

## REFERENCES

- An, Y.J. and Campbell, D.H. 2003. Total, dissolved, and bioavailable metals at Lake Texoma marinas, *Environmental Pollution*. 340:213-230.
- Anthemidis, A.N., Zachariadis, G.A., Stratis, J.A. 2001. On-line solid phase extraction system using PTFE packed column for the flame atomic absorption spectrometric determination of copper in water samples, *Talanta*. 54: 935-942.
- Baeyens, W., Elskens, M., Gillain, G., Goeyens, L. 1998a. Biogeochemical behaviour of Cd, Cu, Pb and Zn in the Scheldt estuary during the period 1981-1983, *Hydrobiologia*. 366:15-44.
- Baeyens, W., Parmentier, K., Goeyens, L., Ducastel, G., De Gieter, M., Leermakers, M. 1998b. The Biogeochemical behaviour of Cd, Cu, Pb and Zn in the Scheldt estuary: results of the 1995 surveys, *Hydrobiologia*. 366: 45-62.
- Beaty, R.D. and Kerber, J.D. 1993. *Concepts, Instrumentation and Techniques in Atomic Absorption Spectrometry*, Unitate States of America: The Perkin-Elmer Corporation.
- Bott, A.W. 1995. Voltammetric determination of trace concentrations of metal in the environment. *Current Separation*. 14: 24-30.
- Boyle, E. A. and Edmond, J. M. 1977. Determination of Copper, Nickel, and Cadmium in Sea Water by APDC Chelate Coprecipitation and Flameless Atomic Absorption Spectrometry, *Analytical Chimica Acta*. 91: 189-197.
- Bruland, W. K. and Franks, P.R. 1979. Sampling and analytical methods for the determination of copper, cadmium, zinc and nickel at the nanogram per liter level in sea water, *Analytica chimica Acta*. 105: 233-245.
- Burns, W.A., Mankiewicz, P.J., Bence, A.E., Page, D.S. and Parker, K.R. 1997. A principal component and least squares method for allocating polycyclic aromatic hydrocarbons in sediment to multiple sources, *Environmental Toxicology and Chemistry*. 16: 1119-1131.
- Burton, J.D. and Liss, P.S. 1976. *Estuarine Chemistry*. London: Academic Press.

- Burton, J.D., Althaus, M., Millward, G.E., Morris, A.W., Statham, P.J., Tappin, A.D. and Turner, A. 1993. Process influencing the fate of trace metals in the North Sea, *Philosophical Transactions of the Royal Society of London Series A*. 343: 557-568.
- Buakaew, Y. 2005. Accumulation of Nitrogen and Phosphorus in Songkhla Lake Sediment, M.Sc. Thesis, Faculty of Environmental Management, Prince of Songkla University, Thailand.(in Thai)
- Cabon, J.Y. 2005. Improvement of direct determination of Cu and Mn in seawater by GFAAS and total elimination of the saline matrix with the use of hydrofluoric acid, *Talanta*. 65: 402-407.
- Cambell, J.A., Whitelaw, K., Riley, J.P., Head,P.C., Jones, P.D. 1988. Contrasting behaviour of dissolved and particulate nickel and zinc in a polluted estuary, *Science Total Environment*. 71: 141-155.
- Camel, V. 2003. Solid phase extraction of trace elements, A review. *Spectrochimica Acta Part B*. 58: 1177-1233.
- Centi, R.M. and Martin, J.M. 2004. Concentration and fate of trace metals in Mekong River Delta, *Science of the the Total Environment*. 332:167-182
- Chakraborti, D., Adams, F., Mol, W. V. and Irgolic, K. J. 1967. Determination of Trace Metals in Natural Waters at Nanogram Per Literlevels by Electrothermal Atomic Absorption Spectrometry after Extraction with Sodium Diethyldithiocarbamate, *Analytica Chimica Acta*. 196: 23-31.
- Chan, M.S. and Huang, S.D. 2000. Direct determination of cadmium and copper in seawater using a transversely heated graphite furnace atomic absorption spectrometer with Zeeman-effect background corrector, *Talanta*. 51: 373-380.
- Chester, R. 1990. Marine Geochemistry. London: Chapman & Hall.
- Chiffolleau, J.F., Cossa, D., Auger, D. and Truquet, I. 1994. Trace metal distribution, partition and fluxes in the Seine estuary (France) in low discharge regime, *Marine Chemistry*. 47: 145-158.
- Comber, S. D. W., Gunn, A. M. and Whalley, C. 1995. Comparison of the Partitioning of Trace Metals in the Humber and Mersey Estuaries, *Marine Pollution Bulletin*. 30(12): 851-860.

