

WATER POLLUTION

0601-040. Aftab Begum SY, Noorjahan CM, Dawood Sharif S (PG Res Dept Zoo, Justice Basheer Ahmad Sayeed Coll Women, Chennai 600018). **Physico-chemical and fungal analysis of a fertilizer factory effluent.** *Nature Env Polln Techno*, **4**(4) (2005), 529-531 [12 Ref].

Physico-chemical parameters and analysis of untreated fertilizer effluent were studied and the results revealed that the parameters like EC, TDS, TSS, BOD, COD and ammonia are high compared to permissible limits of CPCB (1995), and fungal analysis showed the presence of 15 species isolated on Malt Extract Agar (MEA) medium thereby indicating the pollutional load of the effluent.

0601-041. Anand Chetna, Akolkar Pratima, Chakrabarti Rina (B- U&V 25A, Shalimar Bagh, Delhi-110088). **Bacteriological water quality status of river Yamuna in Delhi.** *J Environ Bio*, **27**(1) (2006), 97-101 [8 Ref].

Study reveals the impact of diverse anthropogenic activities as well as the monsoon effect on the bacterial population of river Yamuna in Delhi stretch. Microbial population contributed mainly through human activities prevailed in the entire stretch of Yamuna river with reduction in bacterial counts during monsoon period due to flushing effect. Bacteriological assessment does not provide an integrated effect of pollution but only indicate that water quality at the time of sampling. Hence, this parameter is time and space specific.

0601-042. Arthur James R, Emmanuel KV, Scaria Rose, Thanasekaran K (Dept Marine Sci, Bhartiadasan Univ, Tiruchi 620018). **Evaluation of domestic wastewater treatment using various natural filter media.** *Asian J Water Env Polln*, **3**(1) (2000), 103-110 [24 Ref].

The performance of combined anaerobic and aerobic treatment system with different medias and their efficiencies were examined for domestic wastewater. In anaerobic filter, gravel media show higher efficiency than slag media and PO₄ removal is proven to fail in the slag media. Gravel (2-4 mm) and pebble (8-10 mm) gives better performance than sand media (0.5 mm) in aerobic filter. Combination of these three-system gives excellent alternative (89 to 94.5% efficiency) to conventional treatment system, which proves and reduced the operational cost.

0601–043. Athikesavan S, Vincent S, Velmurugan B, Vasuki R (Unit Environ Hlth Biotechno, PG Res Dept Zoo, Loyola Coll, Chennai 600034). **Accumulation of nickel in the different tissues of silver carp (*Hypophthalmichthys molitrix*).** *Env Eco*, **24**(5) (1) (2006), 143-146 [25 Ref].

Nickel chloride widely used in industries was investigated in the present study. Silver carp (*Hypophthalmichthys molitrix*) were selected for the bioassay experiments. The bioaccumulation of nickel was studied in the gill, liver, intestine and kidney of the fish. Fish were exposed to 10, 20 and 30 days in sublethal concentration of nickel (5.7 mg / liter). This heavy metal is predominantly accumulated in liver followed by kidney, intestine and gill.

0601–044. Barik RN, Pradhan B, Patel RK (Dept Chem, Natl Inst Techno, Rourkela 769008). **Trace elements in ground water of Paradip area.** *J Indl Polln Contl*, **21**(2) (2005), 355-362 [13 Ref].

The degree of trace element pollution and the suitability of groundwater for drinking purpose was assessed. The concentration of Pb was found to be present above maximum permissible limit. More than permissible limit of Fe was found around the industrial area. The concentrations of Zn, Cu and Mn are well below the maximum permissible limit as recommended by ISI (1983) for drinking purpose.

0601–045. Bhat Subhas Chandra, Goswami Saswati, Ghosh Uday Chand* (* Govt Teachers Trng Coll, Malda, West Bengal). **Removal of trace chromium (VI) from contaminated water: biosorption by *Ipomea aquatica*.** *J Environ Sci Engng*, **47**(4) (2005), 316-321 [25 Ref].

Ipomea aquatica a wetland plant, has ability to remove Cr(VI) from the contaminated water by transforming Cr (VI) to Cr(III). This adsorption of Cr(VI) basically takes places in roots of this plant. The lower level of contamination requires greater contact time than the higher one to bring down Cr(VI) below the permissible level. The study revealed that the plant *Ipomea aquatica* adsorbs Cr(VI) from the contaminated water very slowly compared to the other reported plants.

0601–046. Chavan RP, Lokhande RS, Rajput SI (Dept Chem, Dnyanasadan Coll, Thane, Maharashtra). **Monitoring of organic pollutants in Thane creek water.** *Nature Env Polln Techno*, **4**(4) (2005), 633-636 [4 Ref].

Investigation was carried out to study the different organic pollutants present in the Thane creek water. The creek water shows high values of BOD and COD along with

phenolic compounds, detergents, alcohols, ether and acetone, which are harmful to aquatic life. The origin of this pollutants is mainly from the entry of effluents from surrounding industries.

0601–047. Das Rajib, Samal Nihar Ranjan, Roy Pankaj Kumar, Mitra Debojyoti* (*Dept Mechanical Engng, Jadavpur Univ, Kolkata 700032). **Role of electrical conductivity as an indicator of pollution in shallow lakes.** *Asian J Water Env Polln*, **3**(1) (2006), 143-146 [4 Ref].

