

# REFERENCES

## REFERENCES

- Abbasi, S. A.; Abbasi, N. and Soni, R. (1998). Heavy metals in the environment. Mittal publications, New Delhi, India. 314 pp.
- Abdulstar, M. K. and Yanagawa H. 1999. The present status of the catch trends and some biological information on the economically important fish species in the straits of Malacca. In : the abstracts of the international conference on the strait of Malacca. on 19-22 April -1999. "Towards sustainable Management of the straits of Malacca: policy, technical and financial options. Malaysia.
- AbduRani A.; Honng C. K. (1999). Pollution prevention and management assessment in the Malacca straits : land and sea-based sources. In: the abstracts of the international conference on the strait of Malacca. on 19-22 April -1999. "Towards sustainable Management of the straits of Malacca: policy, technical and financial options". Malaysia..
- AcKroyd, D.R. ; Bale, A.J.; Howland, R.J.M.; Knox, S.; Millward, G.E. and Morris, A. W. (1986). Distribution s and behaviour of dissolved Cu, Zn, and Mn in the Tamar Estuary. Est. coastal shelf Sci., 23: 621-640.
- Aderhold, D.; Williams, C.J. and Edyvean, R. G. J. (1996). The removal of heavy-metal ions by seaweeds and their derivatives. Bioresour. Technol., 58 (1): 1-6.
- Agemain, H. and Chao, A. S. Y. (1976). Evaluation of extraction techniques for the determination of metals in aquatic sediments. Analyst, 101: 761-767
- Ahn, I.; Lee, S.H.; Kim, K.T.; Shim,J.H. and Kim, D. (1996). Basline heavy metal concentrations in the antarctica Clam, *Laternula elliptica* in Maxwell bay, King George island, Antarctica. Mar. Pollut. Bull., 32(8/9): 592-598.
- Amado Filho, G. M.; Karez, C. S.; Pfeiffer, W. C.; Yoneshingue-Valentin, Y. and Farina, M. (1996). Accumulation, effects on growth, and localisation of zinc in *Padina gymnospora* (Dictyotales, Phaeophyceae). Hydrobiologia, 326-327: 451-456.
- Amado Filho, G. M. A.; Karez, C. S.; Andred, L. R.; Yonesshigue-valentin, Y. ;Pfeiffer,W.C. (1997). Effects on growth and accumulation of Zinc in six seaweed species. Ecotoxicol. Environmen. Saf., 37 (3): 223-228.
- American Public Health Association (APHA) (1989). Standard methods for the examination of water and wastewater. 17<sup>th</sup> Edition, American Public Health Association. Washington Publ., 10-203pp.
- Arakel, A. V. and Tian, H. J. (1992). Heavy metal geochemistry and dispersion pattern in coastal sediments, soil, and water of Kedron Brook floodplain area, Brisbane. Austr. Environ. Geol. Wat. Sci., 20(2): 219-231.

- Balss, P.W.; Hull, S.; Miller, B. S.; Bire, J. M. and Proctor, W. (1997). Trace metal in Scottish estuarine and coastal sediments. *Mar. Pollut. Bull.*, 34 (1): 42-50.
- Beijer, K. and Jernelove, A. (1979). Source, transport and transformation of metals in the environment. In: Friberg, L.; Norberg, G.F. and Vouk, V.B.(eds). *Hand book on toxicology of metals*. Amsterdam publ., p. 47-63.
- Bodoge, I.; Polyak, K. and Hlavay, J. (1997). Determination of heavy metals in lake and river sediments by selective leaching. *Inter. J. Environ. Anal. Chem.*, 66: 79-94.
- Brown, B. E. and Holley, M. C. (1982). Metal levels associated with tin dredging and smilting and their effect upon intertidal reef flats at Ko Phuket, Thailand. *Coral reef*, 1: 131-137.
- Brown, M T.; Hodgkinson, W M. and Hurd, C L. (1999). Spatial and temporal variations in the copper and zinc concentrations of two green seaweeds from Otago harbvour, New Zealand. *Mar. Environ. Res.*, 47(2): 175-184.
- Bryan, G. W. (1976). Heavy metal contamination in the sea. In: Johnston , R. (ed.). *Marine pollution*. Academic press Inc., London Publ., p.185-302.
- Cairns, J. Jr.; McCormick P. V. and Niederlehner, B. R. (1993). A proposed framework for developing indicators of ecosystem health. *Hydrobiologia*, 263: 1-44.
- Chester, R. and Voutsinou, F. G. (1981). The initial assessment of trace metal pollution in coastal sediments. *Mar. Pollut. Bull.*, 12: 84-91
- Chu, K. H.; Hasim, M. A.; Phang S. M. and Samuel, V. B. (1997). Biosorbption of cadmium by algal biomass: adsorption and desorption charateristics. *Wat. Sci. Tech.*, 35(7): 115-122.
- Collins, Y. E. and Stotzky, G. (1989). Factors affecting the toxicity of heavy metals to microbes. In: Beveridge, T.J. and Doyle, R.J. (eds). *Metals ions and bacteria*. John Wiley and Sons, Inc. New York, p. 31-90.
- Correa, J. A.; Castilla, J. C.; Ramirez, M.; Varas, M., Lagos, N.; Vergra, S.; Moenne, A.; Roman, D. and Brown M. T. (1999). Copper, copper mine tailings and effect on marine algae in Northern Chile. *J. appl. Phycol.*, 11: 57-67.
- Daffa, J. M. (1996). Land-based pollutants to the coastal and marine water of Dar es Salam and the effect to marine plants. In *Current trends in marine botanical research in the east African region. Proceedings of the 3-10 December 1995 symposium on the biology of microalgae and seagrasses in the Western Indian ocean*. University of Mauritius. p. 315-331.

