

DR. GORDHANBHAI PATEL

“Glimmers of Gujarati Culture in America”

Professor Chandrakant Patel

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In times of natural or man-made calamities like floods, earthquakes or wars, numberless sufferers struggle for life, their only hope and also obstacle and constraint for their doctors is availability of proper hygienic blood of the proper group at proper time in proper quantities. Social activists and doctors engaged in life saving campaigns feel helpless on account of the paucity of this essential life giving commodity blood for transfusion.

Dr. Gordhan Patel from Manund in North Gujarat, settled in America has pioneered a unique research project to create artificial blood appropriate for medical transfusion for life saving services. He is working on his project under the American Government's 'National Heart, Lungs and Blood Institute' grant for small scale researchers for humanitarian purposes.

The foundation applying for such a grant should not have a staff of more than 500. A high level scrutiny committee screens the proposals. On approving the proposal a grant of \$50,000 to \$100,000 is offered at the launching stage. If the research advances satisfactorily, a further grant of \$500,000 to \$750,000 is awarded. Gordhanbhai initiated his research at the modest \$50,000 budget. His processes met with approval and the Government granted \$500,000 and later \$100,000. The research project is well on its way and a further grant of \$750,000 is in the offing. Needless to add, that the project must have a lot of 'life' in it!

In the event of blood transfusion, apart from hygienic precautions, the doctor has to check and match the group and some groups are very rare. The blood should be free of diseases and should not be older than a month kept at 4°C. Some of the best and most cautious doctors stumble when it comes to blood transfusion proposition.

Gordhanbhai's research has the elimination of these and other constraints at the root. It is based on the principle that blood provides required quota of oxygen to the body through red-cells. This must happen in a liquid form containing soluble oxygen which can be injected into human body. A substitute for oxygen feeding red-cells has to be created.

Dr. Patel's substitute has the following characteristics.

- (1) It is free from expiry date constraint and can be preserved and used, whenever needed.
- (2) It will have a free grouping quality. Persons from all blood groups shall avail of it.
- (3) Being a manufactured product, availability and quantity shall not be any more the constraints.
- (4) It will be free from bacteria hence, free from infection.
- (5) It can be preserved at any reasonable temperature.

- (6) It will be free of cholesterol since it is not produced in human body.

When marketed, Dr. Patel's fruit of his research shall be as precious as elixir and shall eliminate hardships and hazards as well as risks of blood transfusions. People, who work in professions where accident risks are high, shall be able to carry the liquid as indulines are carried these days. Let us hope that the work on the project meets with prompt conclusion so that we see Dr. Patel's name in Medical Encyclopedia.

Instant X-Ray film is another landmark invention by Dr. Patel, which has been granted 'Patent' by the American Government in May, 1995. The film does not use silver as its production component, and hence costs less and takes less time in processing for finding results. It is free from radiation impact, both for the technician as well as the patient: The film can be used anywhere which saves the patient the hazards of going to an X-ray radiology centre. The National Cancer Institute and American Navy have contributed to this research project. TTI (Time-temperature Indicator) sticker is another unique invention of Dr. Patel. The sticker responds to the temperature and the permissible period for the use of medicines and other consumables. Food, drugs, cosmetics, chemicals are good for use only up to a time-limit and if preserved at a specific temperature. A number of times out-dated products particularly drugs are used after the expiry date causing damage to health and even death for the ailing millions. To test the usability of the product in relation to period and temperature apply a sticker on it. If it gets red, it is not desirable to use it. Bowater company has the rights to use this device. UNICEF alone used 36 crore stickers of this company. The use is catching up and many more countries shall avail of the invention.

Yet another of his invention is plating plastic with metals. The 'Simhasan' of Swaminarayan Bhagwan in Akshar Purushottam Temple in London is gold-plated according to his technique. The invention will go a long way to provide metallic gilt to a large variety of domestic appliances and toilet-bath accessories to make them look elegant, while giving them durability. The technique uses method and ingredients that make the process environment-friendly.

