

Innovation Brief December 2022

Tackling Plastic Pollution with a Net of Law and Chemical Coding

[Queensland University of Technology](#) has announced an innovative proposal to tackle the global plastic pollution crisis with a combination of DNA-like encoding of plastics. The QUT research team, from chemistry and law, have published their multi-pronged approach in *Polymer Chemistry*.

Researchers Produce First-ever 'Family Tree' for Aquarium-bred Corals

[Aquarium biologists and researchers from the California Academy of Science](#) have produced the first-ever pedigree, or 'family tree', for corals bred in an aquarium and provided a list of best practices to maintain genetic diversity in aquarium-bred corals.

New Discoveries Made About a Promising Solar Cell Material, Thanks to New Microscope

[Scientists from the Department of Energy's Ames National Laboratory](#) developed a new characterization tool that can be a possible alternative material for solar cells. A microscope uses terahertz waves to collect data on material samples. The team then use their microscope to explore Methylammonium Lead Iodide (MAPbI₃) perovskite, a material that could potentially replace silicon in solar cells.

Researchers Shed (Laser) Light On Emerging Water Treatment Technique

[Using a technique involving ultra-fast laser and X-ray pulses](#), researchers in University of Rhode Island has revealed new details about the chemical reaction that occurs when ferrate is exposed to visible and ultraviolet light. The findings, published in the Journal of the American Chemical Society, could help researchers to optimize its use in water treatment applications.

New Technology to Reduce Potholes

[Researchers from the University of Technology Sydney](#) have developed new “intelligent compaction” technology, which integrates into a road roller and can assess in the quality of road base compaction. Improved road construction can reduce potholes, maintenance costs, and lead to safer, more resilient roads.

An Important Step Toward Strong and Durable Biobased Plastics

[In Nature Communications, researchers](#) at the Industrial Sustainable Chemistry group take an important step towards the production of fully biobased, rigid polyesters. They present a simple, yet innovative, synthesis strategy to overcome the inherently low reactivity of biobased secondary diols and arrive at polyesters that have very good mechanical- and thermal properties.

On-Site Reactors Could Affordably Turn CO₂ Into Valuable Chemicals

[University of Waterloo introduced a new technology](#) that could make a significant difference in the fight against climate change by affordably converting harmful carbon dioxide (CO₂) into fuels and other valuable chemicals on an industrial scale.