

Raul Montes

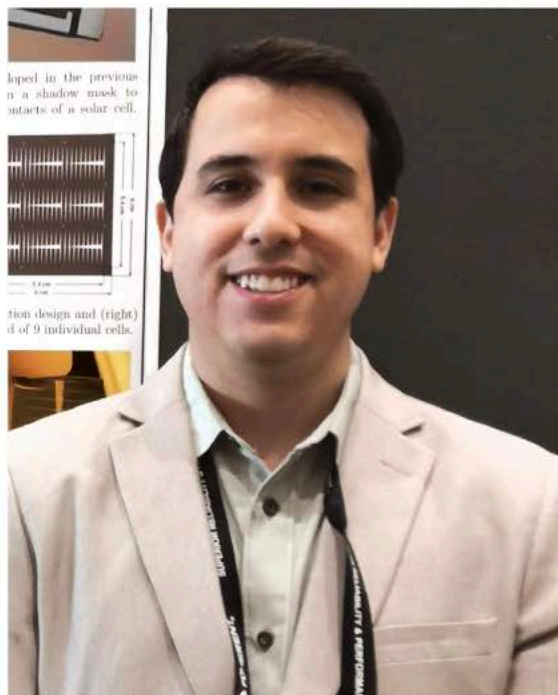
by Md Mohsin

Raul Montes works in the MEMS research lab at UTSA, under the guidance of Arturo Ayón, a professor in the Department of Physics and Astronomy. Montes is helping Ayón investigate an innovative photovoltaic technology, the conversion of light into electricity, to increase the theoretical energy conversion efficiency of solar cells using quantum dots, which are light-emitting semiconductor nanoparticles. Montes presented his initial findings at the 49th Institute of Electrical and Electronics Engineers (IEEE) Photovoltaic Specialists Conference in Philadelphia, where he won the best poster award.

Montes is from Hermosillo, a city in the northwestern Mexican state of Sonora. Initially, he chose to pursue an engineering technology degree in mechatronics, as he always liked photovoltaics. "In my head, I needed to be an engineer to work in the field of solar energy," recalled Montes. But Montes was fascinated by a presentation from a physics professor at his technology-focused high school about a sun-tracking technique for high-efficiency solar panels. "His approach was totally different from what I was aware of," said Montes. "I learned I could work on applied science and technology by studying physics." He studied physics for his undergraduate degree at the University of Sonora.

During the University of Sonora's Nanotechnology Week in 2015, Ayón presented research from UTSA's MEMS lab. "I really liked what he was doing," said Montes, a sophomore at the time. Montes talked to Ayón and stayed in touch with him over the next few years. Montes visited the MEMS lab in 2018, and the next year, he joined the physics Ph.D. program at UTSA, where he now works as a teaching assistant in addition to his research.

Montes says UTSA's main strength is its diversity, both cultural and in the variety of research being performed. "At the Department of Physics at UTSA, there is a lot of nanotechnology, astronomy and biophysics research," he said. "If you like any one of these, you are in the right place."



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One of the best pieces of advice Raul Montes received from UTSA professor Arturo Ayón is to not try to solve problems that don't exist yet. "Don't get discouraged from trying something new at the lab because you think it may not work," elaborated Montes. "Instead, go to the laboratory, do it, and see what happens. Sometimes it's better to be wrong."