

## **Proposed Abstract for the Nova Institute Advanced Recycling Conference 2025**

Entzimatiko is a clean-tech company that uses a proprietary “enzymatic mix” or enzymatic “complex”, fully developed and grown in-house, that has a depolymerization effect on multiple types of plastics.

Based in the heart of the Basque Country, Entzimatiko is pioneering a unique enzymatic hydrolysis approach to plastic waste recycling, setting it apart from others in this emerging sector: A Nano-Encapsulated Enzymatic Machinery that can be produced at industrial scale, and operates in a tandem reaction by effect.

This enzymatic “machinery” enables the efficient breakdown of various plastic types through a continuous, single-stage process that operates without the need of a solvent-based pretreatment, at room-temperature, and with no pressure. The enzymes may be reused, further enhancing process sustainability and operating costs.

Due to a scalable enzyme production technology already implemented, mild hydrolysis operating conditions, rapid reaction kinetics, and broader plastics applicability, this technology holds strong potential to become one of the most effective advanced recycling solutions available—particularly for plastics that are challenging to process using traditional thermal liquefaction methods or for which no viable recycling options currently exist.

Entzimatiko targets scalable plant capacity with applications across industries and strong alignment with global sustainability targets.