- Copeland, T. R. and Skogerboe, R. K. 1974. Anodic stripping voltammetry, *Analytical Chemistry*. 46: 1257A-1268A.
- Danielsson, L.-G., Magnusson, B., Westerlund, S. and Zhang, K. 1982. Trace 3 metal determination in estuarine waters by atomic absorption spectrometry after extraction of dithiocarbamate complexes into freon, *Analytica Chimica Acta*. 144: 183-188.
- Dyrssen, D and Wedborg, M. 1980. Major and Minor Elements, Chemical Speciation in Estuarine Waters. In: Olausson, E. and Cato, I. (Eds.), Chemistry and Biogeochemistry of Estuaries. New York: John Wiley & Sons.
- Duinker, J.C. 1980. Suspended Matter in Estuaries: Adsorption and Desorption Processes. In: Olausson, E. and Cato, I. (Eds.), Chemistry and Biogeochemistry of Estuaries. New York: John Wiley & Sons.
- Elbaz-Poulichet, F., Garnier, J.-M., Guan, D. M., Martin, J.-M. and Thomas A. J. 1996. The Conservative Behaviour of Trace Metals (Cd, Cu, Ni and Pb) and As in the Surface Plume of Stratified Estuaries: Example of the Rhône River (France), *Estuarine, Coastal and Shelf Science*. 42: 289-310.
- Fairbridge, R.W. 1980. The Estuary: Its definition and geodynamic cycle. In: Olausson, E. and Cato, I. (Eds.), Chemistry and Biogeochemistry of Estuaries. New York: John Wiley & Sons.
- Fergusson, J.E. 1991. The Heavy Elements, pp.243-327. New York: Pergamon Press.
- Freeze, R.A. and Cherry, J.A. 1979. Ground water, pp. 5, 218-219. New Jersey: Prentice Hall, Englewood.
- Florence, T. M. 1986. Electrochemical approaches to trace element speciation in water, A review. *Analyst*. 111: 489-505.
- Gumgum, B., Unlu, E., Tez, Z. 1994. Heavy metal pollution in water, sediment and fish from the Tigris River in Turkey, *Chemosphere*. 29: 111-116.
- Hungspreugs, M., Utoomprukporn, W., Sanidvong,A. and Ratanachongkiat, S. 1998. A comparative study of trace metal contamination in the Mekong Delta and the Chaopraya Estuary. International Workshop on the Mekong Delta, 23-27 Feubuary 1998, The Golden Triangle Chiang Rai, Thailand, 150-168.
- Johnson, R.A. and Wichern, D.W. 1992. Applied multivariate statistical analysis, pp. 356-492. 3<sup>rd</sup> ed. London: Prentice Hall.

- Jungsriruntanakun, V. 2001. Trace metals in interstitial waters from Estuarine sediment: Sub-sampling in simple constructed nitrogen chamber. M.Sc. Thesis, Faculty of Science, Prince of Songkla University, pp. 13. (in Thai)
- Karadede, H., and Unlu, E. 2000. Concentrations of some heavy metals in water, sediment and fish species from the Ataturk Dam Lake (Euphrates), Turkey, *Chemosphere*. 41: 1371-1376.
- Kinrade, J.D. and Van Loon, J.C. 1974. Solvent Extraction for use with Flame Atomic Absorption Spectrometry, *Anal.Chem.* 46: 1894-1898.
- Landing, W.M. , Haraldsson, C. and Paxeus, N. 1996. Vinyl polymer agglomerate based transition metal cation chelating ion-exchange resin containing the 8-hydroxyquinoline functional group, *American Chemical Society*. 58: 3031-3035.
- Laxen, D.P.H. and Harrison, R.M. 1983. Physicochemical speciation of selected metals in the treated effluent of a lead-acid battery manufacturer and in the receiving river, *Water Research*. 17: 71-80.
- Lee, G.F. 1975. Role of hydroxous metal oxides in the transport of heavy metals in the environment. In: Krenkel, P.A. (Ed.), Heavy metals in the aquatic environment. Oxford: Pergamon Press.
- Libes, S.M. 1992. An introduction to marine biogeochemistry, pp. 30, 168-169. New York: John Wiley & Sons.
- Liss, P.S. 1976. Conservative and non-conservative behavior of dissolved constituents during estuarine mixing. In: Burton, J.D. and Liss, P.S. (Eds.), Estuarine Chemistry. New York: Academic Press.
- Liu, Y. P., Millward, G. E. and Harris, J. R. W. 1998. Modelling the Distributions of Dissolved Zn and Ni in the Tamar Estuary Using Hydrodynamics Coupled with Chemical Kinetics, *Estuarine, Coastal and Shelf Science*. 47: 535-546.
- Loring, D. H. and Rantala, R. T. T. 1992. Manual for the geochemical analyses of marine sediments and suspended particulate matter, *Earth-Science Reviews*. 32: 235-283.

