

## Israeli company turns old rubber back into... rubber

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Millions of tons of old tires fill our rubbish tips and pollute our water and earth. Lev gum takes these old tires and turns them back into their original form to make new products. Ever since Charles Goodyear invented a novel way to vulcanize rubber making it strong and stable for tires, scientists the world over have been searching for ways to reverse the process. Millions of tons of old tires and rubber waste collect in landfills -- their chemicals leaching into our groundwater. When tires burn, pollutants fire into the sky.

While some companies have discovered ways to turn vulcanized rubber into something else -- such as fuel -- an Israeli company, Lev gum, believes it has developed the best solution yet: turning the rubber back into its principle components, for reuse.

"We can deal with any rubber waste: tires, old conveyer belts, rubber from mattresses, solid tiles, anything," Ran Zamir, Lev gum's CEO, tells ISRAEL21c. Basically, he adds, the company can handle any rubber waste that has been sulphur cured -- curing being the process used to stabilize the rubber, and "invented by Mr. Goodyear," says Zamir.

In 1843, Goodyear found that by removing the sulphur from rubber, and then heating it, the rubber could retain its elasticity. Called vulcanization, the process turned rubber into a material that was both waterproof and winter-proof. "That's what gives it its value, otherwise rubber would change its form and shape every time you touch it," says Zamir.

### A green process

Unlike Goodyear, who never owned shares in the tire company that eventually came into being ("They just named the company after him," Zamir explains), Lev gum expects to make serious money from undoing the vulcanization process that Goodyear started many years ago. And according to Zamir, the company's approach does more than return value to old tires and rubber, the process is very green, he says.

"We return the rubber to its original form. Think of the things we do much like baking a cake. I can now give you a patent that will turn the dry cake back into dough. We can't separate the components back into 'eggs' and 'flour,'" but we can reuse the rubber for similar products to its original purpose, says Zamir.

"The dough from the bread, for example, could easily become rolls."

Metaphors aside, Lev gum has developed a patented process based on the science of Russian Jews who immigrated to Israel. A chemical-mechanical process, using off the shelf chemicals, Lev gum can transform rubber back to usable forms at room temperature.

"We are able to do this in a cost-effective way. There is no sewage waste, no leftovers. It's green all the way through," Zamir maintains.

### Mulch from Wal-Mart

Rather than building its own plants, Lev gum licenses its technology to other companies and industries. One licensee in America is New Rub Tire Recycling LLC, in partnership with RMD Americas. One recycled product these companies now sell at Wal-Mart, is rubber mulch for the garden. "Rubber is better than wood, it lasts longer, and it is painted and coated so it doesn't leach into the soil," says Zamir.

Reusing tires is green for the planet too: "One would not use 60 percent of the fossil fuels needed for rubber today," says Zamir. "And even to make the natural rubber you need to use fossil fuels to cut the trees, and for transportation."

### Goodyear now a partner

Lev gum, which is based in Gedera, Israel, was founded in 1998. Today it has seven licensees around the world, and on the industrial scale recycles thousands of tons of rubber every year. Five people work for the company.

Its biggest markets depend on the country. In India, it's the retread industry and tires; in Turkey, it's shoe soles, while in Greece, it is conveyor belts. The rubber industry in America, says Zohar, includes everything. "All the things you can think of that comes from rubber," he says. And the icing on the cake there: "We now have a joint R&D deal with Goodyear which has tested our material. We're working with them to make sure the [recycled] compound is good for them."