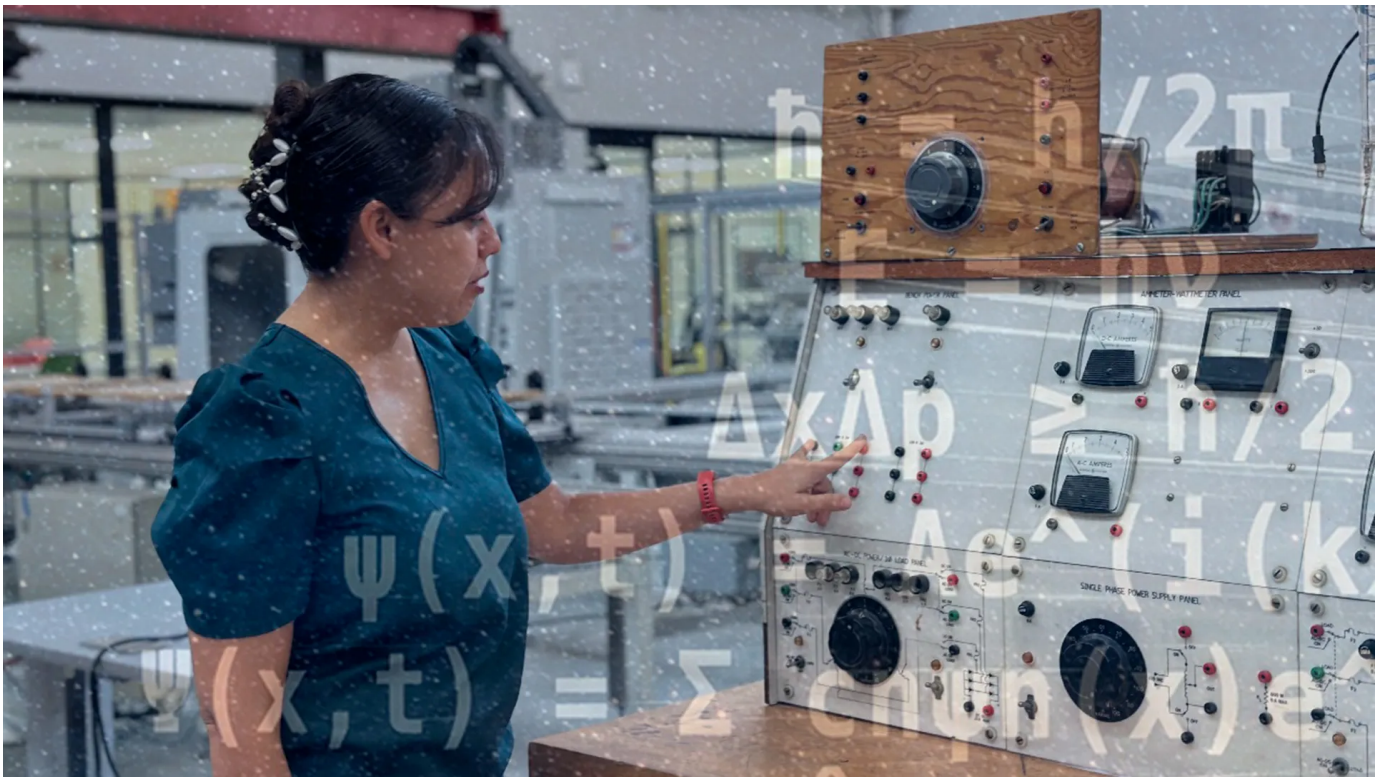
Tec + ASU: Professors promote innovation in data processing



The Tec and Arizona State University are working on joint research into telecommunications using quantum mechanics.
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Johanna Karrum y Pixabay

Three professors from Tec de Monterrey are working on a **research project with Arizona State University** (ASU) that aims to **improve data processing using quantum mechanics.**

They are **School of Engineering and Sciences (EIC)** professors Rafaela Villalpando, from **Laguna campus**; César Vargas Rosales, from Monterrey campus; and Francisco Javier Delgado Cepeda, from State of Mexico campus.

These School of Engineering and Sciences research professors are working in collaboration with academics at ASU's **Sensor, Signal & Information Processing Center (SenSIP)** to **innovate on information processing**.

Rafaela Villalpando from Laguna campus explained that this research could lead to **a quantum computer doing something in a minute that a supercomputer currently takes a month or a year to do.**

“It would totally shift ***the computing and telecommunications paradigm*** *as we know it*,” she said.

