

Balu Ranganathan PhD



Technology – Director
Palms Connect LLC, Sandy, Utah, USA
Email: ranga@palmsconnect.com

I am a recognized expert in the development of multifunctional nanomedicine system for drug delivery. My work provides a method for formulating anticancer drugs that exhibit minimum side effects while achieving maximum targeted delivery for breast cancer therapy. My published work includes six peer reviewed papers and multiple conference presentations focused heavily on the development of a Nano Drug Delivery Platform (NDDP) for breast cancer research. These papers have so far received 200+ citations.

I earned my PhD degree from the Department of Chemical Engineering from Anna University, India, where the focus of my research was bilirubin oxidase production optimization from *Myrothecium verrucaria* IFO 6133. Bilirubin oxidase is used for the detection of bilirubin in blood for hepatic disorders.

Upon successful completion of my doctoral program, I worked as a Scientist-Trainee in a R&D center of Malladi Drugs and Pharmaceuticals Limited, India, a pharmaceutical manufacturer. My work there focused on the development of Thrombinase, a therapeutic enzyme that dissolves arterial blood clots (US patent 7776574). Next, I worked as a Post-Doctoral Fellow in Universite de Technologie de Compiègne, France. My work there was funded by the Centre Français pour l'accueil et les échanges internationaux (EGIDE), Government of France. Here, I pioneered the use of immobilized-metal affinity chromatography (IMAC), a state of the art technology used for the separation and purification of metal affinity monoclonal antibodies to be used for the early detection of cancer cells.

I served as a Research Fellow at the National University of Singapore, in the Department of Chemical and Biomolecular Engineering, where my research activity was focused on organic polymer nanoparticles for breast cancer therapy and culture and growth of mammalian breast cancer cells (MCF7 and SKBR3). Next, I worked with the National University of Singapore—Nanoscience & Nanotechnology Initiative, where I used FDA-approved organic polymers for the manufacture of nanofibers, which served as the nanoformulation system for controlled drug delivery.

I next secured an appointment as a Senior Lecturer on the Faculty of Chemical and Natural Resources Engineering at University Malaysia Pahang, Malaysia. Here, I worked on the development of natural-resource-based feminine hygiene products for developing countries. My development of novel absorbent materials was appreciated at the global level, resulting in a conference paper that I presented at the 2013 World Biotechnology Congress in Boston. Then, I served as a Senior Lecturer on the Faculty of Engineering Technology at University Malaysia Pahang. In this position, I was involved in pedagogy and research of pharmaceutical engineering technology. In collaboration with Elmarco Limited, Japan, I developed needleless electrospinning technology. This is a state of the art technology of great interest to elite research groups around the world. Based on input from Massachusetts Institute of Technology, and in collaboration with Elmarco Limited, a research laboratory has been established in Center for Excellence for Advanced Research in Fluid Flow, Malaysia.

The work I conducted during these appointments led to my achieving a global reputation for expertise in the development of multifunctional nanomedicine systems for drug delivery. Because of my recognized expertise, I was invited to serve as an Associate Editor-in Chief for the international journal *Science Technology Progress*. I am also an editorial board member for two international journals, *Indian Journal of Science and Technology* and *Nanoscience and Technology*. In addition to these editorial board positions, I am a frequent

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reviewer for 20+ international journals and have reviewed nearly 50 manuscripts submitted for publication with maximum impact factor of 7.5.

As another sign of the value and originality of my work, it has led to the filing of two patents in the Malaysia intellectual patent office (MyIPO): one for a microfluidic biochip (PI 2015001424) and on for a system and device for providing real time agricultural data (PI 2015001588).

With these credentials I decided to become a successful self-made technopreneur by setting up start-up companies in Malaysia and United States. Currently I am the Technology – Director for Palms Connect Sdn Bhd, Malaysia and Palms Connect LLC, Utah, USA.

Company website : www.palmsconnect.com

Google scholar:

<https://scholar.google.com.my/citations?user=IfcnHnkAAAAJ&hl=en>