



Name: Achmad Solikhin

Age: 25

Category: Plastic Waste

Project: Making biodegradable plastic from waste material

What is the problem you are trying to solve?

Up to 12.7 million metric tons of plastic waste ends up in the oceans every year from land-based sources. If no action is taken, this waste could increase by ten times over the next decade. After China, Indonesia is the second worst plastic polluter. Up to 1 kg of plastic waste is produced by each of Indonesia's 250 million inhabitants every year on

average. At the same time, we generate some 200 billion tons/year of plant biomass, of which over 90% is a source of lignocellulose. Lignocellulose is a potentially useful biopolymer that can be extracted from sawdust, palm, rice straw, kenaf, and bagasse fibers. At the moment, unmanaged plastic and biomass waste is simply pollutive.

How does your idea help solve the problem?

Bionanocomposite Plastic, or BIOTIC, is our plastic product based on recycled synthetic polymers and then reinforced with bionanofillers such as lignocellulose. In other words, we make new plastic out of recycled plastic, agricultural waste and nanofillers. The plastic biodegrades within three months. The final product can be used for packaging, and in the pharmaceutical, electronics, automotive and furniture industries.

What inspired you to do this?

Being a researcher would be pointless if my research results were not used in real life to improve the environment and society! Conducting intensive research on bio-composite for 8 years has subtly encouraged us to be a driving man for altruistic and sustainable environment. Through the knowledge gained over 8 years of studying biocomposites, we are able to deliver a product that tackles the abundance of plastic and lignocellulose waste.

Bio

As one of the founders of the Indonesian Green Action Forum (IGAF) and Jepara's Biocomposite, Achmad Solikhin is actively involved in several youth-led organizations through UN agencies. He conducted a student internship program at CIFOR, ICRAF, UNCDD, and the UNESCO World Heritage Center. Achmad is interested in deepening his understanding of nanotechnology-based biomaterials, and has published in scientific journals about his studies. BIOTIC products have been named by the Indonesian government as a top innovative product.

Links

https://www.youtube.com/watch?v=dJEa_Gbub2I&t=44s

https://www.youtube.com/watch?v=WjE__aQ6JHI