- Dassenakis, M.; Scoullou, M. and Gaitis, A. (1997). Trace metals transport and behaviour in Mediterranean estuary of Acheloos river. *Mar. Pollut. Bull.*, 34 (2): 103-111.
- Dean, J. G.; Bosqui, F. L. and Lanouette, V. H. (1972). Removing of heavy metals from waste water. *Env. Sci. Technol.*, 6: 522-588.
- Department of environment (DOE), Malaysia. (1987). Environmental Quality report. Ministry of Science, Technology and Environment, Malaysia 187 pp.
- Department of environment (DOE), Malaysia. (1988). Environmental Quality report. Ministry of Science, Technology and Environment, Malaysia 204 pp.
- Department of environment (DOE), Malaysia. (1994). Environmental Quality report. Ministry of Science, Technology and Environment, Malaysia 94 pp.
- Department of environment (DOE), Malaysia. (1995). Environmental Quality report. Ministry of Science, Technology and Environment, Malaysia 93 pp.
- Department of environment (DOE), Malaysia. (1996). Environmental Quality report.
- Department of environment (DOE), Malaysia. (1997). Environmental Quality report. Ministry of Science, Technology and Environment, Malaysia 96 pp.
- Department of environment (DOE), Malaysia. (1998). Environmental Quality report. Ministry of Science, Technology and Environment, Malaysia 104 pp.
- Din, Z. B. (1992a). Use of aluminum to normalize heavy metal data from estuarine and coastal sediments of the straits of Malaka. *Mar. Pollut. Bull.*, 24(10): 484-491.
- Din, Z. B. (1992b). Use of aluminum to normalize heavy metal data from estuarine and coastal sediments of the straits of Malaka. In: Din and Jamaliha, (1995). Trace-metal pollution in the coastal areas of Penang island, Malaysia. In: Weston, D., Ong, K. And Vigers, G (eds). Asean criteria and monitoring: advances in marine environmental management and human health protection.. Proceedings of the Asean-Canada midterm technical review conference on marine science (24-28 October 1994). Singapore. EVS Environmental Consultants, Vancouver and National Science and Technology Board, Singapore. p. 207-213.
- Din, Z. B. (1995). Natural and antropogenic trace metal input into the coastal and estuarine sediments of the straits of Malacca. *Bull. Environ. Contami. Toxicol.*, 55: 666-673.
- Din, Z. B and Jamaliha, M. R. S. N. (1995). Trace-metal pollution in the coastal areas of Penang island, Malaysia. In: Weston, D., Ong, K. And Vigers, G (eds). Asean criteria and monitoring: advances in marine environmental management and human health protection.. Proceedings of the Asean-

Canada midterm technical review conference on marine science (24-28 October 1994). Singapore. EVS Environmental Consultants, Vancouver and national science and technology board, Singapore. p. 207-213.

- Din, Z. B.; Ahmad, A.; Jamalih, M. R. S. N. and Mustapha, W. D. W. (1997). Water and sediment quality of the coastal area of the West coast of Peninsular Malaysia. In: Vigers, G.; K. S. Ong, McPherson, C.; Millson, N.; Waston, I; and Tang, A., (eds.) . Asean marine environmental management : Quality criteria and monitoring for aquatic life and human health protection. Proceedings of the Asean- Canada technical conference on marine science (24-28 June, 1996) Penang, Malaysia. EVS environment consultants, North Vancouver and department of fisheries Malaysia. AII-10pp.
- Doust, J. L.; Schmidt, M and Doust L. L. (1994). Biological assessment of aquatic pollution: A review, with emphasis on plants as biomonitors. *Bio. Rev.*, 69: 147-186.
- Drude de Lacerda, L.; Laneuville Teixeira, V.; Davee Guimaraes, J. R. (1985). Seasonal variation of heavy metals in seaweeds from Conceicao de Jacarei (R.J.), Brazil. *Bot. Mar.*, 28(8): 339-343
- Duniker, J. C.; Wollast, R. and Billen, G., (1979). Behavior of manganese in the Rhine and Scheldt estuaries II. Geochemical cycling. *Est. Coastal Mar. Sci.*, 9: 727-738.
- Dybren, B. I. (1983). Field sampling and preparation of subsamples of aquatic organisms for analysis of metals and organochlorins. *FAO Fish. Rep. Tech. Pap.*, 212 part 9 p. 1-13.
- Dytham, C. (1999). Choosing and using statistics. A biologist's guide. Blackweel Science Ltd, Paris, France. 218 pp.
- Elder, J. F. (1988). Metal biogeochemistry. In: *Surface-water systems: A review of principles and concepts*. U.S. geological survey Circ. 1013, U.S. government printing office, Denver. 43 pp.
- El-rays, O. A and Ezzat, A. A. (1984). Bioaccumulation of some heavy metals in the vicinity of Alexandria. *FAO Fish. Rep. No. 334 supplement*. pp. 56-57.
- Engler, R. M.; Branon, J. M.; and Bigham, G. (1980). A selective extraction procedure or sediment characterization. In: *Chemistry of marine sediments*. Science Publ. Inc. pp. 163-171.
- Everaarts, J. M. and Nieuwenhuize, J. (1995). Heavy metals in surface sediment and epibentic macroinvertebrates from the coastal zone and continental slope of Kenya. *Mar. Pollut. Bull.*, 31(4-12): 281-289.
- Everaarts, J. M. and Swennen, C. (1987). Heavy metals (Zn, Cu, Cd, Pb) in some benthic invertebrate species and in sediment from Three coastal areas in Thailand and Malaysia. *J. Sci. Soc. Thailand*, 13: 189-203.

