

# Meet the 'dhobi' that washes clothes and burns your calories too

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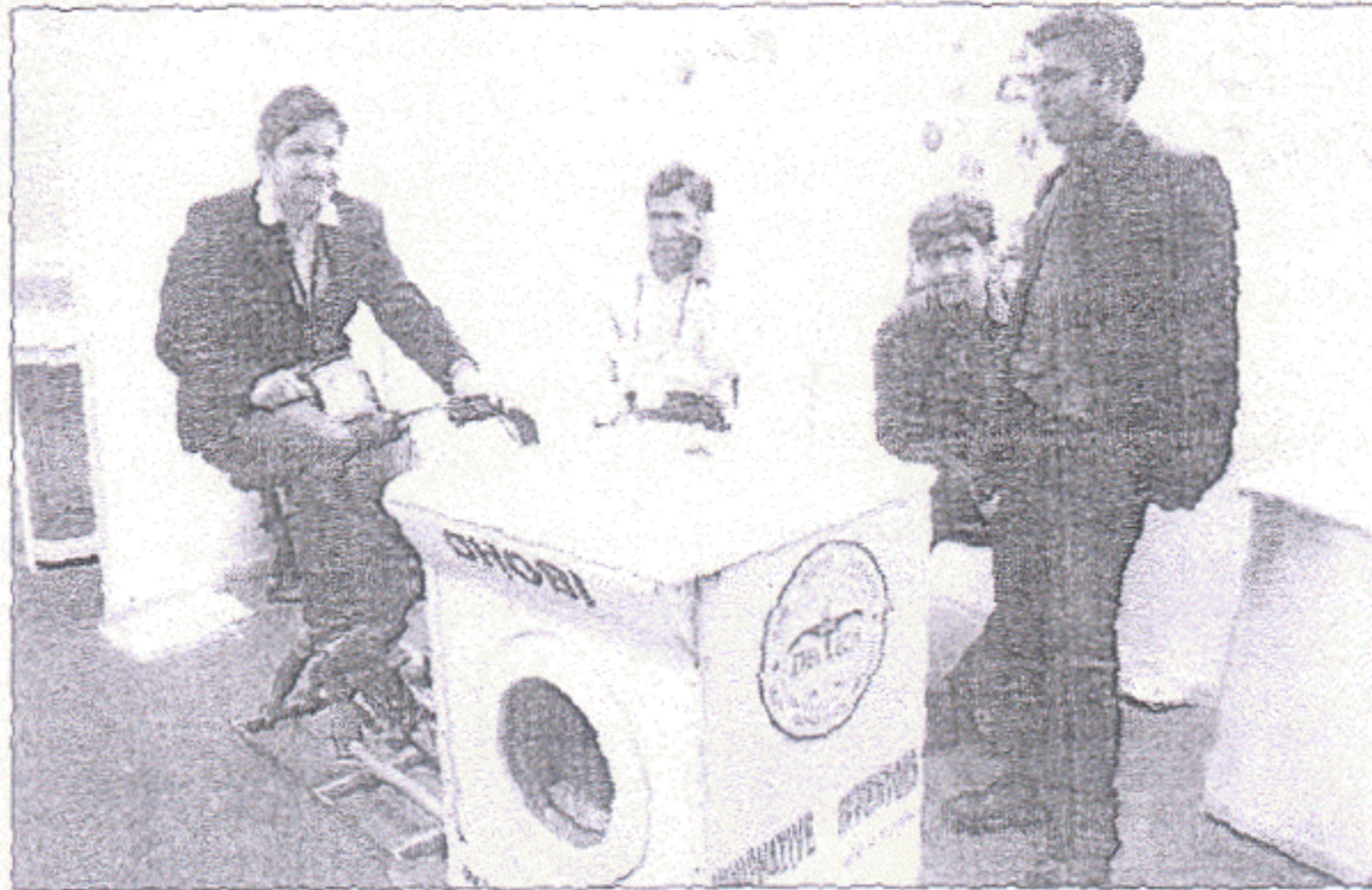
**New Delhi:** It is hard to imagine a washing machine, which could double up as exercise equipment, and also help in saving energy. However, with their out-of-the-box thinking, a team of five students have developed a pedal-powered washing machine, which can run without electricity. The machine — developed by two computer science students, one student each from mechanical, civil and electrical branch of engineering at Delhi Technological University (DTU) — will be useful in rural areas as well where there is no electricity.

The team claims that the machine, called Dhobi, is like any other fully automatic washing machine available in the market except that it does not have the heating facility for drying clothes. What's more, people can also burn cal-

ories as they pedal to wash the clothes. Second-year computer science student Vishma Rai said, "We have been working on this project since 2010. The inspiration for this is a cycle rickshaw. A conventional washing machine es-

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entially uses a motor to rotate fins which furiously stir water for the purpose of cleaning clothes in a water and soap solution. Our machine, Dhobi, uses bicycle components to simulate motor action. Our design resembles a



**MULTI-PURPOSE:** The machine has been designed by students of DTU

horizontal axis washer, which is commercially available."

Recently, the model won the first prize at the Innovative Green Energy Technologies for India 2011. According to the team, they have created two versions of the machine — one for rural India and the other for the urban segment. "It is a simple machine.

When we pedal it will move the gear system and subsequently the shafts. The shafts in turn will move the inner drums. For change of drums one can change the gear. The only thing it lacks is the hot drying facility. The model we designed for the urban segment also have a digital meter and a dynamo, which is not there in the rural one," said Rai.

According to the makers of the model, another plus point apart from energy saving is the economy factor. On an average, a washing machine is

rated at 2,200 watts. For a washing cycle of 90 minutes, assuming a unit rate of Rs 3.5, the cost comes to Rs 12 per wash. Now for a household of five members, the machine is operated twice a day, that makes the expenditure Rs 24 per day.

"Therefore Rs 740 is electricity cost on washing clothes every month. But our Dhobi is an one-time investment of Rs 3,500 for a rural household and Rs 4,500 for the urban household. All parts are practically maintenance-free and if any part stops functioning, it can be easily changed. The system does not become redundant," explained Rai.

The machine promises saving of precious time, offers much needed exercise at no extra effort and a sustainable green technology for both the urban and rural masses.

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