



Deepti GOPALAKRISHNAN

Home Country
India

Degree
PhD in Organic Chemistry

Expertise
Nanostructured Organic Materials

Research Focus
Organic Chemistry

Host University
Cornell University, United States

Fellowship Awarded
2012

Deepti Gopalakrishnan was born in Secunderabad and brought up in Hyderabad and Madras. Her 10th grade chemistry teacher made organic chemistry interesting and enjoyable, stimulating an interest that has continued to develop ever since.

Deepti studied Chemistry in a five-year program at the Indian Institute of Technology Bombay (IIT Bombay), Mumbai, India, where she obtained her first research experience in an organic methodology laboratory. She was awarded a summer research fellowship by the Indian Academy of Sciences, which supported research at the Institute of Life Sciences. Deepti had an opportunity to work in the laboratory that synthesized compounds with the potential to treat diabetes, and as part of her thesis she contributed to a methodology to prepare fused organic compounds. These experiences led her to pursue a doctorate in organic chemistry, and in 2010 she enrolled in the Department of Chemistry and Chemical Biology at Cornell University.

The PhD research focuses on synthesizing covalent organic frameworks: an emerging class of ordered, high surface-area materials that can sense trace quantities of low-volatility explosives. These polymers are highly sensitive to RDX, detecting as low as attograms of RDX. These explosives pose a safety threat throughout the world, and sensitive, inexpensive, and operationally simple compounds are needed to identify improvised explosive devices, abandoned landmines, and individuals intending to cause harm.

After completing her PhD, Deepti plans to continue her training in organic materials chemistry with post-doctoral studies. She then intends to apply for a faculty position at IIT Bombay and set-up a research laboratory there. Deepti also hopes to conduct outreach programs around Mumbai to promote science among children ranging from elementary to high school age.