- Fereletta, M.; Bramer, P.; Semesi, A K. and Bojork, M. (1996). Heavy metal contents in macroalgae in the Zanzibar channel- an initial study. In Current trends in marine botanical research in the east African region. Proceedings of the 3-10 December 1995 symposium on the biology of microalgae and seagrasses in the Western Indian Ocean. University of Mauritius. p. 332-346.
- Forstner, U. and Prosi, F. (1979). Heavy metal pollution in freshwater ecosystems. In: Ravera, O. (ed). Biological Aspects of Freshwater pollution, Pergamon Press, Oxford Publ. p. 129-161.
- Fourest, E. and Volesky, B. (1996). Contribution of sulfonate groups and alginate to heavy metal biosorption by the dry biomass of *Sargassum fluitans*. Environ. Sci. Technol., 30(1): 277-282.
- Fourest, E. and Volesky, B. (1997). Alginate properties and heavy metal biosorption by marine algae. Appl. Biochem. Biotechnol., 67(3): 215-226.
- Gledhill, M.; Nimmo, M.; Hill, S. J. and Brown, M. T. (1997). The toxicity Of Copper(II) species to marine algae, with particular reference to macroalgae. J. Phycol., 33: 2-11.
- Gledhill, M.; Nimmo, M.; Hill, S. J. and Brown, M.T. (1999). The release of copper-complexing ligands by the brown alga *Fucus vesiculosus* (Phaeophyceae) in response to increasing total copper levels. J. Phycol., 35 (3): 501-509.
- Glynn, P. W.; Szmant, A. M.; Corcoran, E. F. and Cofer-Shabica, S. V. (1989). Condition of coral reef cnidarians from the Northern Florida reef tract: Pesticides, heavy metals, and histopathological examination. Mar. Pollut. Bull., 20: 568-576.
- Gnassia-Barelli, M.; Lemee, R. ; Pesando, D. and Romeo, M. (1995). Heavy metal distribution in *Caulerpa texafolia* from the North-Western Mediterranean. Mar. Pollut. Bull., 30(11): 749-755.
- Goh, A. H. and Sasekumar, A. (1980). The community structure of the fringing coral reef, Cape Rachado, Malaysia. Malay. Nat. J., 34: 25-37.
- Gopinath, N.; Shariff, M. (1999). Status, production and values of aquaculture output from the straits of Malacca. In: the international conference on the straits of Malacca on 19-22 April -1999. "Towards sustainable Management of the straits of Malacca: policy, technical and financial options". Malaysia, in press.
- Haynes, D.; Leeder, J. and Philip, R. (1997). A comparison of Bivalve species *Danax eltoides* and *Mytilus edilis* as monitors of metal exposure from effluent discharges along the Ninety mile beach, Victoria, Australia. Mar. Pollut. Bull., 34(5): 326-331.

