

Clean air: Tec professor wins award for international research



Venkata Karthik, a professor at the Tec's State of Mexico campus, has been internationally recognized for his research in sensor development and optimization.

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COURTESY OF VENKATA KARTHIK

Venkata Karthik, a research professor at the [Tec's State of Mexico campus](#), has been recognized by the **Seed Grant Program** for his research in gas sensor development and optimization using artificial intelligence (AI) to **detect air pollutants**.

Karthik worked in collaboration with **Arturo Ponce**, a researcher from the [University of Texas](#), with the goal of applying **machine learning algorithms** to sensors to reliably detect benzene, a highly toxic compound pertaining to the **petrochemical industry**.

The **Seed Grant Program** is an initiative created by the **University of Texas at San Antonio**, in collaboration with [Tec de Monterrey](#), which aims to support early-

stage, **collaborative projects** that further their mutual **research** interests.

*“It was very surprising because it was the **first time** we’d participated in this call and we didn’t expect to win”, **Karthik** said.*

Venkata Karthik (blue jacket) with co-organizers of the symposium at the International Materials Research Congress. Photo: Courtesy of Venkata Karthik



International scientific collaboration

Karthik and **Ponce** had previously collaborated. In 2025, the professor from the **Tec’s State of Mexico campus** organized a symposium as part of the **International Materials Research Congress**, to which he invited Arturo Ponce as co-organizer.

*“It’s where almost all the **researchers** working with **nanomaterials** meet. They come from the United States, Europe, and all over Latin America.*

*“I went as a student in 2012. In 2025, I was organizing a **new symposium** and was looking for some co-organizers,” **Karthik** recalled.*

So, along with **Ponce** and two other doctors, **Karthik** managed to organize one of the **40 symposia** held during the congress’s 33rd edition.

“Participating in and winning this call was amazing”.

What’s more, **Karthik** is working on two lines of research at the **Tec’s State of Mexico campus**. The first one is dedicated to **wastewater treatment** and the other to the manufacture of **nanosensors**.

*“These sensors have generated **significant interest** due to their diverse applications; so far, we’ve contacted **three types of industries**”, he explained.*

Hailing from India, **Venkata Karthik** holds a degree in Electronics and Communications Engineering from [Jawaharlal Nehru University](#).

He began his career at the **Tec** in 2023. Since then, he has published over **twenty national and international articles**.

He’s currently a **Level 1 member of the National System of Researchers (SNII)**, a distinction that seeks to foster and strengthen the quality of **scientific and technological research**, as well as the **innovation** produced in Mexico.

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