

VIDHLAXI AUDYOGIK SAMSHODHAN VIKAS KENDRA

INDUSTRIAL RESEARCH AWARDS  
2019 - 2020 - 2021



VASVIK





## **PROGRAMME**

Refreshments - 5.00 p.m.  
Please take your seat before 5.45 p.m.

Invocation..... Students of M.D. Shah Mahila College  
Music Dept.

Welcome..... Dr. Mohan I. Patel

Address.....Prof. M M Sharma

### **Award Presentation**

Response ..... Shri Srikant Badve - Leadership Awardee

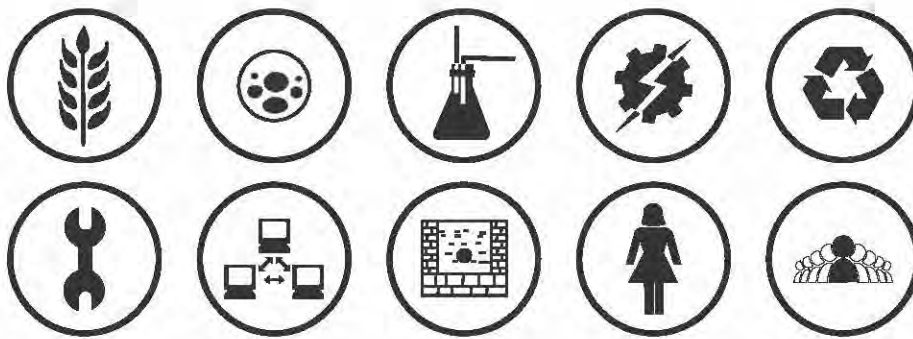
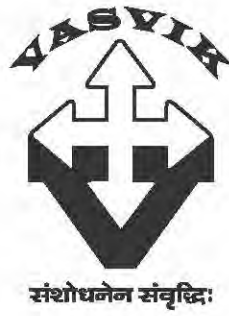
Address ..... Shri Amrishbhai Patel - Chief Guest

Vote of Thanks..... Shri Nayan Patel

### **National Anthem**

# VIVIDHLAXI AUDYOGIK SAMSHODHAN VIKAS KENDRA

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# VASVIK

## WELCOME ADDRESS

**Dr. Mohan I Patel**

Our Chief Guest this evening Shri Amrishbhai Patel, President of Shri Vile Parle Kelavani Mandal, Prof. M M Sharma, one of the most senior scientists of our country, my colleagues on the Board of VASVIK, men and women of science and friends.

On behalf of VASVIK, I extend to you all a very warm welcome to this Award function.

The awards are given on yearly basis. The function is held every 2 years. This year unfortunately, it has taken 3 years since last year it was not possible to hold the awards giving function due to pandemic.

Fortunately, there is some relief now from that situation and therefore we are able to organise this event which is an occasion, not only of giving awards, but also a get-together among scientists and all those interested in Science and Research.

I am indeed very grateful to you all for having so graciously responded to our invitation to attend this function, when scientists from all over India, who have contributed, through science, towards the economic

growth and prosperity of our country, have gathered here.

Our Chief Guest today is Shri Amrishbhai Patel, President of Shri Vile Parle Kelavani Mandal in whose premises we have the good fortune of being seated here today. Our Country is now in the coveted club of a few countries of the world which are in the forefront of research in the field of Science and Technology.

We are an Industrial power - ever increasing its productive capability through use of science.

India has one of the largest technically and scientifically qualified manpower. In fact, we are so prosperous in this field that we share substantially our technologically educated and accomplished manpower, with many countries of the world, particularly the USA and the UK.

There are institutions in our country that are so well established and are so efficiently turning out such man power in our country. We also have hundreds of technical colleges, the IITs and many highly developed educational institutions. Shri Vile Parle Kelavani Mandal is one of them. Its President Shri Amrish Patel, who is our Chief Guest today, is a well-known educationalist, business man, philanthropist and of course a politically well-established personality.