- Head, P. C. (1985). Practical estuary chemistry. Cambridge University press. p. 23-31.
- Hee, S. Q. (1993). Biological monitoring (an introduction) Van Nostrand Reinhold, S A. 640 pp.
- Ismail, A. (1993). Heavy metal concentrations in sediment off Bintulu, Malaysia. Mar. Pollut. Bull., 26(12): 7.6-7.7
- Izquierdo, C; Usero, J. and Gracia, I. (1997). Speciation of heavy metals in sediments from salt marches on the Southern Atlantic coast of Spain. Mar. Pollut. Bull., 34(2): 123-128.
- Jayasekera, R. and Rossbach, M. (1996). Use of seaweeds for monitoring trace elements in coastal waters. Environ. Geochem. Health, 18(2): 63-68
- Jongman, R H G., Ter Braak, C. J. F. And Van Tongeren (1995). Data analysis in community and landscape ecology. Cambridge University press, UK. 299 pp.
- Jun, X.; Fu-Shiang, C. (1996). Heavy metal accumulation in tissue/organs of sea cucumber, *Holothuria leucospilota*. Hydrobiologia, 352(1-3): 17-23.
- Kaplan, D. (1988). Binding of heavy metals by algal polysaccharides. In: Stadler *et al.*, (eds). Algal biotechnology. Elsevier applied science Publ. p. 179-187.
- Karez, C S.; Magalhaes, V F.; Pfeiffer, W C.; Amado Filho, G. M. (1994). Trace metal contamination by algae in Sepetiba Bay, Brazil. Environ. Pollut., 83: 351-356
- Karez, C. S. and Pereira, R. C. (1995). Metal contents in polyphenolic fractions extracted from the brown alga *Padina gymnospora*. Bot. Mar., 38 (2): 151-155.
- Keeney-Kennicutt, W. L. and Presley, B. J. (1986). The geochemistry of trace metals in the Brazos river estuary. Est. Coastal Shelf Sci., 22: 459-477.
- Kesava Rao, C. H. and Indusekhara, V. K. 1987. Chromium, lead and cadmium contents of certain seaweeds from Saurashtra coast. Phytos., 26: 1-7
- Kingston, H. M.; Barnes, J. L.; Brady, T. J. and Rains T. C. (1978). Separation of eight transition elements from alkali and alkaline earth elements in estuarine and seawater with chelating resin and their determination by graphite furnace atomic absorption spectrometry. Anal. Chem., 50 (14): 2064-2070.
- Kruk-Dowgiallo, L. and Pempkowiak, J. (1997). Macrophytes as indicators of heavy metal contamination in the Puck lagoon (southern Baltic). Estonian Academy Publisher: Tallinn (Estonia), p. 86-100.
- Lapedes, D. N. (1978). Dictionary of scientific and technical terms, 2<sup>nd</sup> edition. New York, McGraw Hill.

- Leal, M. C. F.; Vasconcelos, M. T.; Sousa-Pinto, I. And Cabral, J. P. S., (1997). Biomonitoring with benthic macroalgae and direct assay of heavy metals in seawater of the Oporto coast ( northwest Portugal). *Mar. Pollut. Bull.*, 34(12): 1006-1015
- Leland, H. V. and Kuwabara, J. S. ( 1985). Trace metals. In : Rand G.M. and Peterocelli, S.R. (eds). *Fundamentals of aquatic toxicology*. Hemisphere publishing corporation, Washington. p. 374-415.
- Lewis, A. G. (1995). *Copper in water and aquatic environments*. International Copper Association, LTD., New York. 65 pp.
- Lim, P.; Lee, C. and Din, Z. B. (1995). Accumulation of heavy metals by cultured oysters from Merbok estuary, Malaysia. *Mar. Pollut Bull.*, 31(4-12): 420-423.
- Lobban, C. S. and Harrison, P. J. (1994). *Seaweed ecology and physiology*. Cambridge University press. 366 pp.
- Lobban, C. S.; Harrison, P. J. and Duncan, M. J. (1985). *The physiological ecology of seaweeds*. Cambridge university press, London publ. 242 pp.
- Luoma, S. N. (1990). Processes affecting metal concentration in estuarine and coastal marine sediments. In: Furness, R. W. and Rainbow, P. S. (eds). *Heavy metals in marine environment*. Boca Raton, Florida, CRC Press Inc., p. 51-66
- Luoma, S. N.; Bryan, G. W. and Langston W. J. (1982). Scavenging of heavy metals from particulates by brown seaweed. *Mar. Pollut Bull.*, 13(11): 394-396.
- Maher, W. A. (1985). Selenium in macroalgae. *Bot. Mar.*, 28: 269-273.
- Malea, P. and Haritonidis, S. (1999). Seasonal accumulation of heavy metals by red alga *Graclaria verrucosa* (Huds.) Papens. from Thermaikos golf, Greece. *J. appl. phycol.*, 11: 503-509
- Malinovskaya, T. M. and Khristorofova, N. K. (1997). Characterisation of coastal waters of the south Kuril Island by trace element of indicatory organisms. *Russ. J. Mar. Biol., Biol. Moraya*, 23(4): 212-218
- Manahan, S. E. (1991). *Environmental chemistry* 5<sup>th</sup> ed. Lewis Publishers, USA 583 pp.
- Martin, T. D.; Brockhoff, C. A.; Creed, J. T. and Long, S. E., (1992). Determination of metals and trace elements in water wastes by inductively coupled plasma-atomic emission spectrometry. In: U.S. Environmental protection Agency. (eds). *Methods for the determination of metals in environmental samples*. Smoley, C.K. p.33-93.