Experiments carried out at Subhas Sarovar (lake) and Rabindra Sarovar (lake), Kolkata, indicates that EC has a linear relationship with Total Dissolved Solids (TDS), which is validated by the findings at various other lakes throughout the world. It is also observed that EC increases with increase in TDS, which in turn indicates increased concentration of sulphates and other ions.

0601–048. D’Cruz FG, Miranda MTP (PG Res Dept Zoo, Fatima Mata Natl Coll Kollam 691001). **Effect of KMML (Kerala Minerals and Metals Limited) titanium dioxide industrial effluents on the plankton biomass of Vattakayal - an estuarine system in Kerala.** *Uttar Pradesh J Zoo*, **25**(2) (2005), 151-156 [21 Ref].

There was drastic reduction of plankton biomass at station I which directly receives the effluents. Station II which was near to Station I also recorded decreased values. Station III closer to the river discharge site and Station IV closer to the estuarine mouth to the sea, exhibited almost normal values. The interrelationship of plankton biomass with year, station and season are discussed.

0601–049. Dey Kallol, Mohapatra SC, Misra Bidyabati (Dept Chem, Govt (Auto) Coll, Rourkela 769004). **Assessment of water quality parameters of the river Brahmani at Rourkela.** *J Indl Polln Contl*, **21**(2) (2005), 265-270 [5 Ref].

Various physio-chemical parameters were assessed on the samples drawn from the river, “Koel”, “Shankha” and “Brahmani” selecting strategic points. It was observed that dilution during rainy season decreases the metal concentration level to a considerable extent. However the enrichment of these metals by bio-magnification and bio-accumulation in edible components produced in water is accepted to produce a remarkable effect on the water of the river “Brahamani” which is of deep public concern.

0601–050. Doke Jayant, Kudlu Priyadarshini, Vijapurkar Suman, Adhyapak Upendra, Kalyan Raman V (Dept Environ Sci, Univ Pune, Pune 411007). **Application of root zone process for remediation of 2-chlorophenol.** *Nature Env Polln Techno*, **4**(3) (2005), 327-331 [11 Ref].

The root-zone technology is effective for removal of 2-chlorophenol from wastewater. It is simple, robust process able to withstand wide variation of operating conditions. The plant like *Phragmites australis* was used in root-zone technology, which gives an average of 0.5g O₂/m²/day (max 3g/m²/day). It removes 2-chlorophenol up to 65%, 60%, 57% and 42% from 10, 20, 30, 40, and 50 ppm concentrations respectively.

0601–051. Dutta RK, Saikia G, Das B, Bezbaruah, Das HB, Dube SN (Dept Cheml Sci, Tezpur, Univ, Tezpur 784028). **Fluoride contamination in groundwater of Central Assam, India.** *Asian J Water Env Polln*, **3**(2) (2006), 93-100 [24 Ref].

High fluoride contamination has been observed in the groundwater of areas having ancient alluvial red soil and Precambrian metamorphic rock complex basement in the Kapili-Jamuna sub-basin. Moderate fluoride has been found in ground water of some places in Morigaon and Golaghat district also. Besides fluoride, presence of high concentrations of SO₄²⁻, much above the guideline values, have also been recorded in some samples.

0601–052. Gnana Rani DF, Arunkumar K, Sivakumar SR (Govt Arts Coll, Ariyalur 621713). **Physio-chemical analysis of waste water from cement units.** *J Indl Polln Contl*, **21**(2) (2005), 337-340 [9 Ref].

Two major cement industries of the Ariyalur and Reddipalayam were selected and the waste water discharged from these units were collected and subjected to analysis. The values of different parameters were compared with the standard values given by Tamil Nadu Pollution Control Board. The reasons for variations are analysed and remedial measures suggested.

0601–053. Guru Prasad B (Environ Engng Lab, Civil Engng Dept, KL Coll Engng, Vaddeswaram 522502). **Assessment of water quality in canals of Krishna Delta area of Andhra Pradesh,** *Nature Env Polln Techno*, **4**(4) (2005), 521-523 [2 Ref].

Water samples from different locations are collected regularly to check the suitability of water for human use. The parameters like temperature, suspended solids, total solids,

electrical conductivity, alkalinity, dissolved oxygen and chlorides are analyzed. For the experimental data mean, standard deviation, variance, and standard error are calculated and the results are discussed. This investigation revealed that the canal serves the purpose of human use.

0601–054. Harish Babu K, Puttaiah ET, Kumara Vijaya, Thirumala S (Dept Environ Sci, Kuvempu Univ, Shankaraghatla 577451). **Status of drinking water quality in Tarikere taluk with special reference to fluoride concentration.** *Nature Env Polln Techno*, **5**(1) (2006), 71-78 [29 Ref].

Thirty water samples were collected from public hand pumps of Tarikere taluk, which are used for drinking purpose only. The fluoride concentration ranges from 0.45 mg/L to 1.98 mg/L. The results of the study indicate that ground water quality in the study area is much suitable with respect to fluoride as more than 65% of the sample have fluoride above the permissible limit.