He is a member of the Maharashtra Vidhan Parishad and also the former minister in the Maharashtra Cabinet in charge of education, sports and youth affairs.

Apart from some more than 70 schools / colleges that he runs under different organizations, Shri Amrish Patel heads Shri Vile Parle Kelavani Mandal- one of the largest and top most educational trusts which runs schools, colleges, professional colleges, technical institutes and the very famous NMIMS Deemed University, of which he is the Chancellor.

NMIMS has campuses in Mumbai, Shirpur, Bengaluru, Hyderabad, Indore, Ahmedabad, Chandigarh offering U. G, P. G. and Ph. D. level professional programmes.

Prof. Sharma is the Chairman of our Board of Advisors, a committee of over 50 nationally and internationally known scientists of India. The affairs of our organization are conducted under his guidance. In 2008, he succeeded Prof. M G K Menon who was our Chairman for almost 35 years i.e. ever since VASVIK was established in 1974.

We know, Prof. Sharma as a walking encyclopedia of Science & Technology. During his professional career as a teacher, researcher and mentor, Prof. Sharma personally guided 71 Ph.D. students, who, in turn, together guided another 450. Subsequent third and fourth generation researchers guided another 400 and 50 Ph.D. students respectively, adding up to 971 doctorates constituting a 'Research Tree' a ~~clout~~ that has no parallel in Indian academia, and probably few anywhere else in the world, at least in the field of Chemical Engineering and Technology.

VASVIK Awards are given annually in eight disciplines of Science and Technology such as,

1. AGRICULTURAL SCIENCES & TECHNOLOGY
2. BIOLOGICAL SCIENCES & TECHNOLOGY
3. CHEMICAL SCIENCES & TECHNOLOGY
4. ELECTRICAL & ELECTRONIC SCIENCES & TECHNOLOGY
5. ENVIRONMENTAL SCIENCES & TECHNOLOGY
6. INFORMATION & COMMUNICATIONS TECHNOLOGY
7. MATERIAL & METALLURGICAL SCIENCES & TECHNOLOGY
8. MECHANICAL & STRUCTURAL SCIENCES & TECHNOLOGY



Many of the awardees are associated with educational institutions such as Technical Universities, the IITs and research laboratories all over India.

These awards carry a citation and a cash prize of Rs. 1.51 lakhs each. So also, there is a separate award for women scientists which carries the name "SMT. CHANDABEN MOHANBHAI PATEL INDUSTRIAL RESEARCH AWARD".

VASVIK has donated two air-conditioned auditoriums to the Institute of Engineers, one at Ahmedabad and the other at Vadodara with a capacity of 400 and 300 respectively. VASVIK Research Centre and a Bio-availability Centre have been put up and both are functioning well as a part of the Bombay Pharmacy College Campus.

When we look back on the work of about five decades, I feel satisfied and content that a noble purpose, for which this Foundation was started, has been amply fulfilled. We have so far recognized over 450 scientists for their outstanding contribution to India's technical and industrial prosperity. This would not have been possible without the willing and generous support and advice we receive from such great scientists as Prof. MGK Menon, Prof. M M Sharma, Dr. R A Mashelkar, Prof. P.N. Tandon, Dr. A V Rama Rao, Dr. S K Brahmachari, Prof. Anupam Varma, Dr. M. S. Swaminathan, Prof. Sivaram, Prof. U B Desai, Dr. Sukumar Devotta, Dr. G Sundara Rajan, Dr. Vijay Bhatkar, Dr. P Rama Rao, Dr. M.L. Munjal, Dr Gautam Biswas, Dr Srikumar Banerjee and others who have been actively associated with us.

For the last eight years we have added one more award that is for industrial entrepreneurs, who have established and developed their industrial units through research, more particularly within their own organization. The last such Award of 2017-2018 was presented to Shri Madhukar B. Parekh, chairman of Pidilite Industries.

