What Are Biopolymers?

Biopolymers are polymers that are derived from natural sources, such as plants, animals, microorganisms or agricultural wastes. Comprised of monomeric units that are held together by covalent bonds, biopolymers can be synthesised artificially through chemical processes or biosynthesised by living organisms. They have a range of applications and benefits in an environmental sense.

With that in mind, an Emirati investment company has joined forces with a Hong Kong-based heavyweight of the biopolymers industry in order to launch a new joint venture in the UAE. The project, named Emirates Biotech, will undertake the production, marketing and sale of PLA biopolymers nationally and internationally, offering a more sustainable alternative to traditional plastics derived from fossil fuels.

Au naturale

Biopolymers can be found in a wide range of natural sources. In terms of plants, the most common sources include crops such as barley, corn, rice and wheat, while cattle are a leading animal source and fish, shellfish and coral reefs are chief marine sources. Elsewhere, biopolymers can also be derived from microbiological sources such as algae, fungi and yeasts, while the waste produce from the paper, wood and agricultural industries are other possible sources.

These substances can provide excellent functionality across a diverse range of applications. For example, biopolymers have long been widely used in the food and pharmaceutical industries. What's more, they make for a fantastic packaging option in their own right, meaning they can serve a huge number of different industries and purposes.

An abundance of eco-advantages

The main reason why interest in biopolymers has grown rapidly in recent years is the sustainability of their production and disposal. Unlike fossil-fuel based microplastics, they are a renewable resource that is being continually replenished by mother nature all the time. They alleviate dependence on fossil fuels, which are of course a finite source themselves.

Moreover, fossil fuels have a well-documented negative impact on the environment. Not only does their extraction and processing entail significant generation of carbon emissions, but they produce a plethora of other pollutants and contribute excessive amounts of solid municipal waste. Biopolymers, on the other hand, dispense with the need for synthetic polymers and thus circumnavigate many of these issues.

Joint venture spearheads regional charge

The UAE government has prided itself on placing great emphasis on encouraging sustainability across all facets of industry and the recently announced joint venture continues their efforts in that vein. The collaboration between SS Royal Kit Emirates Investment and Global Biopolymers Industries is intended to provide a springboard for the biopolymer sector to thrive in the Middle East, Africa and India, all of which represent strong emerging markets in the coming years.

Emirates Biotech expects to begin commercial operations next year, with construction of its first biopolymer-based PLA plastics production facility earmarked for the same year. “By investing in PLA bioplastics, we are taking a proactive step towards building a more eco-conscious society for generations to come, aligning with the UAE’s vision outlined in the Green Agenda 2030,” explained Shaikh Suhail Ali Saeed Rashed Al Maktoum on behalf of the Emirati company.