

A reactor for removal of persistent pollutants present in potable water

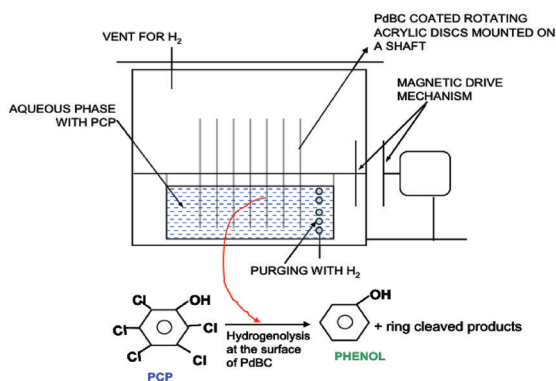


Fig.1: Schematic diagram of reactor used for treating water containing chlorinated pollutant PdBC = palladised bacterial cellulose, PCP = pentachlorophenol is an example of chlorinated pollutant

Water is no longer a safe and free commodity because most perennial Indian rivers are polluted with persistent organic pollutants. Thus provision of clean and safe potable water to all sections of society is the key challenge faced by our nation today. Clean water is also the key to enable Indian

industries to produce goods of environmentally acceptable quality.

A project completed by us is an endeavor to provide an indigenous patented technology for the removal of priority chlorinated pollutants in potable water. We have designed a versatile reactor (Fig. 1) which involves the usage of palladium immobilised on an eco-friendly biopolymer, bacterial cellulose (Fig. 2) for degradation of priority chlorinated pollutants to a non-toxic end-product using a suitable reductant. DDT, pentachlorophenol, endosulfan, trichloroethylene and nitrate are some of the non-point source pollutants present in ground and surface water bodies which can be effectively removed using the reactor. We would like to emphasise that there are a number of challenges that need to be tackled prior to translating the technology developed by us for field scale applications; be it ground, surface or industrial water treatment. Clearly more investment in terms of time and finance is the way forward for improving the technology.

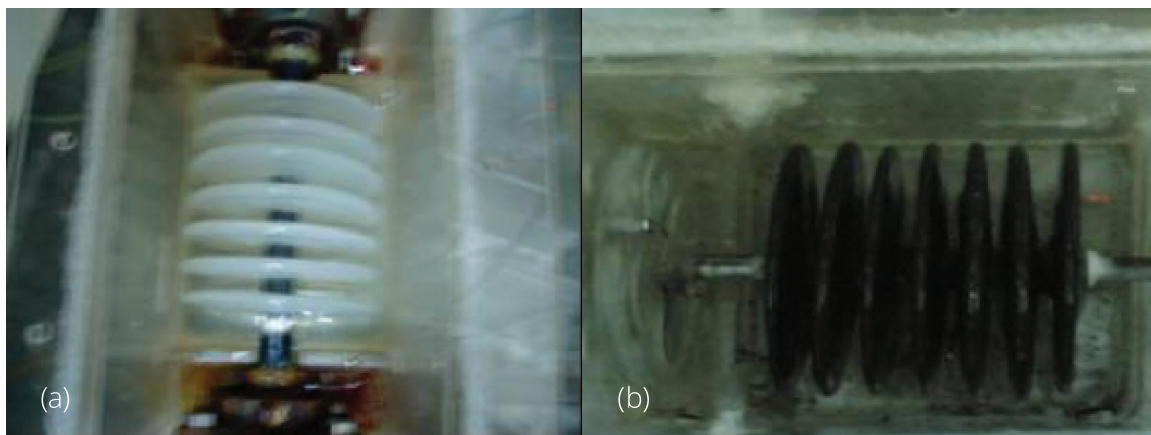


Fig.2 (a) Bacterial cellulose immobilised on acrylic discs (b) Palladised bacterial cellulose on acrylic discs