0601–055. Indra V, Meiyalagan V (Dept Zoo, Thiruvalluvar Univ, Fort Campus, Vellore). **Diversity and distribution of microfungi in polluted and non polluted water bodies from an industrial areas of river Palar, Vellore-India.** *Asian J Microbio Biotechno Environ Sci*, **7**(4) (2005), 723-725 [14 Ref].

Attempt is made to enumerate the diversity and distribution of micro fungi in water polluted and non polluted aquatic ecosystems in an industrial area of river Palar. The results show that the fungal diversity was higher with 22 species in polluted waters compared to 12 species from non-polluted sources. The ecological significance of these observations is discussed.

0601–056. Jadeja BA, Odedra NK, Thaker MR (Dept Bot, MD Sci Coll, Porbandar 360575). **Studies on ground water quality of industrial area of Dharampur, Porbandar city, Saurashtra, Gujrat, India.** *Plant Archives*, **6**(1) (2006), 341-344 [5 Ref].

The ground water quality was assessed by examining various physico- chemical and bacteriological characteristics. TDS was above the desirable limit prescribed by BIS : 14543, 2004. All the samples collected from Dharampur industrial area Porbandar city were rated as unacceptable for their taste on the basis of total hardness. Results show that the ground water of Dharampur Industrial area, Porbandar city is suitable for drinking purpose, subject to proper disinfection to ensure health of population.

0601–057. Jena PK, Mohanty M (Inst Adv Techno Environ Stud, Bhubaneswar, Orrisa). **Processing of liquid effluents of mineral processing industries.** *Intl Symposium Environ Manag Mining Metallurgical Industries*, 11-14 Dec, 2005, Bhubaneswar, 193-212 [20 Ref].

In mineral based industry among various environmental issues the water pollution has posed most disastrous effect and complex challenges for undertaking necessary remedial measures. The sources of water pollution in different mineral based industries including mining, mineral processing, integrated iron and steel plant and nonferrous metal industries are described. Various liquid effluent treatments techniques both physio-chemical and biological have been described and discussed. The process in each case being used commercially, have been outlined.

0601–058. Kamath Devidas, Kumara Vijaya, Tirumala BR, Puttaiah ET (Dept Environ Sci, Kuvempu Univ, Shankeraghatta 577451, Dist Shimoga). **Phytoplankton for biomonitoring of organic pollution in two tanks of Shimoga district, Karnataka.** *J Aquatic Bio*, **21**(1) (2006),. 7-9 [13 Ref].

Two tanks situated in Shimoga district were selected for their phytoplankton diversity and the possibility of using it as bio monitors of organic pollution. These algae occurred as regular blooms in all the seasons. Hosalli tank supports a wide diversity of phytoplankton and less polluted. The use of algae for bio monitoring of organic pollution indicates that Purle tank, which regularly receives sewage is heavily polluted and Hosalli tank is mesotrophic in nature of mild anthropogenic activities.

0601–059. Kavitha Kirubavathy A, Binukumari S, Mariamma Ninan, Rajammal Thirumalnesan (Dept Zoo, Chikanna Govt Arts Coll, Tirupur 641602). **Assessment of water quality of Orathupalayam reservoir, Erode district, Tamil Nadu.** *J Ecophysio Occupl Hlth*, **5**(1&2) (2005), 53-54 [5 Ref].

The water quality of Orathupalayam reservoir has been studied to ascertain the level of municipal waste contamination in it and further it's suitability for the irrigation. The physio-chemical end points studies have shown a heavy contamination of several undesired compounds and make it unsuitable for irrigation purpose.

0601–060. Kelkar PS, Nanoti MV (Natl Environ Engng Res Inst, Nagpur 440020) **Impact assessment of Ganga Action Plan on river quality at Varanasi,** *J Indian Water Work Assoc*, **37**(3) (2005), 225-234.

Extensive water quality assessment was undertaken in pre- and post-implementation period at 14.5 km stretch of the river at Varanasi. Water quality was assessed near the

bathing ghats and in the midstream. Water quality indicator showed substantial improvement in the river. The organic loading was reduced as represented by BOD and COD values.

0601–061. Kiran BR, Shastri Shekhar TR, Puttaiah ET, Shivaraj Y (Dept Std Res Environ Sci, Kuvempu Univ, Shankaraghatta 577451). **Trace metal levels in the organs of finfish *Oreochromis mossambicus* (Peter) and relevant water of Jannapura Lake, India.** *J Environ Sci Engng*, **48**(1) (2006), 15-20 [31 Ref].

Trace metal levels in the body organs of finfish, *Oreochromis mossambicus* (Peter) and relevant water was studied in Jannapura lake, located five kilometers from Bhadravathi town, Karnataka, India. Lead, copper and cadmium accumulation was higher in muscles than in gills while, zinc, nickel and cobalt accumulation was maximum in gills followed by muscles. The metals presents in the highest concentration were in the order of Pb>Cu>Zn>Cd>Ni>Co in the water samples.

0601–062. Kulshrestha H, Sharma S* (*Dept Microbio, Division of Life Sci, SBS (PG) Inst Biomedical Sci Res, Balawala, Dehradun 248161). **Impact of mass bathing during Ardh Kumbh on water quality status of river Ganga.** *J Environ Bio*, **27** (2 supplement) (2006), 437-440 [20 Ref].