- Mat, I. and Maah, M. J. (1994). An assessment of trace metal pollution in the mudflats of Kuala Selangor and Batu Kawan, Malaysia. *Mar. Pollut. Bull.*, 28(8): 512-514
- Mat, I.; Maah, M. J. and Johari, A. (1994). Trace metal geochemical associations in sediment from culture-bed of *Anadara granosa*. *Mar. Pollut. Bull.*, 28(5): 319-323.
- McCormick, P.V. and Cairns J., Jr (1994). Algae as indicators of environmental change. *J. appl. phycol.*, 6: 509-526.
- McLaren, J. W.; Berman, S. S.; Boyko, V. J. ,and Russell, D. S. (1981). Simultaneous determination of major, minor, and trace elements in marine sediments by inductively coupled plasma atomic emission spectrometry. *Anal. Chem.*, 53: 1802-1806.
- Melor, I. (1998). Toxicity testing of four heavy metals with selected marine Phytoplankton. M. Phil. thesis. University of Malaya, Kuala Lumpur, Malaysia, 243 pp.
- Mhatre, G. N. (1991). Bioindicator and biomonitoring of heavy metals. *J. Environ. Biol.*, JEB ecade Commeration Issu. 201-209. Ministry of Science, Technology and Environment, Malaysia 86 pp.
- Mokhtar, M. B.; Awaluddin, A. B. and Foong, L. K. (1994). Determination of metals in corals: records of seasonal and annual variations. Proceedings of the international conference & Exhibition on environment & development "Environment Malaysia 94", 19-22 October 1994, Kuala Lumpur. pp. 541-549.
- Mokhtar, M.; Awaluddin, A. and Yong, O. C. (1997). Malaysian corals as potential records of oceanic pollution: trace metals. In: Vigers, G.; K. S.; Ong, McPherson, C.; Millson, N.; Waston, I; and Tang, A., (eds.). Asean marine environmental management : Quality criteria and monitoring for aquatic life and human health protection. Proceedings of the Asean-Canada technical conference on marine science (24-28 June, 1996) Penang, Malaysia. EVS environment consultants, North Vancouver and Department of Fisheries Malaysia. AII-10 pp.
- Molloy, F. J. and Hills, J. M. (1996). Long-term changes in heavy metal loading of *Ascophyllum nodosum* from the Firth of Clyde, UK. *Hydrobiologia*, 326/327: 305-310.
- Moore, H. M.; Robert, D.; Harriott, M. and Burns, D. T. (1993). Heavy metals indeep sea holothurins. *Analytical Proceedings*, 30: 259-262.
- Morris, A. W.; Bale, A. J. and Howland, R. J. M., (1982). The dynamic of estuarine manganese cycling. *Est. Coastal Shelf Sci.*, 14 : 175-192.

- Murugadas, T. L. (1997). Bioaccumulation and toxicity studies of heavy metals in selected Malaysian seaweeds. M. Phil. Thesis, University of Malaya, Kuala Lumpur, Malaysia, 334 pp.
- Murugadas, T. L.; Phang, S. M. and Tong, S. L. (1995). Heavy metal accumulation patterns in selected seaweed species of Malaysia. *Asia Pacific J. Mol. Biol. & Biotech.*, 3(4): 290-310.
- Nriagu, J. O. (1979). *The biogeochemistry of mercury in the Environment*. Elsevier Publ. Co. New York.
- Nriagu, J. O. and Pacyna, J. M. (1988). Quantitative assessment of worldwide contamination of air, water and soils by trace metals. *Nature*, 333 : 134-139.
- Ong, B. and Din, Z. B. (1995). Ecology of the benthic community in the straits of Penang. In: Waston, D., Ong, K. And Vigers, G (eds). *Asean criteria and monitoring: advances in marine environmental management and human health protection*. Proceedings of the Asean-Canada midterm technical review conference on marine science (24-28 October 1994). Singapore. EVS Environmental Consultants, Vancouver and National Science and Technology Board, Singapore. p. 225-233.
- Ooi, J.; Abdulrani, A. and Phang, S. M. (1999). The impact of ten years of development on seaweed diversity at Cape Rachado, west coast of peninsular Malaysia. In: Abstracts of the international conference on the straits of Malacca. on 19-22 April -1999. "Towards sustainable Management of the straits of Malacca: policy, technical and financial options". Malaysia. .
- Ouano, E. A. R. (1988). Training manual on assessment of the quality and type of land -based pollutant discharges in to marine and coastal environment. COBESA project EAS 21, 65pp.
- Patel, B., Pawar, S., Balani, M. C., and Patel, S. (1980). Macroalgae as 'Sentinel' of trace and heavy metals in the mangement of coastal environment. In: (Patel, ed.) *Mangement of environment*. Wiley Ltd, New Delhi. pp. 371-388.
- Phang, S. M.; Melor, I. and Tong, S. L. (1997). Toxicity testing of heavy metals with marine phytoplankton. In: Vigers, G.; Ong, K. S.; McPherson, C.; Millson, N; Waston, I; and Tang, A. (eds). *Asean marine environmental management : Quality criteria and monitoring for aquatic life and human health protection*. Proceedings of the Asean- Canada Technical Conference on Marine Science (24-28 June, 1996) Penang, Malaysia. EVS environment consultants, North Vancouver and Department of Fisheries Malaysia. A II-10 pp.
- Phang, S. M. (1985). Seaweeds of Cape Rachado, Port Dickson. *Malay Sci.*, 10(2): 17-25
- Phang, S. M. (1988). The effect of siltation on algal biomass prodction at fringing coral reef, Port Dickson, Peninsular Malaysia. *Wallaceana*, 51 : 3-5.

