

SPRIT OF ENTREPRENEURSHIP

# R&D Goes Desi

Sujit John | TNN

**H**e learnt from his father early on that many challenging intellectual tasks could be accomplished by people who do not have major academic degrees. So in 1990, after an MA in economics from JNU in New Delhi and an MBA from Wharton, when Aroon Raman wanted to start an R&D unit in Mysore, he turned to very ordinary people. Youngsters from the villages around Mysore who had only completed standard 10 or 12, or had a diploma.

Today, Raman runs a Rs 25-crore business that does materials and composites research, and manufactures materials for companies like ABB, Rane, Exide, Amco, and for institutions like the Defence Research & Development Organization (DRDO).

"They have become masters in the manipulation of materials," Raman says of the youngsters he hired. "They may not be masters in theoretical chemistry. But they do experiments that run into hundreds. A smart youngster doing experimental work for years and years picks up a fantastic feel of the interrelationships between compounds. So, he has an instinctive feel of what is required to solve a problem. People always think of an R&D unit as white-coated folks with PhDs, but that doesn't have to be."

Today, his head of R&D, G K Natesh, is someone from Udipi with a polytechnic diploma in plastics and rubber. Krishnachari, who joined Raman early, was a carpenter in Nanjangud near Mysore. His used to make crates. Raman saw that the way he sawed, he used the minimum amount of wood.

"That was application of thought. His ability to envisage how a crate would look was high." So Raman picked him and trained him. He started with drawings, later did tooling, and over the years Krishnachari has been key to the development of many value added products.

"Among my other top people are Girish and Krishna, both of who have passed no more than class 12. They are in their mid-30s now and they have filed four patents between them this year."

Raman looks for locals with a sense of curiosity, high IQ and native intelligence. Some youngsters grasp very quickly, others take time. Raman picks the exceptionally bright ones. And this strategy keeps costs and attrition low.

"If we hired PhDs, we wouldn't be able to retain them. A GE or Akzo Nobel or Dupont could come and take them. Or they would go for post-doctorals. Since my boys are from local villages, their parents are around, and they have no incentive to move. But I send them to events in places like Mumbai to open their eyes to bigger things."

Raman's firm Raman FibreScience has multiple capabilities in the area called wet-laid composites. Normal papers, tissue paper, cardboard are all made by a wet-laid process. In wet lay, you take a fibre, mix it with water and additives, and run it through a mesh-like conveyor belt. When the slurry moves along the mesh, the water runs off, and you are left with a wet mass on the belt, which is then dried, and made into the final product.

You can also wet-lay glass, carbon fibre and organic fibres. When you do that and combine them with performance additives, you can get very special products, such as high-end filtration solutions. These can give

you very pure air or be used for blood filtration, or in a nuclear power station that requires air filters that must trap very fine particles, including bacterial content.

Raman's firm grew out of his conviction that there is scope for a full-service independent R&D unit, a rarity in India. Most Indian companies do their R&D in-house, occasionally approaching universities for help. Indian research institutions like CSIR typically do not have the ability to commercialize their research. "I can make a material in a lab, but how do I start making it in tonnes, at a cost that the market will accept? For that, you need to build special purpose machines, you need a host of skills, engineering skills, plant development skills, process skills, costing ability."

Raman FibreScience combines these skills. The company has had particular success with a unique separator (filter) developed for backup power batteries. "We developed the separator in 2-3 years; a global company like Nippon Sheet Glass still does not have such a product. For us it is innovate or die. We don't have deep pockets, so we have to be on our toes. For Nippon, they are so big, even if they do not innovate, they think they will survive," Raman says.

## AROON RAMAN

FOUNDER, RAMAN FIBRESCIENCE

They (his employees) may not be masters in theoretical chemistry. But they do experiments that run into hundreds

AROON RAMAN, FOUNDER, RAMAN FIBRESCIENCE



Aroon Raman picks youngsters with a sense of curiosity, high IQ and native intelligence for his company