Study highlighted that mass bathing during Ardhkumbh caused the changes in the river water quality and indicated that water is not fit for either drinking or bathing purposes. The presence of faecal coliforms in water also hints at the potential presence of pathogenic microorganisms, which might cause water born diseases. Although the water was found to be safe with respect to dissolved oxygen content, the values of BOD and COD exceeded the maximum permissible limit during bathing.

0601–063. Lingeswara Rao SV, Sambasiva Rao T, Sreenivasulu S (Dept Zoo, Sri Venkateshwara Univ, Tirupati 517502). **Analysis of groundwater of Nellore coast by correlation technique.** *Nature Env Polln Techno*, **4**(4) (2005), 545-549 [12 Ref].

Groundwater samples, covering all geological formations, were collected from 100 drinking water sources all along the Nellore coast and analysed for major physical and chemical parameters. Correlation coefficients among different chemical constituents were determined. The analysis of correlation coefficients indicates that the quality of ground water in the study area is saline and consist of high sodium chloride, magnesium bicarbonate and sodium sulphate.

0601-064. Mala R, Sarvana Babu S (PG Dept Biochem, VV Vanniaperumal Coll Women, Virudhnagar 626001). **Production and partial purification of peroxidase from water hyacinth plants induced by textile dyeing effluent.** *J Indl Polln Contl*, **21**(2) (2005), 321-326 [21 Ref].

Initially, the water hyacinth plants were gradually acclimatized to textile dyeing effluent from 5% to 50%. The production of enzyme was greatly induced by the strength of the effluent. The results indicated that, acclimatized water hyacinth roots could be a simple and easily available source for cost effective industrial production of peroxidase.

0601-065. Manjappa S, Puttaioh ET (Dept Chem, Univ BDT Coll Engng, Davangere 577004). **Evaluation of trace metals in the sediments of river Bhadra near Bhadravathi town, Karnataka, India.** *J Indl Polln Contl*, **21**(2) (2005), 271-276 [15 ref.]

Attempt has been made to evaluate trace metals in the Bhadra river bed sediments from four identified stations. The results of the analysis showed that trace metals in the river bed sediments are well within the Shale standards. Trace metals in the order of their relative dominence were in the sequence Fe> Al>Mn>Zn>Pb>Cr>Cu>Ni>Cd>Hg.

0601-066. Meenakshi, Maheswari RC (Cent Rural Dev Techno, Indian Inst Techno, Delhi). **Arsenic removal from water: a review.** *Asian J Water Env Polln*, **3**(1) (2006), 133-139 [49 Ref].

Article overviews the possible arsenic removal options for safe drinking water supply in the arsenic affected areas. All these options were tested in the laboratory and effect of various parameters was studied. Adsorption of arsenic on iron salts such as Granular Ferric Hydroxide (GFH) and silica ferric complex adsorbent (Sfca) was found to be most effective option for arsenic removal.

0601-067. Misra PC, Behera PC, Patel RK (PG Dept Chem, Natl Inst Techno, Rourkela 08). **Contamination of water due to major industries and open refuse dumping in the steel city of Orissa – a case study.** *J Environ Sci Techno*, **47**(2) (2005) 141-154 [18 ref].

Attempt has been made to evaluate the effect of industrial effluents on the ground and surface water due to Integrated Rourkela Steel Plant and other major industries. From the analytical data of physico-chemical parameters, it is indicated that the river water is contaminated mainly due to the industrial and municipal effluents and the ground water

of some of the analyzed areas is contaminated due to municipal and industrial solid waste dumping.

0601-068. Mitra Abhijit, Das Anumita, Chakarborty Rajiv, Banerjee Kakoli, Banerjee Subash, Bhattacharya DP (Dept Marine Sci, Univ Calcutta, 35, BC Rd, Kolkata 700019). ***Enteromorpha intestinalis* – an indicator of heavy metal pollution in coastal environment.** *Ultra Sci*, **17**(2) (2005), 177-184 [14 Ref].

Seasonal concentration of Zn, Cu and Pb were determined in three important estuarine macroalgae inhabiting three different station of the Sagar land. Metals in the algal tissue accumulated in the order Zn>Cu>Pb. Highest concentrations of these heavy metals were found in the surface water in the month of monsoon, the period characterized by lowest salinity and pH of the ambient aquatic phase. A unique compartmentation was observed between sediment and surface water with respect to selected heavy metals.

0601-069. Mohan S, Ramesh ST (Dept Civil Engng, Environ Water Resources Engng Div, Indian Inst Techno Madras, Chennai 600036). **Treatability studies and evaluation of biokinetic parameters for Chennai Municipal wastewater using activated sludge process.** *Nature Env Polln Techno*, **4**(4) (2005), 627-632 [6 Ref].

Batch study for activated sludge process was carried out with the wastewater collected from municipal sewage pumping station, Velachery, Chennai. Experiments were conducted with 'bio-logical solids retention time' (BSRT) of 2 days, 2.5 days, 5 days and 10 days using nutrient broth and dextrose spiked water as feed. It was observed that COD of effluents and SVI were decreased as BSRT increased, and the MLSS increased as BSRT increased. The influence of BSRT on activated sludge operation and performance has also been discussed.

