

How can you treat wounds with agave? Mexicans exhibit project in NY



Students from the Tec's State of Mexico campus have exhibited a device for treating burns with agave bagasse at Biodesign Challenge in New York.

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Alejandro López

Exhibiting **SANAVE**, design students with a specialization in technology from the [Tec's State of Mexico campus](#) participated in the international competition **Biodesign Challenge** organized by the [Parsons School of Design](#) and the [Museum of Modern Art](#) (MoMA) in New York.

The project presented by **María Morales, Valentina Facio** , and **Alejandro Montero** is a device made to **cure first- and second-degree burns and wounds** using bagasse, **agave waste** generated from the production of tequila and mezcal.

Biodesign Challenge brings together students from around the world to explore the **relationship between design and biotechnology**, exhibiting initiatives with the potential to generate **social and environmental impact**.

From left to right: Yuliana Tónix, Division Director of the School of Architecture, Art, and Design; Alejandro Montero, Valentina Facio, and María Morales exhibiting SANAVE at Biodesign Challenge. Photo: Alejandro López



“SANAVE is my first true approach to design. It’s a project that my team and I were passionate about, to which we always gave more than we were asked,” said Valentina.

Developing the project involved **integrating different disciplines** into a single proposal, basing it on **scientific research** and complementing it with design tools, **biotechnology**, engineering, and electronics to build a **functional solution**.

Agave vs. burns

SANAVE consists of **three pieces**: a cartridge to store the **liquid solutions**, a body to house the **electronic components**, which transform the liquid into a fine mist for controlling direct contact with the skin, and a **nozzle to aim where it is applied**.

Over the course of about a year, the design went through **multiple iterations** on the shape and was then 3D-printed in a **straw-fiber bioplastic**, which stood out for being **sustainable and biodegradable**.

SANAVE, a project by students from the Tec's State of Mexico campus, was exhibited at Biodesign Challenge in New York. Photo: Alejandro López



What's more, the device is based on **three chemical solutions**: one for **disinfecting**, another for preparing the **skin surface**, and finally, an **agave-based** solution.

When the third solution comes into contact with the second, **it generates a hydrogel** that acts as a **protective layer** over the affected area, with the aim of helping the **recovery process**.

SANAVE cartridges and nozzles are fabricated from the same **straw-fiber** biopolymer, enabling them to be **replaced after each application** or treatment. The use of this material aims to **reduce the environmental impact** generated by

throwing them away.

Designed for a future in which medical attention is **accessible and immediate**, **SANAVE** is designed to be located in specific places, such as next to fire extinguishers or **first-aid kits**, for quick access in **emergency situations**.

