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A whiff of change

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The inventor: Keshav G with his machine.

To ease the burden of agarbatti makers and increase their income, a IIT graduate develops an innovative machine

To reduce the drudgery from the lives of workers who roll 3,000 incense sticks a day with bare hands to earn as little as Rs. 20 per 1,000 sticks, an IIT Gandhinagar graduate is developing a low cost machine.

To be incubated by IITGN and be ready as a marketable product by the year end, the machine is aimed at increasing the income levels of the workers.

Keshav G, a student from the maiden batch of IITGN who graduated this year, started developing the machine as a classroom project a year ago.

When Keshav came face to face with slum dwellers in Bangalore making bundles of sticks for a pittance, he took up a project to design a low cost machine that would produce incense sticks at a faster rate to generate more income.

Agarbatti production is concentrated in and around Bangalore, Tamil Nadu and Gujarat among other places and employs home based workers, most of whom are women and children. Many of them are employed by a contractor to manufacture *agarbattis* for a big company that brands, promotes and markets the products. Since they work from homes or small premises, and in the absence of any signed contract between the employer and employee, they are not protected by any labour laws, while health hazards and other issues persist.

“*Agarbatti* worker has to bend down and work on a wooden board for 8 to 10 hours a day rolling *agarbattis*. This kind of arduous labour leads to spinal pain, pain in the hands and legs. The fine dust of charcoal enters the nostrils and in the long term can damage the respiratory system and eyes. One feels suffocated due to the wooden dust and strong scented process. Since the surface of wooden board is rough, often the palms get bruised and the skin gets worn,” said Keshav.

While Keshav has made a working prototype of wood which is about three feet long, the IITGN graduate plans to make the final product largely with polymer composite. “Use of polymer composite will keep the product light in weight and also reduce the cost of the machine,” said Keshav.

The machine aims to have a capacity of producing around 6000 incense sticks a day. The workers will have to manually prepare the dough and feed it into the machine. The machine flattens the dough and cuts it into pieces of

long stripes. The thin bamboo sticks are dropped into another slot. A wooden roller wraps the dough strips around each stick.

The machine has been designed to be hand driven so that it cannot be used by the manufacturers directly to replace the workers. Priced at Rs. 1,000 it will be more affordable than the Rs. 15,000 - 20,000 ones currently available in the market within reach of the women who work from home.

Keywords: [agarbatti makers](#), [Keshav G](#), [machine to ease Agarbatti workers](#)

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