0601-070. Namasivayam C, Suresh Kumar MV (Environ Chem Dev, Dept Environ Sci, Bharathiar Univ, Coimbatore 641046). **Surfactant modified coir pith, an agricultural solid waste as adsorbent for phosphate removal and fertilizer carrier to control phosphate release.** *J Env Sci Engng*, **47**(4) (2005), 256-265 [31 Ref].

The surface of coir pith, an agricultural solid waste was modified using a cationic surfactant, hexadecyltrimethylammonium bromide (HDTMA) and the modified coir pith was investigated to assess the capacity for the removal of phosphate from aqueous solution. Optimum pH for maximum phosphate adsorption was found to be 4.0. Thermodynamic parameters were evaluated and the overall adsorption process was spontaneous and endothermic.

0601-071. Nikhil Kumar (Environ Manag Gr, Centl Mining Res Inst, Barwa Rd, Dhanbad 826001). **Biotreatment of polluted water-vis-a-vis-socio- Economic development in coal mining area.** *J Indl Polln Contl*, **2**(2) (2005), 195-199 [5 Ref].

Irrespective of the mining methods employed, mining is bound to cause various environmental problems and one of them is water pollution. Besides this, sewage and industrial effluents water are also present in coal mining areas. Mechanical, chemical and other treatment methods for the sewage, mine and industrial effluents waters are found costlier. A bio-treatment option to recycle this polluted water for some useful purposes is discussed.

0601-072. Panda Unmesh Chandra, Rath Prasanta, Sahu Kali Charan, Majumdar Sabyasachi, Sundaray Sanjay K (Wetland Res Cent, Chilika Dev Authority, Bhubaneswar 751001). **Environmental quantification of heavy metals in the Subarnarekha, estuary and near-shore environment, east coast of India.** *Asian J Water Env Polln*, **3**(2) (2006), 85-92 [30 Ref].

Concentration of heavy metals in the sediments was measured from the river, estuarine and coastal environment off Subarnarekha River, Bay of Bengal. The degree of contamination of the sediments was evaluated through enrichment factor (ER), geo-accumulation index (Igeo) and pollution load index (PLI). The high ER's and Igeo values for Cu and Cr were due to the chromite and copper mines, and Cu ore processing plants situated on the upstream catchments of the river.

0601-073. Parikh Punita, Rao KS (Dept Biosci, Sardar Patel Univ, Vallabh Vidyanagar – 388120). **The response of *Chara* and *Oscillatoria* to remove Ni (II) ions from industrial waste water.** *J Indl Polln Contl*, **21**(2) (2005), 293-297 [10 Ref].

A blue green algae *Oscillatoria* sp. and green algae *Chara* sp. have been used to remove Ni (II) ions from effluent having high concentration of Ni and the effect of this metal on dry matter content of the algae. *Oscillatoria*, being blue green algae can efficiently remove/uptake Ni (II) ions than *Chara* from the industrial waste water. The metal concentration in the effluent and the dry matter content of both the algae are negatively correlated.

0601-074. Patel DK, Kanungo VK (Dept Bot, Govt Coll Sci, Raipur 492010). **Phytoremediation of domestic wastewaters by using a free floating aquatic plant *Pistia stratiotes* L.** *Nature Env Polln Techno*, **5**(1) (2006). 101-106[8 Ref].

A culture of aquatic plant *Pistia stratiotes* was grown in the domestic wastewater for a stipulated interval of seven days for phytoremediation. The results of analysis for pH and dissolved oxygen have shown an increase in values while other parameters exhibited significant decrease throughout the year. The increase in biomass of *Pistia stratiotes* and finding of physico-chemical analysis have proved that *Pistia stratiotes* is a suitable aquatic plant for Phytoremediation of domestic wastewater.

0601-075. Patil Dilip B, Kshirsagar A, Ganorkar Ajay P (Dept Chem, Inst Sci, Nagpur 440001). **Estimation of surfactants at ppm level from synthetically polluted water.** *J Indl Polln Contl*, **21**(2) (2005), 259-264 [10 Ref].

The level of surfactant in synthetically polluted water followed the order Aerial>Surf excel>Rin Shakti> Nirma. Study revealed that minimum amount of surfactant that could be estimated in synthetically polluted water of commercially available detergent like Aerial, Surf excel, Rin Shakti and Nirma were 39.0, 50.6, 58.1 and 72.2 ppm respectively.

0601-076. Pawar Anusha C, Nair Jithender Kumar, Jadhav Naresh, Vasundhara Devi V, Pawar Smita C (Dept Zoo, Univ Coll Women, Osmania Univ, Koti, Hyderabad 500195). **Physico-chemical study of ground water samples from Nacharam Industrial area, Hyderabad, Andhra Pradesh, India.** *J Aquatic Bio*, **21**(1) (2006), 118-120 [11 Ref].

The bore well and dug well water samples from a highly polluted industrial area – Nacharam were collected and analysed for physico-chemical parameters by adopting the standard methods for examination for water and waste water. The analyzed samples obtained a high values, compared with drinking water standards.

0601-077. Poonkothai M, Parvatham R (Dept Biochem Biotechno, Avinashilingam Deemed Univ, Coimbatore 641043). **Bio-physico and chemical assessment of automobile wastewater.** *J Indl Polln Contl*, **21**(2)(2005), 377-380 [11 Ref].

