

News Release



Innovations in Plastics: ‘You Ain’t Seen Nothing Yet’

Toronto, ON – March 27, 2014 - Innovation: the ability to create new products, new services, new markets. It’s one of the hallmarks of the Canadian experience.

It’s also one of the key characteristics that Canadians ascribe to plastics.

Most Canadians view plastics – and also plastics makers – as innovative. While plastics certainly have their detractors, most Canadians agree that over the years plastics have made our lives better. And unlike some opinions about plastics, this belief is anchored in reality – plastics truly have been at the forefront of many modern advances.

Many in the industry have spent considerable resources reinforcing this opinion. For example, back in the 1990s, plastic makers joined together to showcase ongoing innovations by highlighting how plastics made possible many of the products that had improved our lives – from incubators for premature babies to football pads for our teens to shatter resistant bottles in the shower.

Over the past few years, many of those same companies have been working together to underscore how plastics have contributed to sustainability by enabling us to do more with less. From more fuel-efficient cars to minimalist packaging to energy saving building products, innovations in plastics have helped us do more in our lives with less impact on the environment. By enabling advances in global sustainability, modern plastics profoundly improved our ability to create a better life while caring for the future.

So that’s what plastics have *done*. Is this still the case today ... or have innovations in plastics run their course?

Not by a long shot. Seemingly every day there are exciting developments in materials technology, engineering, and chemistry that are making life easier, safer and more sustainable. Think: lighter weight aircraft. Stronger and safer automobiles. Composite wind turbine blades. “Active” packaging to reduce food waste. Even “unapologetically plastic” smart phones.

Frankly, you ain’t seen nothing yet.

Perhaps now more than ever, innovations in plastics are allowing us to do things that very recently were unimaginable. So plastics (and their makers) will continue to contribute to new, cutting edge innovations in health/safety/medical equipment, aeronautics, 3-D printing, sustainability and more.

Following are just some examples of new innovations or promising research which are impressive and quite diverse, from life saving wound dressings for the battlefield to an all-plastic umbrella that won an international design award:

Saving Lives

- [Dissolving plastic heart stent](#) – Heard of dissolving stitches? Now there's a dissolving heart stent! It restores blood flow to the heart – and then dissolves into the body, unlike a metal stent.
- [Printing plastic bones](#) – Doctors use plastics (PKKK or polyetherketoneketone) to replace 75 percent of man's skull. Manufacturer says 3-D printed plastic implants can replace injured bones throughout the human body.
- [A few precious minutes](#) – Synthetic platelets made with plastics may save lives by slowing internal bleeding of wounded soldiers or crash victims, researchers say.
- [Plastic eye lens](#) – Hundreds or thousands of ultra-thin layers of plastics form a lens that works like the human eye lens – and potentially may be used to repair damaged human eyes.
- [Fighting infection](#) – Revolutionary plastic that repels bacteria could be used in medical devices to improve the human immune system's ability to fight infection.

Saving Energy

- [The "power" of plastics](#) – Breakthrough in solar power? Stanford University researchers have dramatically improved the ability of lightweight plastic solar cells to absorb sunlight and conduct electricity.
- [Taking flight with plastics](#) – Plastics from Bayer and Solvay help lighten the load on innovative airplane that crossed the country using solar power. Next trip for the "Solar Impulse"? Around the world...
- [Corvette Stingray](#) – Plastics + carbon fiber = ultra cool, lighter 2014 Corvette Stingray. Tough, lightweight plastic composites help cars go further on a litre of gas – and improve safety and performance.

Self-healing Plastics?

- [Heal thyself](#) – Remember the liquid metal cyborg in Terminator 2 that could repair itself? Researchers have developed a plastic (nickname: Terminator) that heals itself after being cut into pieces.
- [Stronger under stress?](#) – Duke University researchers have created a plastic they say actually gets stronger when stressed—it may find uses in artificial hearts and prosthetics. (Or maybe cell phones...?)

New Feedstocks for Plastics

- [Dream Reaction project](#) – Can plastics be made from carbon dioxide? Bayer MaterialScience's "Dream Reaction" project hopes to make it a reality.
- [Plastics from algae](#) – Can algae + sunlight = plastics? Researchers have engineered blue-green algae that use photosynthesis to convert carbon dioxide into a chemical used to make plastics, paints and fuels.

Plastics That Touch Our Lives

- [Cell phone repels water](#) – OMG I dropped my cell phone in the sink!!! No worries, according to the maker of a "hydrophobic polymer layer" (OK, plastic) that coats the outside and the inside of some current cell phones.
- [High-five!](#) – Ever wish you could give a friend a high-five through your computer screen? It may be possible in the future with a sheet of plastic bubbles that pop up to replicate the pressure of touch.
- [Plastic protectant](#) – Tired of doing laundry? A new coating made with plastics is virtually impervious to most liquids. It could protect against stains and bacteria – maybe even biological and chemical threats on the battlefield.

Could some of these innovations be created with other materials? Possibly some. But it's the very nature of plastics – and our ability to manipulate, mold, shape and engineer them into countless permutations and myriad applications – that makes them so versatile and valuable. And vital to our need to innovate.

Improving our lives. Doing more with less. Living better while leaving a smaller environmental footprint. Saving money and resources... while caring for the future. That's pretty innovative.

- 30 -

Today's intelligent plastics are vital to the modern world. These materials enhance our lifestyles, our economy and the environment. For more information visit www.intelligentplastics.ca.

For More Information:

Darlene Gray, Canadian Plastics Industry Association
905.678.7748 ext. 239