- Phang, S. M. (1989). Notes on the ecology of some marine epiphytic Rhodophyta at Cape Rachado, Peninsular Malaysia. *Malay. Nat. J.*, 43: 84-95.
- Phang, S. M. (1993). Algae and heavy metal pollution. In: Yeoh, Et al (Eds). *Waste management in Malaysia current statues and prospects for bioremediation.* Ministry of Science, Technology and Environment, Malaysia. p. 27-40.
- Phang, S. M. (1994). New record of Malaysian marine algae. *Hydrobiologia*, 285: 123-129.
- Phang, S. M. (1995). Distribution and abundance of marine algae on the coral reef flats at Cape Rachado, Port Dickson, Peninsular Malaysia. *Malays. J. Sci.*, 16a : 23-32.
- Phang, S. M.; Tong, C. W.; Jaafar, A. and Abdullah H. (1990). Marine science research and development in Malaysia: a country reopr. In: Yap, H T.; Bohle-Carbonell, M and Gomez, E. D). *Oceanography and marine pollution: an Asean-ec perspective.* Proceedings of the Asean- Ec seminar/ workshop on Marine Science, Manila, Philippines, 12-16 April 1987. P.115-144.
- Phang, S. M.; Tong, S. L. and Shila, R. (1992). Management and bioremediation of heavy metal using algae. In: Ismail, S.; Mohamed N. E.; Normah Mohd, N.; Rahmah, M. and Zakaria, A. H. (eds) *Penyelidikan Bioteknologi Kebangsaan. Prosiding Seminar Program Bioteknologi Kebangsaan Ke III, 27-29 Oct., 1991, Kuantan. Malaysia.* p. 163-168.
- Phillips, D. J. H. (1977). The use of biological indicator organisms to monitor trace metal pollution in marine and estuarine environment – A review. *Envir. Pollut.*, 13: 281-317.
- Phillips, D. J. H. (1980). *Quantitative aquatic biological indicators: their use to monitor trace metal and organochlorine pollution.* Applied Science Publisher. London. 488p.
- Phillips, D. J. H. (1990). Use of macroalgae and invertebrates as monitors of metal levels in estuaries and coastal waters. In: Furness, R. W. and Rainbow, P. S., (eds). *Heavy metals in marine environment*, CRC Press, Inc. Boca Raton, Florida. p. 81-99.
- Phillips, D. J. H. (1994). Macrophytes as biomonitors of trace metals. In: Kramer, K. J. M. (ed). *Biomonitoring of coastal waters and estuaries.* CRC Press, Inc. Boca Raton. p. 85-103.
- Phillips, D. J. H. and Rainbow, P. S. (1989). Strategies of trace metal sequestration in aquatic organisms. *Mar. Environ. Res.*, 28: 207-210
- Pistocchi, R.; Guerrini, F.; Balboni, V. and Boni, L. (1997). Copper toxicity and carbohydrate production in the micro algae *Cylindrotheca fusiformis* and *Gymnodinium* sp. *Europ. J. Phycol.*, 32 (2): 125-131.

- Powell, R. T.; King, D. W.; Landing, W. M. (1995). Iron distribution in surface waters of the south Atlantic. *Mar. Chem.*, 50: 13-20.
- Rai, L. C.; Gaur, J. P. and Kumar, H. D. (1981). Phycology and heavy metal pollution. *Bio. Rev.* 56: 99-151
- Rainbow, P. S. (1993). Biomonitoring of marine heavy metal pollution and its application in Hon Kong waters. in: Morton, B.(ed.) Proceedings of first international conference on marine biology of Hon Kong and South China Sea, Hon Kong. p. 235-250.
- Rainbow, P. S. (1995). Biomonitoring of heavy metal, bioavailability in the marine environment. *Mar. Pollut. Bull.*, 31(4-12) : 183-193.
- Rainbow, P. S. and Dallinger, R. (1993). Metal uptake, regulation, and excretion in fresh water invertebrates. In: Dallinger, R. and Rainbow, P. S.(eds). *Ecotoxicology of metals in invertebrates*. special publication of SETAC, Lewis Publisher. p. 119-131.
- Rainbow, P. S.; Phillips, D. J. H. and Depledge, M. H. (1990). The significance of trace metal concentrations in marine invertebrates. *Mar. Pollut. Bull.*, 21: 321-324.
- Rajendran, K.; Sampathkumar, P.; Govvindasamy, C; Ganesan, M.; Kannan, R. and Kannan, L. (1993). Levels of trace metals (Mn, Fe, Cu, and Zn) in some indian seaweeds. *Mar. Pollut. Bull.*, 26(5): 283-285.
- Ramachandran, S. D.; Phang, S. M. and Tong, S. L. (1994). Heavy metals content of some Malaysian seaweeds : In: Phang *et al.* (eds). *Algal biotechnology in the Asia-Pacific Region*. University of Malaya. pp. 339-343
- Ramachandran, S. D.; Murugads, T. L.; Tong, S. L.; Phang, S. M. (1995). Heavy metal accumulation in Malaysian seaweeds. In: Waston, D.; Ong, K And Vigers, G (eds). *Asean criteria and monitoring: advances in marine environmental management and human health protection*. Proceedings of the Asean-Canada midterm technical review conference on marine science (24-28 October 1994). Singapore. EVS Environmental Consultants, Vancouver and National Science and Technology Board, Singapore. p. 240-245.
- Ramchandran, S. D. (1993). Seaweeds as indicators of heavy metal pollution in peninsular Malaysia.. M. Phil. Thesis. University of Malaya, Kuala Lumpur, Malaysia. 276 pp.
- Ramirez, M.; Gonzalez, H.; Ablanedo, N.; Torres, I. (1990). Heavy metals in macroalgae of Havana's northern littoral Cuba. *Chem. and Ecol.*, 4(2): 49-55
- Riget F.; Johansen, P. and Asmund, G. (1995). Natural seasonal variation of cadmium, copper, lead and zinc in brown seaweed (*Fucus vesiculosus*). *Mar. Pollut. Bull.*, 30(6): 409-413.