Physico-chemical and microbiological studies of automobile wastewater in Nammakkal, Tamil Nadu, India indicated that the values for physico-chemical parameters were on the higher side of permissible limits of BIS. Microbiological studies revealed the presence of bacteria at high concentration and these organisms serves as indicators for pollutants.

0601-078. Prabhakara Rao K, Radha Krishnaiah K (Dept Zoo, Sri Krishnadevaraya Univ, Anantapur 515003). **Pesticidal impact on protein metabolism of the freshwater fish *Cyprinus carpio* (Lin.).** *Nature Env Polln Techno*, **5**(3) (2006), 367-374 [35 Ref].

The total protein content increased in the gills and decreased in the muscle of the freshwater fish *Cyprinus carpio* at days 1 and 2 on exposure to lethal concentration and at days 1 and 10 on exposure to the sublethal concentrations of furadan, endosulfan, chlorpyrifos and mixture of these three in a 100:10:1 ratio. The results indicate that the changes in protein levels of the fish are organ-dependant, and also dependant on the concentration of pesticides.

0601-079. Raje GB, Muley DV, Mankar DD (Dept Zoo, Shivaji Univ, Kolhapur 416004). **Analysis of heavy metals in ground water from Lote industrial area in Ratnagir, district (Maharashtra).** *J Indls Polln Contl*, **21**(2) (2005), 381-386 [11 Ref].

Heavy metals in natural spring water and dugwell water from Lote Industrial Area and nearby villages have been monthly analysed. The results on trace metals indicated varying degrees of contamination in ground water which may cause a serious health problems to domestic animals and human beings.

0601-080. Ramanaiah S, Sambasivarao T, Niranjan Kumar K (Dept Geo, SV Univ, Tirupati 517502). **A rapid method to assess source of groundwater pollution through statistical approach.** *Nature Env Polln Techno*, **4**(3) (2005), 409-412 [2 Ref].

A method has been suggested to assess the source of groundwater pollution through the study of coefficient of variation of the parameteric ratios among the influencing parameters of groundwater samples. The usefulness of this approach has been demonstrated by applying this technique to about 25 samples collected in the vicinity of Kadapa town in Andhra Pradesh.

0601-081. Rokade PB, Ganeshwade RM (Dept Zoo, RB Attal Coll, Georai 431127). **Impact of pollution on water quality of Salim Ali Lake at Aurangabad.** *Uttar Pradesh J Zoo*, **25**(2) (2005), 219-220 [12 Ref].

Results showed high fluctuations in the physico-chemical parameters indicating the intensity of pollution. The pH ranged from minimum of 6.6 to maximum of 8.4, chlorides from 132.5 to 820.4mg/l, hardness ranged from 74 to 281 mg/l, CO₂ from 2.1 to 5.09, BOD from 4.437 to 112.432 mg/l, sulphates 0.192 to 5.12 mg/l, nitrates 0.5 to 1.012.

0601-082. Sahu Anita, Vaishnav MM* (*Dept Chem, GBVPG Coll, Hardibazar, Korba (C.G.)). **Study of fluoride in groundwater around the BALCO Korba area (India).** *J Environ Sci Engng* , **48**(1) (2006), 65-68 [13 Ref].

Study was undertaken for the determination of fluoride ions in drinking water at the BALCO, Kobra region by the ion selective electrode method. The fluoride concentration values varied from 1.07 ppm to 3.10 ppm. It was found that fluoride was present within the permissible limit (1.5 ppm) in most of the villages studied but the fluoride level was unacceptable in drinking water samples taken from some villages of BALCO, Kobra area.

0601-083. Samanta S, Mitra K, Chandra K, Saha K, Bandopadhyay S, Ghosh A (Centl Inland Fisheries Res Inst, Barrackpore, Kolkata 700120) **Heavy metals in water of the rivers Hooghly and Haldi at Haldia and their impact on fish.** *J Environ Bio*, **26**(3) (2005), 517-523 [17 Ref].

Paper deals with the measurement of five heavy metals viz., Cd, Cu, Mn, Pb and Zn in water of the rivers Hooghly and Haldi at Haldia. Most of the metals exhibited their least concentration at the sampling site above the Haldia industrial area of river Hooghly. Comparison of the data with the Criterion Continuous Concentration (CCC) of USA revealed that Cd, Cu and Pb were the pollutants present at alarming level to disturb the aquatic life process in the zone. The other two metals viz., Mn and Zn were probably less harmful to the aquatic ecosystem.

0601-084. Sawane AP, Puranik PG, Bhate AM (Dept Zoo, Anand Niketan Coll, Warora 442907, Dist Chandrapur). **Impact of industrial pollution on river Irai, district Chandrapur, with reference to fluctuation in CO₂ and pH.** *J Aquatic Bio*, **21**(1) (2006), 105-110 [10 Ref].

The minimum pH value of 6.3 mg/l was found during winter season and maximum of 8.93 mg/l in summer. The pH shows general decline from upstream to downstream. CO₂ was found to maximum in summer reaching up to 55.44 mg/l and reduced to a minimum of 2.28 mg/l during rainy season. From the data collected it can be concluded that the inverse relationship, which is known to exist between pH and CO₂, is not existing in the present investigation.

