Global bioplastics production will more than triple within the next five years

At the 16th EUBP Conference 2021, European Bioplastics presented a very positive outlook for the global bioplastics industry. Production is set to be 7.5 million tonns over the next five years from 2.4 million tonnes according to market data which was compiled in cooperation with the nova-Institute, Germany.
PBS (polybutylene succinate) and bio-based PAs (polyamides) are the main drivers of this impressive growth. The production of polylactic acid (PLA) will also continue to grow due to further investments in PLA production sites in Asia, the US, and in Europe. Production capacities of bio-based polyolefins, such as PE (polyethylene) and PP (polypropylene), increased as well. Bio-based, non-biodegradable plastics, including the drop-in solutions bio-based PE and bio-based PET (polyethylene terephthalate), as well as bio-based PA (polyamides), make up for almost 36 percent (0.8 million tonnes). Packaging remain the largest application (48%) of Bio-based plastics.

(Bioplastic Magazine, Dec'21)

World's First 100% Enzyme-Recycled PET Plastic Bottles

The promise of endlessly recycled PET plastic is one step closer as the Consortium of Carbios, L'Oréal, Nestlé Waters, Pepsi Co and Suntory Beverage and Food Europe announced the successful production of the world's first food-grade PET plastic bottles produced entirely from enzymatically recycled plastic. Each Consortium company has successfully manufactured sample bottles based on Carbios' enzymatic PET recycling technology for some of their leading products including: Biotherm, Perrier, Pepsi Max and Orangina.
Carbios' patented enzymatic PET recycling process enables a wide variety of PET plastics to be recycled into virgin quality, food grade rPET. PET plastics can now be brought back into a continuous circular system of recycling.

Courtesy: Plastics Today, June 24, 2021

Technique to De Polymerise of PET

This versatile thermoplastic polymer is manufactured from petroleum derivative terephthalic acid (TPA) and Ethylene glycol (EG).
I.Sakaiensis employs a two-enzyme system to depolymerize PET to its building blocks TPA and EG which are further catabolized to a carbon and energy source.
ISF6_4831, a protein base enzyme hydrolyzes and breaks ester linkages to form aliphatic ester and degenerated as PET hydrolysis and called as "PETase".
"PETase" farther depolymerize to produce TPA and EG monomer.