- Riget, F.; Johansen, P. and Asmund, G. (1997). Baseline levels and natural variability of elements In three seaweed species from Greenland. *Mar. Pollut. Bull.*, 34 (3): 171-176.
- Robledo, D. and Pelegrin, F. (1997). Chemical and mineral composition of six potentially edible seaweed species of Yucatan. *Bot. Mar.*, 40: 301-306.
- Schiewer, S. (1999). Modelling complexation and electrostatic attraction in heavy metal biosorption by *Sargassum* biomass. *J. appl. Phycol.*, 11: 79-87.
- Seng, C. E.; Lim, P. E. and Ang, T. T. (1987). Heavy metal levels concentrations in coastal seawater and sediment off Prai industrial estate, Penang, Malaysia. *Mar. Pollut. Bull.*, 18: 611-612.
- Service, M.; Mitchell, S. H. and Oliver, W. T. (1996). Heavy metals in the Superficial sediments of the N-W Irish sea. *Mar. Pollut. Bull.*, 32(11): 823-830.
- Shazili, N. M.; Mohamed, A. R. and Yaakob, R. (1989). Heavy metals in sediments of the south china sea. In: *Proc. 12<sup>th</sup> annual seminar of the Malaysian society of marine science.* p. 99-106.
- Shcheglov, V. V.; Moiseichenko, G. V. (1991). Effect of copper and zinc on embryos, larvae, and adult individuals of the sea urchin *Strongylocentrotus intermedius* and sea cucumber *Stichopus japonicus*. *Sov. J. Mar. Biol.*, 16 (3): 72-175.
- Sivalingam, P. M. (1978). Biodeposited trace metals and mineral content studies of some tropical marine algae. *Bot. Mar.*, 21: 327-330.
- Sivalingam, P. M. (1980). Mercury contamination in tropical algal species of the Island of Penang, Malaysia. *Mar. Pollut. Bull.*, 11(4): 106-107.
- Solan, N. A.; Hugdahal, M. (1995). An evaluation of the interlaboratory comparison exercise in Asean marine pollution monitoring. In: *Waston, D.; Ong, K. S.; And Vigers, G. (eds). Asean criteria and monitoring: advances in marine environmental management and human health protection. Proceedings of the Asean-Canada midterm technical review conference on marine science (24-28 October 1994).* Singapore. EVS Environmental Consultants, Vancouver and National Science and Technology Board, Singapore. 422 pp.
- Sorentino, C. (1979). The effects of heavy metals on phytoplankton – a review. *Phykos*, 18: 149-161.
- Sposito, G. (1986). Distribution of potentially hazardous trace metals. In: *Sigel, H., (ed.) Metal ion in biological system—concepts on metal ion toxicity, Vol 20 m, Marcel Dekker. New York publ. p. 1-19.*