0601-085. Saxena Pratibha, Sharma Subhashini, Sharma Shweta, Suryavathi V, Grover Ruby, Soni Pratima, Kumar Suresh, Sharma KP (Dept Zoo, Univ Rajasthan, Jaipur 302 004). **Effect of acute and chronic toxicity of four commercial detergents on the freshwater fish *Gambusia affinis* Bairds Gerard.** *J Environ Sci Engng*, **47**(2) (2005), 119-124 [25 Ref].

The toxic effect of four commercial detergents (two washing powders and two cakes) on behavior, mortality and RBC counts of a freshwater fish *Gambusia affinis* are reported. During acute toxicity studies (96h), surface movements of fish increased markedly for 24h, only at higher concentrations (>10ppm) of all the four detergents. During acute toxicity studies, cakes ($LC_{50} = 6.69-19.98$ ppm) were found more toxic than powders ($LC_{50} = 18.34-20.72$ ppm).

0601-086. Shailaja K, Johnson Mary Esther C (Limno Lab, Dept Bot, Osmania Univ Coll Women, Koti, Hyderabad 500195). **Heavy metals in the ground waters of same areas of Hyderabad.** *Nature Env Polln Techno*, **5**(3) (2006), 447-449 [12 Ref].

The ground water quality of Hyderabad has been examined with reference to heavy metals contamination. Twentyfour samples were collected during pre and post monsoon seasons and analysed for various heavy metals. The heavy metals in ground waters were mostly below the prescribed maximum permissible limits in all the samples. The concentration of zinc, lead and chromium were found well within the permissible limits in all the samples of Hyderabad district.

0601-087. Sharma Madhvi, Ranga MM, Goswami NK (Dept Zoo, Govt Coll, Ajmer Rajasthan). **Study of groundwater quality of the marble industrial area of Kishangarh (Ajmer), Rajshthan.** *Nature Env Polln Techno*, **4**(3) (2005), 419-420 [5 Ref].

Ground water quality of industrial area of Kishangarh was studied for various physico-chemical parameters seasonally without and after addition of marble slurry in different proportions. From the study it is clear that these parameters increase with the addition of marble slurry leading to deterioration of the overall quality of the groundwater.

0601-088. Shivram Hari Singh, Kumar Dinesh, Singh RV (Dept Chem, Univ Rajasthan, Jaipur 300204). **Improvement of water quality through biological denitrification.** *J Environ Sci Engng*, **48**(1) (2006), 57-60 [10 Ref].

Results show that the value of pH and alkalinity was increased due to generation of alkalinity during biological denitrificaion process. The obtained value of the DO in the treated water was found lower than the supplied water, and the COD of the treated water was nil. The biological reduction of nitrate-nitrogen (from 50.79 mg/L to 0.57 mg/L) was found to be lower than the tolerance limit prescribed by WHO without changing the water quality.

0601-089. Singh Rajesh, Yadav Archan (Dept Zoo, Univ Allahabad, Allahabad 211002). **Impact of carpet dyeing units wastewater on total chlorophyll contents and biomass of certain aquatic macrophytes.** *Indian J Environ Sci*, **9**(2) (2005), 137-139 [9 Ref].

In comparison to controls, total chlorophyll contents (30-50%) and biomass (1-10%) of *Typha latifolia*, *Hydrilla verticillata* and *Lemna minor* decreased when grown in cent percent carpet dyeing industry wastewater for 7,14 and 21 days. Percentage reduction in both biomass and chlorophyll content was minimum in *Hydrilla* and maximum in *Typha*.

0601-090. Singh V, Chandel CPS (Dept Chem, Univ Rajashtan, Jaipur 302004). **The potability of groundwater in terms of Water Quality Index (WQI) of Jaipur city.** *Cheml Environ Res*, **13**(3&4) (2004), 307-314 [20 Ref].

Ground water samples from various hand pumps of eight adjacent localities of various industrial areas in Jaipur city were analyzed with the help of standard methods of APHA. The values obtained were compared with standards of ISI, ICMR and WHO. It was observed that the pH, EC, Ca²⁺, Na⁺, K⁺, Mg²⁺, SO₄²⁻, CO₃²⁻, HCO₃⁻, Cl⁻, DO and BOD values are within permissible limits of ISI, ICMR and WHO but NO₃⁻, TDS, TH, COD and WQI values show poor water quality in most of the studied groundwater samples taken.

0601-091. Singhal V, Kumar A, Rai JPN (Ecotechno Lab, Dept Environ Sci, GB Pant Univ Agricl Techno, Pantnagar 263145). **Bioremediation of pulp and paper mill effluent with *Phanerochaete chrysosporium*.** *J Environ Res*, **26**(3) (2005), 525-529 [16 Ref].

Study reports on the treatment of pulp and paper mill effluent by *Phanerochaete chrysosporium* and the same has been compared at two different pH 5.5 and 8.5. At both the pH, colour, COD, lignin content and total phenols of the effluent significantly declined after bioremediation. However, greater decolourisation and reduction in COD, lignin content and total phenols were observed at pH 5.5.

0601-092. Sonaware DS, Shrivastava VS (Cent PG Res Chem, GTP Coll, Nandurbar 425412). **Hazardous metals in marine sediments and water.** *Cheml Environ Res*, **13**(3&4) (2004), 221-226 [17 Ref].