His inventions ensure better health and hygiene as well as enhanced and elegant utility. The gadgets at home and hospitals shall be free from infection and a guarantee that they are free from infection and a guarantee that they are free from hazardous effects. This shows his zest and commitment to work in the direction to improve the quality of human life and make it free from mindless man-made hazards.

Dr. Patel was born in Manund to God-fearing and culturally rich parents. They were an ideal couple. His father was reasonably literate, but extremely fond of reading; his mother had an enviable memory for bhajans, devotional songs and mythological tales. His elder brother after his B.Sc. is working as a manager in one of Assam's Tea Estates. Gordhanbhai went to Vallabh Vidyanagar from where he took his B.S. in 1964, Masters in 1966 and proceeded for Doctorate Research. In 1970 he got his Ph.D. on his thesis on 'Crystallization of Polymers'. He was deeply impressed and was influenced by the disciplined and meticulous style of work of his Guru, Dr. R.D. Patel. He has mastered both the pure sciences, Chemistry and Physics.

In 1970 he got a Fellowship for a post-doctoral training at University of Bristol, Bristol, England. With Dr. Keller, he conducted research on the reaction of chemicals and radiation on plastic and contributed 13 papers on his findings. He left for Baylor University in Texas in 1973, to join as Research Assistant. Later he came to Morris Town in New Jersey and worked for Allied Company as Research Scientist. The company had an annual turnover of over hundred crores of dollars. They could afford large funds for research programmes. He had a free hand at research here. Between 1974 and 1983, he wrote 43 research articles. His researches yielded 25 patents registered in favor of the company. He toured and lectured in many countries where he was either deputed by the company or was invited to seminars and conferences. His focus was the subject of his research 'The effect of Time and Temperature' on Polymer, Plastic materials. His articles are published in the prestigious Chemical Education Journal and many international journals. He has found a seat of honor among the scholars and scientists.

Research is dearest to his mind and soul. When he was a student he used to reflect on the repetitive study of time-torn, old theories founded by others. He fancied, then, if ever his writings would be taught in schools and colleges. Yes, for tenacious, preserving and dedicated scholars like Gordhanbhai, dreams do come true!

Though he had freedom and abundant resources made available to him at Allied Company, he sought to be independent. He had saved \$100,000. He gave half of it to his wife as he resigned from the company and told her to manage the household from that amount for the next two years. With the remaining \$50,000 he launched his personal research company JP Laboratories the initials denoting the names of his daughter Jessica and son Paresh. The venture involved risks and called for patience and colossal courage. The proposed research may take longer than expected; after the invention it had to be patented; patented production needs large investments; the product may not find desired market or by the time all these procedures do get completed a new and better product from someone else may hit the market! But Gordhanbhai refused to be let down in his determination. For him the slogan is excel and gets accepted. By now Gordhanbhai has received research grants worth more than \$27 lacs from different departments of American Government. He has added about \$10 lacs of his own royalty on research projects.

As a mark of his appreciation for the support he has received for his work, he charges the American Government half the amount of due rent for his 4500 sq.ft. premises. He collects \$10,000 less per annum by way of his remuneration as compared to what he was paid by Allied Company. He has two Ph.D.s and two Masters' degree holders working with him.

He is a cordial researcher to work with, who guides and encourages novices. His commerce graduate assistant Mina Gandhi and his daughter Jessica are co-investigators of Microwave Indicators. His library is worth more than a \$100,000 and contains some rare books. He spends huge amount on journals to keep an update of the research world. His daughter is a brilliant scholar while his son is a competent and deft business person. Gordhanbhai keeps aloof when it comes to visibility; he prefers to work behind the scenes, silently but with all the involvement

for good causes. He has the satisfaction that he will have the rejoicing soul and spirit of a savior of thousands of human beings as well as other living beings once his invention is in the market.

The subscribers to *Ahimsa* must look up at him as a *Rishi*. He is among the few scientists who, for their eminence, can be counted on finger tips. For certain he is a singular personality of his caliber and kind in America.