

For a sustainable and European value chain of PHA-based materials for high-volume consumer products (NENU2PHAR project: <https://nenu2phar.eu/>)

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Bio-based and biodegradable plastics clearly offer a valuable alternative to non-biodegradable, petroleum-based plastics for selected applications. Nevertheless, high costs and low yields associated with their production, together with their dependence on sugar or oilseed feedstock, are significant obstacles which still remain to be tackled. The NENU2PHAR project will develop an original route of production polyhydroxyalkanoates (PHA) from sustainable and renewable resources using eco-friendly and ethical processes: micro-algae biomass using CO₂ as carbon source and selection of specific bacteria strains able to produce PHA. In this context, 8 PHA-based products with their respective end-of-life scenarios will be developed and benchmarked to their fossil-based counterparts.

The goal of NENU2PHAR is to set up a new European value chain of PHA-based bio-plastic products from a sustainable non-food bio-source with an adapted end of life regarding to the use. To reach such ambitious target the NENU2PHAR project will have 6 main objectives (Figure 1).

The presentation will summarize how NENU2PHAR consortium develop a PHA stream integrated in a circular economy concept, from the production to the biodegradability or recyclability of plastic products to new compounds. Special focus on pilot production of micro-algae used as substrate for PHA fermentation, eco-friendly PHA extraction routes and innovative PHA-based formulations will be given.



Figure 1. NENU2PHAR concept aiming to create a new PHA value chain based on the circular economy

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Thème :

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