- Lui, Z.S. and Huang, S.D. 1995. Determination of lead in sea-water with a graphite furnace atomic absorption spectrometer and an improved automatic on-line preconcentration system, *Spectrochimica Acta.* 50B(2): 197-203.
- Mackey, D. J., O'Sullivan, J. E., Watson, R. J. and Pont, G. D. 1997. Interference effects in the extraction of trace metals from estuarine waters, *Marine Chemistry.* 59: 113-126.
- Martin, J. H. and Whitfield, M. 1983. The significant of the river input of chemical elements to the ocean, in: Wong, C. S., Boele, E., Bruland, K. W., Burton, J. D. and Goldberg, E. D. (Eds.) Trace metals in sea water, New York: Plenum Press. pp. 265-278.
- Martin, J.M., Guan, D.M., Elbaz-Poulichet, F., Thomas, A.J. and Gordeev, V.V. 1993. Preliminary assessment of the distributions of some trace elements ( As, Cd, Cu, Ni, Pb and Zn) in a pristine aquatic environment: the Lena River estuary ( Russia), *Marine Chemistry.* 43: 185-199.
- Martin, J.M. and Windom, H.L. 1991. Present and future roles of ocean margins in regulating marine biogeochemical cycles of trace elements.In: Mantoura, R.F.C., Martin, J.M. and Wollast, R. (Eds), Ocean Margin Processes in Global Change. Wiley, New York, pp. 45-67.
- Mason, A.Z. and Jenkins, K.D. 1995. Metal Detoxication in Aquatic Organism. In: Tessier, A. and Turner, D.R. (Eds.), Metal Speciation and Bioavailability in Aquatic System. New York: John Wiley & Sons.
- Munksgaard, N.C. and Parry, D.L. 2001. Trace metals, arsenic and lead isotopes in dissolved and particulate phases of North Australian coastal and estuarine seawater, *Marine chemistry.* 75: 84-165.
- Nguyen, H.L., Leermakers, M., Osan, J., Torok, S. and Baeyens, W. 2005. Heavy metals in Lake Balaton: water column, suspended matter, sediment and biota, *Science of the Total Environment.* 340: 213-230.
- Owen, R.E. and Ball, P.W., 1997. Dissolved Trace Metals in the Tay Estuary, *Estuarine, Coastal and Shelf Science.* 44: 421-434.
- Ozman, H., Kulahci, F., Cukurovali, A., Dogro, M. 2004. Concentrations of heavy metal and radioactivity in surface water and sediment of Hazar Lake (Elazig, Turkey), *Chemosphere.* 55: 401-408.

- Paucot, H. and Wollast, R. 1997. Transport and transformation of trace metals in the scheldt estuary, *Marine Chemistry*. 58: 229-244.
- Pesavento, M. , Biesuz, M., Baffi, F. and Gnecco, C., 1999. Determination of metal ions concentration and speciation in seawater by titration with an iminodiacetic resin, *Analytica Chimica Acta*. 401: 265-276.
- Regional Environmental Office 16, Ministry of Natural Resource and Environment. 2006. Water Quality. Songkhla.
- Regnier, P., Hoenig, M., Chou, L. and Wollast, R. 1990. Trace metals in the suspended matter collected in the mixing zone of the Rhone estuary, Water Pollution Reserch.Rep. 20: 385-396.
- Roux, L.L., Roux, S. L. and Appriou, p. 1998. Behaviour and Speciation of Metallic Species Cu, Cd, Mn and Fe During Estuarine Mixing, *Marine Pollution Bulletin*. 36 (1): 56-64.
- Salomons, W. 1980. Adsorption process and hydrodynamic conditions in estuaries, *Enviromenmtal Technology Letter*. 2:356-365.
- Schlemmer, G. and Radziuk, B. 1999. *Analytical Graphite Furnace Atomic Absorption Spectrometry: A Laboratory Guide*, 286 pp. Germany: Bodenseewerk Perkin-Elmer GmbH, Überlingen
- Shafer, M.M., Overdier, J.T., Hurley, J.P., Armstrong, D. and Webb, D. 1997. The influence of dissolved organic carbon, suspended particulates, and hydrology on the concentration, partitioning and variability of trace metals in two contrasting Wisconsin watersheds (USA), *Chemical Geology*. 136: 71-97.
- Shine, J.P., Ika, R.V. and Ford, T.E. 1995. Multivariate statistical examination of spatial and temporal patterns of heavy metal contamination in New Bedford Harbor marine sediments, *Environmental Science Technology*. 29: 1781-1788.
- Sirinawin, W.; Turner, D.R.; Westerlund, S. and Kanatharana, P. 1998. Trace metals study in the Outer Songkhla Lake, Thale Sap Songkhla, a southern Thai Estuary, *Marine Chemistry*. 62: 175-183.
- Sirinawin, W. 1999. Studies of trace metal cycling in natural waters, Ph.D. Thesis, Analytical and Marine Chemistry, Goteborg University.Sweden.

