Low cost system could cut size of wastewater treatment plants by half

From our ANI Correspondent

Madrid, Aug 12: Researchers at the University of Granada in Spain have developed a low cost technology to obtain water of high quality that also claims to reduce unwanted mud production.

The scientists say their wastewater treatment system has three clear advantages with respect to systems currently used: it is possible to obtain cheaper water of a higher quality; it considerably reduces the size of treatment plants by more than half, and it minimizes the resulting mud production.

The technology is based on the membrane bioreactor systems, which makes it possible to shorten the water clarification process (by which active mud is separated), eliminating the stage known as "secondary decanting".

The structure of every plant currently has four stages: pre-treatment, primary decanting, biological reactor and secondary decanting. A tertiary treatment can also be added whenever water is used for irrigating.

The research carried out by José Manuel Poyatos Capilla from the university's Department of Civil Engineering showed that they could reduce the size of the biological reactor between 40 and 60 percent and completely eliminate secondary decanting, replacing the two with a "biological process" section in their wastewater treatment plant, making it possible to separate water from active mud by a membrane filtration process.

"In the future - we could even suppress the primary decanting stage," said Capilla.

"This researched and optimized system makes it possible to treat a larger flow of water in a smaller purifier, and its building would involve a less expensive construction. Installation is therefore much cheaper than installation of plants with tertiary treatment, and it also makes it possible to use the water immediately after it has been biologically treated," he said.

The findings appear in the 'Journal of Environmental' and 'Microbiology and Biotecnology'.