Their journey to New York

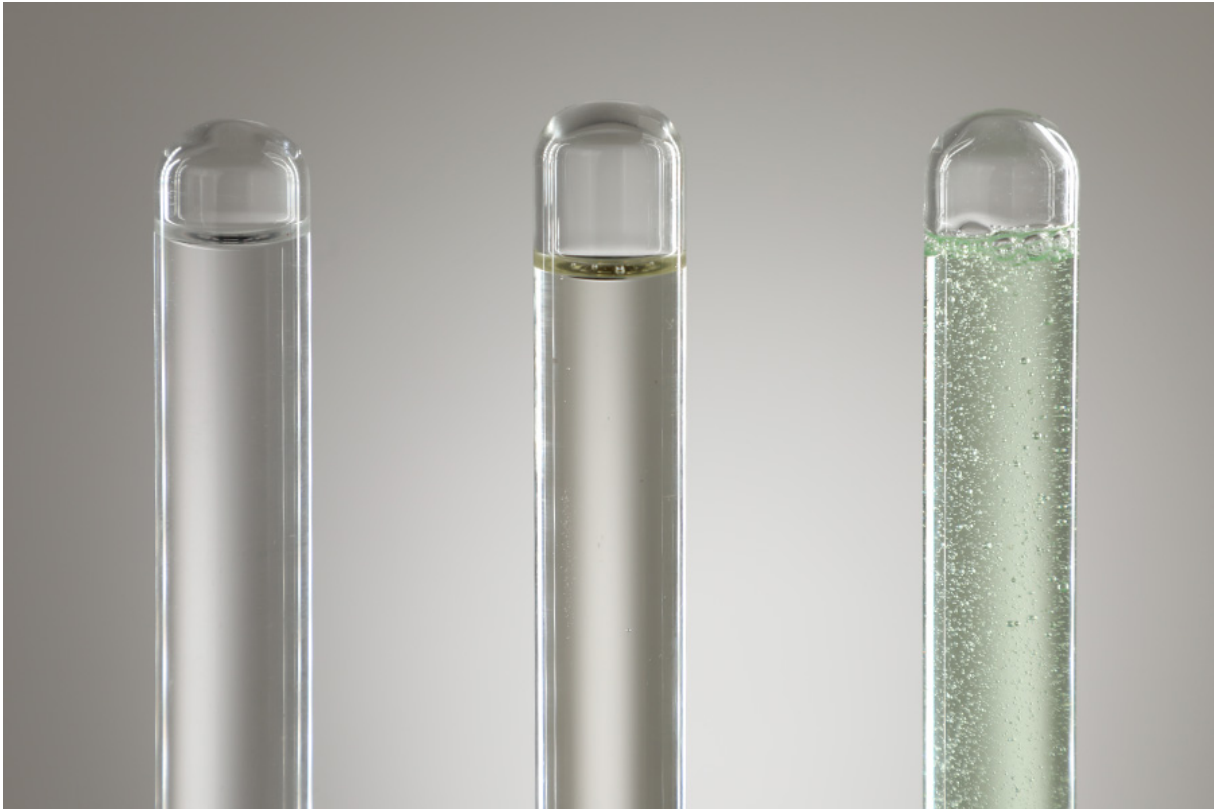
Before presenting at **Biodesign Challenge**, the students took part in **internal qualifying stages** with other projects from the **Tec's State of Mexico** and [Puebla](#) campuses.

Under the guidance of design researcher and biologist **Delfina Fantini**, a total of eight projects were presented, with **SANAVE** being chosen to represent the [Tec's School of Architecture, Art, and Design](#) at this international competition.

This project was the students' **first approach** to **biotechnology**, exploring other methodologies and concepts than those from their **usual training**.

*"During the process, we learned that the best project **doesn't come from the best idea** but the best process and the **best mistakes**,"* shared **María**.

The three chemical solutions on which SANAVE is based for disinfecting, preparing the skin surface, and creating the hydrogel. Photo: Alejandro López



40 international projects took part in **Biodesign Challenge**, during which **SANAVE** was pitched to a jury at **The New School**, an interdisciplinary university in **New York**.

Afterwards, it held *Convergent Life*, an **exhibition open to the public** at the **Parsons School of Design**, where each team had an assigned space to show their prototype and **interact with attendees**, students, and faculty.

During the exhibition, the team from the **Tec's State of Mexico campus** shared space with projects from institutions like [Stanford](#), [Cornell](#), [NYU](#), and the **Parsons School of Design**, along with participants from countries such as Canada, Colombia, Spain, Japan, Türkiye, and China.

“The best project doesn’t come from the best idea but the best process and the best mistakes.” - María Morales

The final results were announced at the **Museum of Modern Art** (MoMA), where **eight finalist projects** were selected from among 40 participating proposals.

Besides **SANAVE**, another two teams from the **Tec’s Querétaro, Guadalajara, and Puebla campuses** took part to represent the institution at exhibitions related to **biotechnology projects** and research.

*“We thank the **extensive support network** we had throughout the process. Our classmates were always there for us, as well as the professors and everyone **we met along the way**,”* concluded **Valentina**.

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