- Skoog, D.A and Leary, J.J. 1992. Principals of instrumental analysis, 4<sup>th</sup> ed. New York: A Harcourt Brace Jovanovich College Publisher.
- Skoog, D.A., West, D.M., Holler, F.J. and Crouch, S.R. 2004. Fundamentals of Analytical Chemistry, 8<sup>th</sup> ed. Australia: Thomson Brooks/Cole.Inc.
- Sompongchaiyakul, P.; Laongsiriwong, N. and Sangkarnjanawanich, P. 2004. An Occurrence of Eutrophication in Songkhla Lake, A Review. Proceeding of the International Workshop on Integrated Lake Management, 19-21 August 2004, Hat-Yai, Thailand.
- Strobel, H.A. and Heineman, W.R. 1989. Chemical instrumentation: A systematic approach, 3<sup>rd</sup> ed. New York. Wiley-Interscience.
- Stumm, W. 1987. Aquatic surface chemistry, pp. 319-349. NewYork: John Wiley&Sons.
- Sturgeon, R.E., Berman, S.S. and Willie, S.N. 1982. Concentration of trace metals from sea-water by complexation with 8-hydroxyquinoline and adsorption on C18-bonded silica gel, *Talanta*. 29: 167-171.
- Suitcharit, C. 2006. Development of speciation scheme for cadmium, copper, lead, and zinc in water using ultra filtration and different solid sorbents, Ph.D Thesis, Universiti Sains Malaysia, Malaysia.
- Sukasem, W. 1989. Improvement of solvent extraction method for trace metals in seawater, M.Sc. Thesis, Faculty of Science, Chulalongkorn University, Thailand.
- Tang, D., Warnken, K.W. and Santchi, P.S. 2002. Distribution and partitioning of trace metals (Cd, Cu, Ni, Pb, Zn) in Galveston Bay Waters, *Marine Chemistry*. 78: 29-45.
- Thompsonkrang, P. and Predalumpaburt, Y. 1995. The survey of water quality and macrobenthos community in pawong canal and outer Songkhla Lake, Songkhla: NICA. (Unpublished)
- Todorovic, Z., Polic, P., Sabo, T. and Cakic, M. 2002. Preconcentration method for trace metals in natural waters using 4-morpholine dithiocarbamate, *J. Serb. Chem. Soc.* 67(12): 879-885.

- Turner, A., Nimo, M. and Thuresson, K. A. 1998. Speciation and sorptive behaviour of nickel in an organic-rich estuary (Beaulieu. UK), *Marine Chemistry*. 63: 105-118.
- Turner D.R., Whiefield, M., and Dickson, A.G. 1981. The equilibration speciation of dissolved component in fresh water and seawater at 25°C and at 1 atm. Pressure, *Geochimica Cosmochimica Acta*. 45: 855-881.
- Turner, A., Millward, G.E. and Morris, A.W. 1991. Particulate metals in five major North Sea estuaries, *Estuarine, Coastal and Shelf Science*. 32: 325-346.
- Wang, J. 1982. Anodic striping voltammetry as an analytical tool, *Environ. Sci. Technol.* 16. 104A-109A.
- Wang, Z.L. and Liu, C.Q. 2003. Distribution and partition behavior of heavy metals between dissolved and acid-soluble fractions along a salinity gradient in the Changjiang Estuary, eastern China, *Chemical Geology*. 202: 383-396.
- Welz, B. 1985. Atomic Absorption spectrometry, p. 209. 2<sup>nd</sup> ed. Weinheim: VCH.
- Wetzel, R.G. 2001. Limnology, Lake and River Ecosystems, pp. 169-170. 3<sup>rd</sup> ed. New York: Academic Press.
- Winter, T.C., Mallory, S.E., Allen, T.R. and Rosenberry, D.O. 2000. The use of principal component analysis for interpreting ground water hydrograph. *Ground Water*. 38: 234-246.
- Yang, M. and Sanudo-Wilhelmy, S.A. 1998. Cadmium and manganese distributions in the Hudson River estuary: internal and seasonal variability, *Earth and Planetary Science Letters*. 160: 403-418.
- Zhou, J. L. , Liu, Y. P. and Abrahams, P. W. 2003. Trace metal behaviour in the Conwy estuary, North Wales, *Chemosphere*. 51: 429-440.
- Zwolsman, J. J. G. and Van Eck, G. T. M. 1999. Geochemistry of the major elements and trace metals in suspended matter of the Scheldt estuary, Southwest Netherlands, *Marine Chemistry*. 66: 91-111.