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# Effects of idol immersion in the water quality parameters of Indian water bodies: Hydrological, ecological and health perspectives

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India is a rich cultural country in which diverse cultural and religious festivals are organized. Idol is an image of a god which is used as an object of worship. After worship, these idols are immersed into water bodies. Idols are constructed by plaster of Paris, clay, cloths, small iron rods, bamboo and decorated with different paints such as varnish, water colors etc. which can lead to significant alteration in the water quality after immersion. Paints which are used to colour these idols contains various heavy metals such as Mercury, Cadmium, Arsenic, Zinc, Chromium and Lead. Particularly, red, blue, orange and green colours contain mercury, zinc oxide, chromium and lead, which are potent carcinogens. Two heavy metals such as Lead and Chromium also add in the water bodies through *Sindoor* (a traditional red colored cosmetic powder, usually worn by married women and often used in the festivals). The floating materials released through idol in the river and lake after decomposition result in eutrophication, increase in acidity and heavy metal concentration. Heavy metal pollution caused by idol immersion can damage the ecosystem as it kills fishes, damages plants, blocks the natural flow of the water, causing stagnation. The effects of idol immersion on various water bodies of India like Bhoj wetland, Budhabalanga river, Ganges river, Hussainsagar lake, Kolar river, Sarayu river, Tapi river, Chhatri lake, north and west lakes of Bangalore and Yamuna river have been observed so far. Investigations were carried out to find out the effects of immersion of idols on water quality by collecting and analyzing the water samples from the immersion sites of the rivers. The samplings were done before the immersion, on the day of immersion and after the event and several parameters like temperature, pH, dissolved oxygen, BOD, dissolved $CO_2$, conductivity, salinity, alkalinity, TDS, total hardness, chlorides etc. are estimated. Most of the studies found significant changes in the water quality parameters during and after immersions. Central Pollution Control Board has formulated guidelines on the practice of idol immersion in water bodies, which should be followed for controlling pollution.

## Biography

Sayan Bhattacharya completed his MSc and PhD in Environmental Science from University of Calcutta. He has been engaged in Post Doctoral Research in Dept. of Chemistry, Presidency University from September, 2012 to present. He has published 18 international journal papers, 10 book chapters, 30 international conference proceedings and many national conference proceedings. He received Young Researcher Award from Govt. of India International Conference. He is in the reviewers' committee of many international journals and in the editorial boards of international journals with high impact factors. He has over 7 years of teaching experiences in 5 colleges and universities of West Bengal.

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