Irma Yolanda SANCHEZ CHAVEZ

Home Country
Mexico

Degree
PhD in Engineering Sciences

Expertise
Chemical Engineering

Research Focus
Systems to Deliver Insulin to Diabetic Patients

Host University
The University of Texas at Austin, United States

Fellowship Awarded
2006

Irma Yolanda Sanchez Chavez was born in Aguascalientes, a city in central Mexico, where she grew up with her parents, brother, sister and an extended family that included many cousins, uncles and aunts. She now lives in Monterrey with her husband.

After graduating from Monterrey Institute of Technology (Monterrey Tech) as a chemical engineer in 1993, Irma Yolanda went on to obtain her Master of Science degree in 1996 with a specialty in control engineering. She obtained her doctorate in engineering sciences in 2008. Since 2002 she has been a full-time professor in the Monterrey Institute of Technology (Monterrey Tech).

Irma Yolanda's research goal is to combine biomaterials, modeling and control engineering to propose closed-loop systems for the restitution of diminished or lost physiological functions. For her doctoral thesis she worked on systems to deliver insulin to diabetic patients based on two approaches.

In the first approach she used separate controller, actuator and sensor units, and in the second approach she used glucose-sensitive hydrogels as smart materials that integrate the controller, actuator and sensor-unit functions within a single device.

Engineering science has contributed to modern medicine through the development of better equipment for monitoring health conditions and for low-invasive surgical procedures. Automation engineering can enhance medical treatment through continuous administration of drugs in precise doses in response to patient requirements. Irma Yolanda's research efforts in this area are intended to improve quality of life and comfort for patients.

After completing her doctorate in January 2008, Irma Yolanda returned to Monterrey to continue teaching at Monterrey Institute of Technology (Monterrey Tech).