- St. John, B. E. (1974). Heavy metals in the skeletal carbonate of scleractinian corals. Proceedings of the 2<sup>nd</sup> International Coral Reef Symposium. pp. 461-469.
- Stefels, J. and Leeuwe, M. A. (1998). Effect of iron and light stress on the biochemical composition of Antarctic *Phaeocystis* sp. (Prymnesiophyceae) in intracellular dmsp concentrations. J. Phycol., 34: 486-495.
- Stromgren, T. (1979a). The effect of Copper on length increase in *Ascophyllum nodosum* (L.) le joils. J. exp. mar. Biol. Ecol., 37 : 153-159.
- Stromgren, T. (1979b). The effect of Zinc on length increase of length of five species of intertidal *Fucales*. J. exp. mar. Biol. Ecol. 40 : 95-102
- Sundby, B., Silverberg, N., and Chesselet, R. (1981). Pathways of manganese an open estuarine water system. Geo Cosmo. Chim. Acta, 45: 293-307.
- Swileh, K. M. and Adelung, D. (1995?). Effect of body size and season on the concentrations of Cu, Cd, Pb, and Zn in *Diastylis Rathkei* (kRooYer) ( crustacea: Cumacea) from Kiel bay Western Baltic. Mar. Pollut. Bull., 31: 103-107.
- Tariq, J.; Jaffar, M.; Ashraf, M. and Moazzam, M. (1993). Heavy metal concentration in fish, shrimp, seaweed, sediment, and water from the Arabian Sea, Pakistan. Mar. Pollut Bull., 26(11): 644-647.
- Trick, C. G. and Wilhelm, S. W. (1995). Physiological changes in the coastal marine cyanobacterium *Synechococcus* sp. PCC 7002 exposed to low ferric ion levels. Mar. Chem., 50: 207-217.
- Vasquez, J. A. and Guerra, N. (1996). The use of seaweeds as bioindicators of natural and anthropogenic contamination in north chile. Hydrobiologia, 326-327: 327-333.
- Vyamazal, J. (1984). Short-term uptake of heavy metals by periphyton algae. Hydrobiologia, 119: 171-179.
- Wahbeh, M. I.; Mahasneh, D. M. and Mahesneh, I. (1985). Concentration of zinc manganese, copper cadmium, magnesium and iron in ten species of algae and sea water from aqaba, Jordan. Mar. Environ. Res., 16(2): 95-102
- Wan, A. A., and Zaharah, I. 1993. Bacterial control of heavy metal pollution. In : Biological Processes in Pollution Control. Proceedings of a workshop at Kuala Lumpur on 9-10 August 1993, Malaysia. 120 pp.
- Weetzel, R G. (1992). Clean water: a fading resource. Hydrobiologia, 243/244: 21-30.
- Wilson, J. G. (1994). The role of bioindicators in estuarine management. Estuaries, 17: 94-101.

- Wong C. L. 1997. Phenological studies of two species of *Sargassum* (Sargassaceae, Phaeophyta) on the coral reef flats at Cape Rachado, Peninsular Malaysia. M. Phil. Thesis. University of Malaya, Kuala Lumpur, Malaysia. 188 pp.
- Wong, C.L.; Melor, I.; Masuda, M and Phang, S. M. (1999). Diversity of seaweed along the straits of Malacca. In : The international conference on the Straits of Malacca. on 19-22 April -1999. "Towards sustainable Management of the straits of Malacca: policy, technical and financial options" Malaysia, in press
- Wood A. K. ; Ahmad, Z.; Shazili ,N. M. Md.; Yaakob, R. and Law, A. (1995). Marine contaminants and application of geochronological technique in marine pollution studies in coastal areas of Penang and Johore Straits. In: Waston , D. , Ong, K And Vigers, G (eds). Asean criteria and monitoring: advances in marine environmental management and human health protection. Proceedings of the Asean-Canada midterm technical review conference on marine science (24-28 October 1994). Singapore. EVS Environmental Consultants, Vancouver and National Science and Technology Board, Singapore. p. 198-206.
- Wright, D. A. (1978). Heavy metal accumulation by aquatic invertebrates. In: Coaker, T. H.(ed). Applied biology. Volume III. Academic press, London. p. 331-395.
- Yuen, H. C. (1996). A study of the distribution and transport of heavy metals in Malaysian rivers and seawater. M.Sc. Dissertation, University of Malaya . Malaysia. 192 pp.
- Zaid, I.; Yong, W. M. and Singh, M. M. (1980). Manual of laboratory methods for chemical analysis of rubber effluent. RRIM Publ. 65 pp.
- Zainal bin Abdullah and Mohd Radzuan Yusof (1989). Assessment of concentration levels and trends of non-oil pollutants and their effects on marine environment in the East Asian region UNEP/COBSEA project, No. EAS 16, 20 pp.
- Zakaria, M. P.; Takada, H.; Tanabe, S. and Ismail, A. (1999). Source identification of oil pollution using molecular markers in the straits of Malacca, Malaysia. In: the international conference on the straits of Malacca. on 19-22 April - 1999. "Towards sustainable Management of the straits of Malacca: policy, technical and financial options". Malaysia, in press.
- Zirino, A and Yamamoto, S. (1972). A pH-dependent model for the chemical speciation of Copper, Zinc, Cadmium, and Lead in seawater. Limnol. Oceanogr., 17 (5): 661-671.
- Zirino, A. and Healy, M. L. (1970). Inorganic zinc complexes in seawater. Limnol. Oceanogr., 15(6): 956-958.

Zolotukhina, E. Yu. and Radzinskaya, N. V. (1995). Macroalgae as monitors of heavy metal concentrations in the Black sea coastal ecosystem. *Okeanologiya*, 35(3): 431-434