

**ABSTRACT
PARALLEL WORKING SESSION**

HEALTH

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NUST initiatives for clean water in Pakistan

This university is involved in a number of social service and civic initiatives at the national level. In this paper, however, we limit ourselves to some of the activities of our Institute of Environment Science and Engineering (IESE), concerning water.

Water filtration plants have been installed by the government all over the country. IESE was involved in the initial site survey looking at the physical location, accessibility to electric power, convenience to the beneficiaries and, of course, the chemical composition of the source water. Under a pilot project, sponsored by UNSECO, residents along the banks of Nullah Leh, a stream in Rawalpindi receiving untreated municipal waste and industrial effluents were made aware as to how to improve their quality of life, through community workshops and practical demonstration of low cost interventions. In another project, through intensive sampling and analysis, the level of disinfection of the drinking water being supplied to the local community is to be optimized. A Combined Effluent Treatment Plant for treating the municipal and textile industry wastewater in the city of Faisalabad is being designed. IESE is also designing a more efficient, and economical to run, water treatment system for the highly turbid water in the city of Chakwal. Through use of the Membrane Bioreactor Technology the possibility of wastewater re-use is being looked at. In addition to the above, the Nanotechnology Group at IESE has initiated a number of activities using Titanium Oxide nanoparticles such as Arsenic Removal from water; removal of organic contaminants from drinking water; water desalination through Capacitative Deionisation (CDI); and Microbial Fuel Cells (MBC) etc