The marine sediments and water samples were collected from Girgaon Chaupati, Juhu Chaupati, Mumbai and Dumas, Surat respectively. The concentration of hazardous metals like Cu, Zn, Pb, Ni, As, Hg, Fe, Cr, Mn and Co were determined by ICP-AES. The concentration of these metals in marine sediments and water samples were found to be higher as compared to respective ISI and WHO standards.

0601-093. Sudha PN, Backyavthy D, Manley (Dept Chem, DKM Coll, Vellore 632001). **Levels of trace metals in industrially polluted soils of Ranipet industrial town, Vellore district, Tamil Nadu.** *Nature Env Polln Techno*, **5**(3) (2006), 421 – 424 [13 Ref].

Villages located near this industrial area whose main occupation is agriculture are adversely affected due to these industries. Investigation has been conducted at four different sites to estimate the levels of trace metals in the soil. The levels of some metals were found to be exorbitantly high which need immediate attention.

0601-094. Sunil Kumar S, Lokesh SV, Puttaiah ET, Sherigara BS, Harish Babu K (Dept Stud Res Environ Sci, Kuvempu Univ, Jhane, Sahyadri, Shankaraghatta 577451). **Analysis of trace metals in river Tung of Karnataka by differential pulse anodic stripping voltametry (DPASV).** *Nature Env Polln Techno*, **5**(3) (2006), 425-428 [12 Ref].

Water samples from river Tunga were collected and analyzed for the presence of trace metals by Differential Pulse Anodic Stripping Voltametric (DPASV) method. The study reveals that all the trace metals are well within the maximum permissible limits, however, check should be kept on the anthropogenic inputs to restore the quality of this valuable natural resource.

0601-095. Sunil Kumar S, Puttaiah ET*, Manjappa S, Prakash Naik S, Kumar Vijay (Dept Environ Sci, Kuvempu Univ, Shankaraghatta, Karnataka 577451). **Water quality assessment of river Tunga, Karnataka.** *Env Eco*, **24**(5) (1) (2006), 23-26 [7 Ref].

Study revealed that DO levels were observed to be 100% of saturation concentration. The concentrations of nitrite, nitrate phosphate, sodium and potassium were considerably low when compared with that of groundwater in the region. However, values of all the parameters are observed within the range of GIS specification. Quality assessment of Tunga river water shows that surface water is suitable for domestic use although check should be kept on anthropogenic and diffuse inputs.

0601-096. Sunita S, Bakre VP, Bakre PP (Environ Bio Lab, Dept Zoo, Rajasthan Univ, Jaipur 302004). **Effects of textile industry sludge on key organ, hepato-pancreas of *Gambusia Offinis*.** *J Ecophysio Occupl Hlth*, **5**(3&4) (2005), 223-227 [12 Ref].

The toxic effluent generated at different textile and printing units after treatment, the sludge generated is allowed to dry in drying beds and dumped far from the plant would

leach and make their way to local Bandi river through sub-soil movement. The ill effects on fish *Gambusia affinis* was studied by exposing it to 1/1000, 1/500 and 1/100 leachate concentrations. Hepato-pancreas was studied for histopathological damage. The organ showed pathological disintegration that was dose and time dependent.

0601-097. Tiwari Pushpendra, Saxena Prabha N (Toxic Lab, Dept Zoo, Sch Life Sci, Dr. BR Ambedkar Univ, Agra). **Response of biotransforming organs in *Labeo rohita* to chromium and nickel in Yamuna water at Agra.** *J Ecophysio Occpl Hlth*, **5**(1&2) (2005), 37-40 [28 Ref].

The carp, *Labeo rohita* was sampled and analyzed for their qualitative and quantitative presence of heavy metals at the biotransformation site, the liver and kidney. The fishes were sacrificed on 1st, 15th and 30th of the month and the heavy metals revealed their presence in the liver and kidney. Chromium was found to be more than nickel. Both the heavy metals revealed their higher concentration in liver than in kidneys. The studies advocate the use of treated Yamuna water for drinking and domestic purposes.

0601-098. Tiwari RK, Rajak GP, Mondal MR (Env Manag Gr, Centl Mining Res Inst, Barwa Rd, Dhanbad 826001). **Water quality assessment of Ganga river in Bihar region, India.** *J Environ Sci Engng*, **47**(4) (2005), 326-355 [16 Ref].

The physicochemical analysis of Ganga river shows that the water has high TDS, TSS, BOD, and COD. The coliform bacteria were found to be alarmingly high in the river. Most of the parameters analyzed were found high near the bank in comparison to the water in the middle stream of that station. The study revealed that due to discharge of untreated sewage into the Ganga, the water quality of Ganga has been severely deteriorated and the potable nature of water is being lost.

0601-099. Zargar S, Ghosh TK (Environ Bio techno Div, Natl Environ Engng Res Inst, Nagpur 440020). **Influence of cooling water discharges from Kaiga nuclear power plant on select indices applied to plankton population of Kadra reservoir.** *J Environ Bio*, **27**(2) (2006), 191-198 [40 Ref].

During the study period 49 and 22 genera of phytoplankton and zooplankton respectively were recorded at surface waters, Diversity indices indicated oligotrophic nature of the lake. Dissimilarity was more amongst the planktons in between intake and discharge point. Studies revealed that there was negative impact of evaluated temperature on plankton up to 500 m from discharge point.