

A CONVERSATION WITH DR. SWAMINATHAN SIVARAM

There's no 'blue-sky' vision in R&D leader's greenfield work

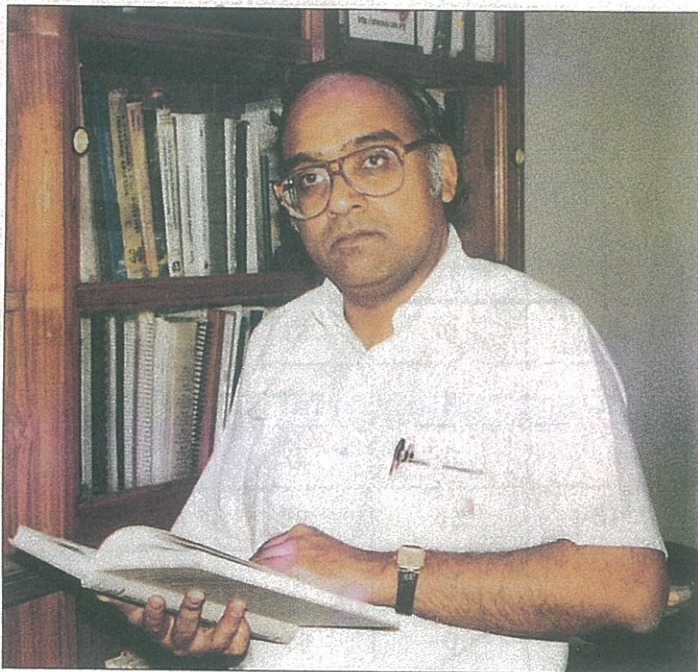
India's software development hub, in Bangalore, is a global center for product development. India's contract research in polymers, also groundbreaking, has a somewhat lower profile. Yet much is happening. Attracted by an R&D philosophy that stresses product marketability, firms have been knocking at the door of Dr. Swaminathan Sivaram, head of the Polymer Chemistry Div. at the National Chemical Laboratory (NCL) in Pune, since 1989 when he set up a contract research group.

Sivaram is driven by the problem-solving potential of research rather than the fascination of new discoveries. This approach, and his achievements, have drawn international attention. Global players use his NCL group as a technology resource, saving millions in their R&D budgets. Clients include majors like GE Plastics and DuPont.

Sivaram, in turn, is at home in the global plastics industry, and equally comfortable at coming up with new processes for polymer suppliers or interfacing with international institutes for R&D alliances.

Engineering polymers and polyolefins interest him, as he sees room for more innovation in them. But controlled polymer synthesis holds much of his attention. Developing methods for well-defined polymer structures, synthesizing catalysts for high-molecular-weight polyesters and polycarbonates, and searching for naturally occurring raw materials for conversion to specialty polymers are his priorities.

Sivaram's road to polymer research was as much a route to self-



It is not the joy of discovery as much as the thrill of commerce that shapes Swaminathan Sivaram's view of research and development.

discovery as a career path. He was not pushed to study science; the civil service was his family's choice for a good career. But he chose science to chart a course of his own and not be overshadowed by his father, a high-ranking civil servant.

Securing a master's degree in chemistry from the Indian Institute of Technology (IIT) in Kanpur, Sivaram studied organic chemistry for a doctorate under Nobel laureate Prof. Herbert C. Brown at Purdue Univ. in America in the late 1960s.

During post-doctoral studies at Akron Univ. in Ohio, Sivaram began delving into polymer science. He returned to India at an opportune time - the early 1970s - to utilize this expertise. India was setting up its first world-scale petrochemical complex, at Vadodara. Driving the venture was the late Lovraj Kumar, advisor to India's Planning Commission. Charmed by Kumar's "sheer

enthusiasm," Sivaram had a key role in setting up India's biggest industrial R&D center, at Indian Petrochemical Corp.

He stayed for 15 years, working on polyolefins, polybutadiene rubber, and acrylic monomers. He learned the polymer business, and developed his style of user-oriented research, which was to help him in creating the NCL contract group.

Sivaram's team at NCL includes 25 researchers and a dozen graduate students. Managing a team of specialists is not a problem. Sivaram says he is fortunate to get the best out of people. "The grounding I had in languages, logic, and the philosophy of science initially, and later, in corporate resource management and communication helps me in human-resource management."

He says that prospects for Indian resin suppliers depend on how fast they command local markets and set up reliable supply chains. "With drops in tariffs and the entry of competitive imports, local companies could end up vulnerable. But there is no real threat considering their well established marketing and distribution network." New entrants with smaller economies of scale will have to do some quick thinking to remain in business, he adds.

Often labeled as possessing "a single-track mind" by wife Rama and son Sushil, Sivaram admits that a punishing schedule of 12 to 14 hours of work daily leaves him with little time for other interests. But success in his work is music to his ears. "Seeing products of our research reach the market gives me a lot of satisfaction." -R. Rajagopal