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Students develop low-cost automatic urinal flushing system

MADURAI: In a bid to solve the problem of stinking public urinals, [students](#) of the mechanical engineering department at Velammal College of Engineering and Technology have come up with an innovative urinal with automatic water flushing.

"Despite sensor-enabled automatic water flushing urinals available in the market, they cannot be installed in public toilets as they cost more. The starting price of such sensor urinals would be Rs 5,000. Moreover, they need continuous monitoring and battery maintenance. Whereas, the simple mechanical equipment which we have developed at only Rs 440 can be attached to the ordinary urinals," claimed G R Malarmannan, a final year student, who developed the mechanism along with two second year students, S Emmanuel Richards and R M Pearlson.

"The urinal is designed for frugal water usage as it allows only 350 ml of water for every flush. When the user gets down off the urinal platform the water flush is automatically on. The spring arrangement suspended, under the platform enables it to come down. As a result, a 350ml container connected with the water source would be filled due to a mechanical element attached to it. When the user gets off the platform, the water is released from the container to flush the urinal," the students explained.

The simple mechanical urinal has won several accolades both at national and international-level technical contests. It was shortlisted in the International Mechanical Engineering [Congress](#) held in the USA last year. Understanding the feasibility of the urinal, K Veera Raghava Rao, erstwhile corporation commissioner of Trichy city approached the students for the installation of such urinals in public places. However, before the project could commence, the commissioner was transferred, the students said.

The students have also developed another equipment, which can help rubber tappers. After seeing a news report from Kerala last year about cash award to anyone who comes up with a viable model and cost-effective mechanized rubber tapping knife to solve the problem of employees in rubber milk tapping, the final year students M Venkatesh and Malamannan along with Richards decided to come up with one.

They developed a handheld semi-automatic rubber-tapping machine using a motor, which can be used with a battery. Using the machine, a labourer can tap milk from 300 trees in the morning hours, which is the apt time for the work. They can collect milk from only 50 trees using their conventional knife, the students claimed.

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Similarly, the students have exhibited more than 15 innovations including detection and signalling for trains at unmanned level crossings, semi-automatic fish scaling machine, automatic toilet cleaner, jasmine flower winding machine, automatic feeder button riveting machine, high-efficiency domestic gas burner, stair climbing trolley, remote-controlled floor cleaner and dust-free blackboard duster.