

Monday 11 June 2012
News updated at 2:28 PM IST

Scientists develop strong plastic to replace steel

Tel Aviv, June 8 2012, Agencies:



Israeli scientists are developing a super strength polypropylene, one of the world's most commonly used plastic, to replace steel and other materials used in pipelines and machinery.

Moshe Kol, professor of chemistry at Tel Aviv University (TAU) who is behind the project, said this could have a long-term impact on many industries, including car manufacturing, in which plastic parts could replace metallic car parts.

Durable plastics consume less energy during the production process. And there are additional benefits as well. If polypropylene car parts replaced traditional steel, cars would be lighter overall and consume less fuel, for example, Kol was quoted as saying in the journal *Angewandte Chemie*.

And because the material is cheap, plastic could provide a much more affordable manufacturing alternative. Although a promising field of research, biodegradable plastics have not yet been able to mimic the durability and resilience of common, non-biodegradable plastics like polypropylene, according to a university statement.

Kol and his team have succeeded in developing a new catalyst for the polypropylene production process, ultimately creating the strongest version of the plastic, reaching the highest melting point to date.

Beyond car parts, Kol envisions a number of uses for this and related plastics, including water pipes, which he says could ultimately conserve water use.

“Plastic pipes require far fewer raw materials, weighing ten times less than steel and a hundred times less than cement. Reduced leaking means more efficient water use and better water quality,” Kol explained.

