitoring using this technology. We propose a new soil analytical system for detecting trichloroethylene (TCE) and tetrachloroethylene (PCE) using a microchip. The experimental conditions for the pretreatment microchip were optimized. Under the optimized conditions, the detection limits of TCE and PCE were 15 and 9 ppbv, and the determination limits of TCE and PCE were 62 and 72 ppbv, respectively.