



## **Bacteria to convert biodiesel waste into a cosmetic ingredient**

**LOCATION:** Seville

**DURATION:** 1'44"

**SUMMARY:** BiofilmTransformers is a project developed by students from the Pablo de Olavide University, in Seville. They have proved the efficiency of a bacterium, which they have modified genetically, in turning the contaminant glycerol generated in the production of biodiesel into propionate, used in the pharmaceutical and the cosmetics industries. Thanks to this idea they won the gold medal in IGEN 2016, the most prestigious international contest in the world of Synthetic Biology, which every year gathers students from all over the world in Boston.

### **VTR:**

These young scientists at the University of Pablo de Olavide have provided a solution to an important environmental problem from the biodiesel industry; it is a use for the contaminant, glycerol.

**LAURA CLARET**  
**Student Univ. of Pablo de Olavide**

*"Every day, on average, a biodiesel industry can produce about 20 tons of Glycerol water. Every day..."*

And their answer has been announced in Boston, in the framework of the IGEN 2016, an annual competition for Synthetic Biology projects created by the most promising young scientists around the world. But first, what is Synthetic Biology?

**LAURA CLARET**  
**Student Univ. of Pablo de Olavide**

*"I have a problem and I want to find a solution, so what I do is find an organism and work to give it the necessary functions to solve this problem and encounter this solution."*

They have worked with this bacterium, *Pseudomonas Putida*. They have been able to genetically modify it to efficiently consume the excess glycerol, useless contamination from the production of biodiesel, and turn it into a reusable substance of interest to the industry: the propionate.

**LAURA CLARET**  
**Student Univ. of Pablo de Olavide**

*"It is used a lot in the pharmaceutical industry as a component in certain types of pharmaceuticals. But it also has other uses, like in cosmetics, even in food preservation."*

**RAFAEL RODRÍGUEZ DAZA**  
**Professor UPO**

*"Our project has awakened current interest of several companies dedicated to biodiesel production. And now we are finding a formula to be able to bring the project to the industry."*

This is what they are working on now. By the way, do you want to know their result in the most prestigious international contest in the world of Synthetic Biology?

**LAURA CLARET**  
**Student Univ. of Pablo de Olavide**

*"We have won this gold medal, but not without effort."*

Gold medal in the non-competitive section of the competition that gives them strength to continue working in the laboratory of the Andalusian Center of Biology for Development.

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