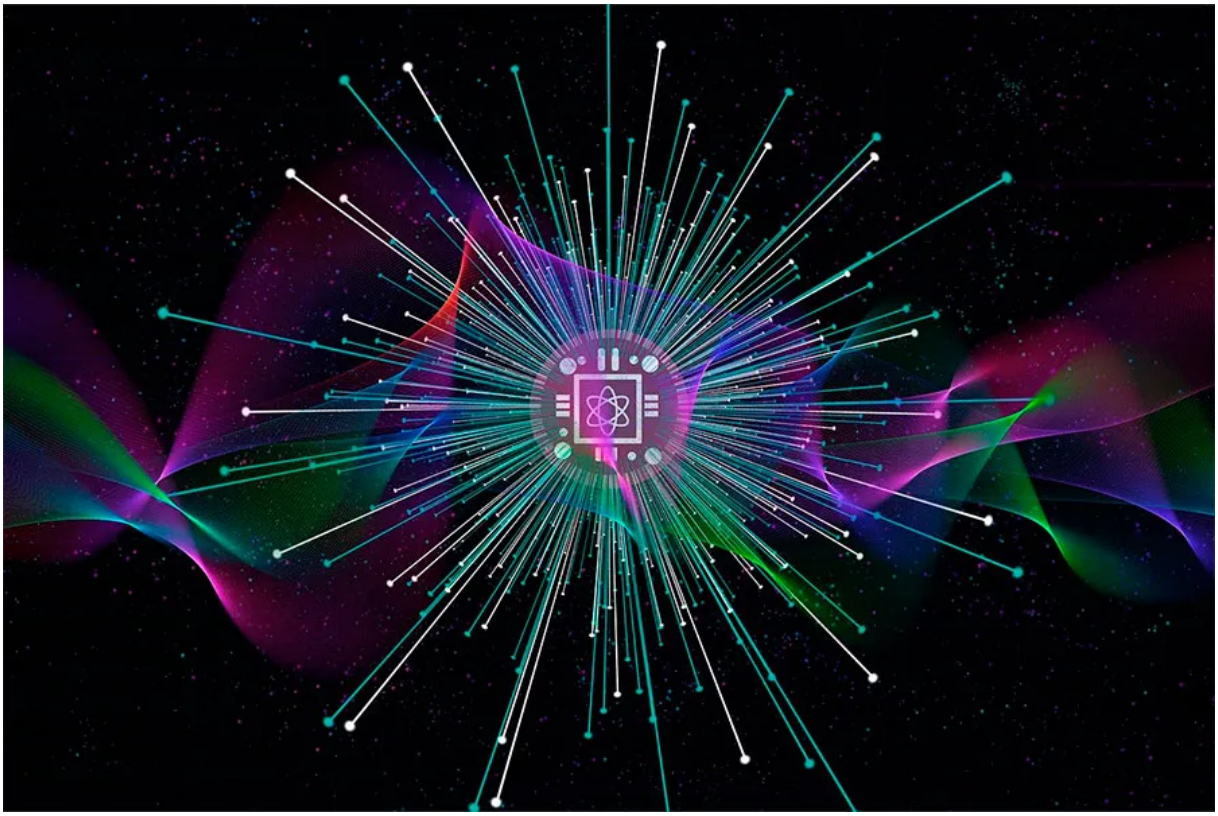
> ***“This research could revolutionize the way we process, transmit, and secure information”.***

Developing research using quantum mechanics

The engineering professor at Tec de Monterrey in Torreón said that this research addresses **quantum mechanicsapplications for telecommunications**.

She explained that they are analyzing topics such as interference, security, encryption, and wireless networks “*which could* ***revolutionize*** *the way we* ***process, transmit, and secure information*****.”**

“The concept of quantum entanglement allows us to develop ***a new way of processing information using machine learning methods and*** **quantum security systems,”** she explained.



Their research focuses on quantum mechanics in information processing. Photo: Pixabay

She said that although the research is in its early stages, they have already identified **areas for collaboration between the Tec, ASU, industry, and graduate students**. Some of these include:

- *Attracting funding for joint research*
- *Promoting academic collaborations between campuses, and*
- *Fostering talent for graduate studies in engineering sciences*

She also mentioned that the next effort will be “at least **one joint article** as evidence of the *collaboration and to continue to attract funding*.”

> ***“There is a lot of willingness to cooperate. The Tec and ASU have been working together for more than 10 years.”***

Collaboration between the Tec and Arizona State University

Finally, Rafaela Villalpando mentioned that **the relationship between the Tec and Arizona State University has existed for more than 10 years**.

*“There is a **lot of willingness to cooperate.** We’ve been working together for more than 10 years,”* she said.

She explained that, during this time, they have participated in **conventions, publications at conferences, and even in scientific journals.**

There have also been **discoveries** about the similarities and differences in the relationships between academia, industry, and government in Mexico and the United States.

*“Collaborating with other universities opens up new perspectives on how to **obtain resources, connect with industry, and expand research,**”* she concluded.

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