



Anurekha SHARMA

Home Country: India

Degree: Postdoctoral in Electronics

Expertise: Microelectromechanical Systems (MEMS)

Research Focus: MEMS Energy Harvesters for Biomedical Implants

Host University: Tyndall National Institute, Cork, Ireland

Fellowship Awarded: 2014

Anurekha Sharma was born in Ludhiana, Punjab, India. Her father was in the military and travelled widely, taking his family with him, which exposed Anurekha to a diverse range of cultural values. She was part of a progressive family, where the education of girls was considered to be of equal importance as that of boys. She excelled at school and won prizes in athletics, drama and other areas. She has been inspired since childhood by the lives of scientists, in particular women such as Marie Curie. Her parents noted her effective approach to solving problems, and encouraged her to pursue a career in science.

Anurekha graduated from Kurukshetra University with a BSc in 1986, coming sixth out of around 1,000 students in her year. She then gained an MSc in Physics, specializing in Electronics, for which she was awarded a gold medal for achieving first place. She then studied towards an MTech in Electronics, Communication and Computer Engineering at the National Institute of Technology, Kurukshetra, which she completed in 1990 with distinction. Since then she has been a Lecturer, and subsequently a Professor in the Department of Electronic Science at Kurukshetra University. In 2008 she completed a PhD in Electronic Science with a thesis focused on microelectromechanical systems (MEMS).

The objective of Anurekha's postdoctoral studies is to design and develop an energy harvester powered by the human body for pacemakers and cochlear implants. The advent of MEMS means that these devices are becoming implantable, but rechargeable batteries present challenges and the cost of repeat surgery for their replacement can be prohibitive. Energy from human sources such as the heartbeat, muscles or head motion have the potential to provide better alternatives.

Tyndall National Institute is a leading center for research into human-powered energy harvesting. Anurekha plans to share the knowledge gained through her postdoctoral studies with her fellow colleagues and students at Kurukshetra University. She also hopes to develop international collaborations to further the research interests of the University and ultimately improve implant treatments in India.