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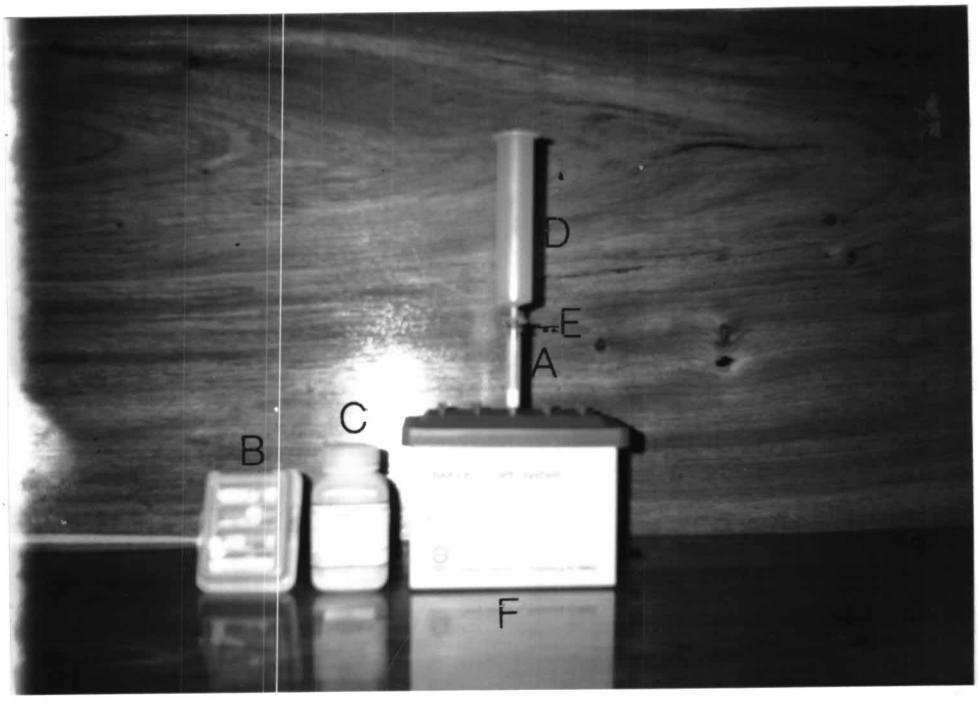
APPENDIX A

The materials used in this SPE technique



A: Disposable colume 4 mL

B: Glassfibre prefilter, diameter 10 mm

C: Octadecyl (C_{18}) bulk packing

D: Reservoir 75 mL

E: Adapter

F: Baker-10 Extraction System

APPENDIX B

The calculated concentration of each metal

For the study of accuracy,

1. 75.0 mL of the synthetic unknown has been pipetted.

2. 100.0 mL of extracted solution has been passed through a cartridge and eluted with 5.0 mL 1.0 M HNO_3.

3. 5.0 mL of eluent was aspirated to a flame AAS. By using the calibration curve of each metal, the concentration of each metal can be calculated.

The concentration for each metal can be calculated according to this simple equation:

$$\text{Conc. of metal in water} = \frac{\text{Conc. (from calibration curve) X final volume}}{\text{pipetted volume}}$$

For the study of accuracy and real water samples, the concentration of each metal from calibration curve (concentration after extraction) can be put in this equation. The concentration of each metal in water can be calculated.

$$\text{Conc.} = \frac{\text{Conc. (from calibration curve) X 5.0 mL}}{\text{75.0 mL}}$$

APPENDIX C

The calculated concentration by concerning with percent recovery

The percentage of recoveries for each of metals which has been calculated in this study are shown as follows:

For Ag 81.05 %, Cd 89.41 %, Cu 100.86 %, Ni 98.62 %, and Pb 83.57 %.

Example, the calculated concentration of Ag for the study of accuracy (direct calculation by using a calibration curve) is 0.1109 ppm. The concentration concerned with percent recovery can be calculated by using this equation:

$$\text{Conc.} = \frac{\text{Conc. (direct cal.) X 100}}{\text{percent recovery}}$$

$$\text{Conc.} = \frac{0.1109 \text{ ppm X } 100\ \%}{81.05\ \%} = 0.1368 \text{ ppm}$$

The other metals can be calculated by using above equation.

VITA

Miss Chandrladda Chotratanadilok was born on October 25, 1965 in Bangkok. She recieved her Bachelor Degree of Science (Chemistry) from Faculty of Science, Chulalongkorn University in 1988. Since 1989, She has been a graduate student studying Analytical Chemistry in Chulalongkorn University. She was supported by Professor Dr. Buares Kamthong scholarships in 1990 to 1991, teacher assistantship by Graduate School in 1991, The University Development Commission scholarship in 1991 to 1992 and recieved a research grant for her Master degree's Thesis from the Graduate School of Chulalongkorn University in 1992.