I am happy to announce that the Apex Committee of VASVIK has decided to present this year's Industrial Entrepreneur award to Shri Shrikant Badve of Badve Group, who has used technology and indigenous research to develop and manufacture various products for the automobile industry.

By the way, he also manufactures Roses, I mean the very beautiful flowers. What was unbelievable just a century ago, has now been made possible with the great contributions of our star researchers and scientists. Some of those stars, we are recognizing today. My sincere congratulations to all of them. This kind of recognition of talent can go a long way in giving a push to Prime Minister Modi's 'Make in India' strategy and thereby increasing India's competitive strength in the global market as also the share of manufacturing sector in India's GDP and total employment. Our efforts towards self-reliance – Atma Nirbharta and our aim at Sab Ka Saath -Sab Ka Vikas is possible to be achieved only because of the substantial contribution by the Science and Research Community. The nation depends on our scientists and developers to guide them to produce more, with less and for many.

While speaking about our organization and management, I am very happy to share with you the good news that one of the directors of our VASVIK organization, Shri Nayan Patel has been appointed the Hon. Consul of the United Republic of Tanzania in Mumbai. A good thing happens and my mind starts thinking. How to make use of such an excellent opportunity? Can we not do something in the direction of sharing Science and Technology with Tanzania? Promotion of education, exchange of students and scientists and taking up some projects of common interest?

Friends,

Many of you have come long distances and I am glad that some with families. I take special pleasure in welcoming you all once again, the Awardees – the Scientists and their families, my fellow Board Members of VASVIK, men of Public Life, Social Workers, Educationalists and Students of Science. For all those who have come from outside, I wish a pleasant sojourn here in Mumbai.

I am overwhelmed with your presence in such a large number, which is a source of encouragement to all of us at VASVIK. In fact, it is a driving force, which has kept us going all these years.

Thank you!!!

## AWARD FUNCTIONS

YEAR	PRESIDED OVER BY	CHIEF GUEST & GUESTS OF HONOUR
1976	Shri Rajni Patel	Shri T. A. Pai (Union Minister for Industry) Shri Chatrabhuj Narsee Shri D. D. Desai (Member of Parliament)
1977	Shri Bhailalbhai Contractor (Minister of Industries, Gujarat)	Shri H. M. Patel (Union Minister For Finance)
1978	Shri Ramkrishna Bajaj	Shri Morarji Desai (Prime Minister of India) Shri Sharad Pawar (Chief Minister of Maharashtra)
1979	Shri Jaikrishna Harivallabhdas	Shri M. Hidayatullah (Vice-President of India)
1980-81	Shri S. P. Godrej (Sheriff of Mumbai)	Shri Vasantdada Patil (Chief Minister of Maharashtra) Shri Sushil Kumar Shinde (Finance Minister of Maharashtra)
1982-83-84	Shri N. M. Desai	Dr. S. D. Sharma (Governor of Maharashtra)
1985-86	Shri Viren Shah	Shri P. V. Narasimha Rao (Union Minister for Human Resource Development)
1987-88	Shri Kamal Morarka (M. P.)	Prof. M. G. K. Menon (Union Minister of State for Science & Technology and Human Resource Development)
1989-90-91	Prof. M. G. K. Menon	Shri Shivraj Patil (Speaker, Lok Sabha)
1992-93	Prof. M. G. K. Menon	Dr. Manmohan Singh (Union Finance Minister)
1994 to 98	Prof. M. G. K. Menon	Shri Suresh Prabhu (Union Minister for Power)
1999-2000	Prof. M. G. K. Menon	The Rt. Hon. John Prescott (Dy. Prime Minister of the U.K.) Shri Suresh Prabhu (M. P. - Ex. Union Minister for Power)
2001-02	Prof. M. G. K. Menon	Shri Praful Patel (Union Minister for Civil Aviation) Lord Navnit Dholakia (Chairman, Liberal Democratic Party - U.K.)
2003-04-05	Prof. M. G. K. Menon	Dr. A. P. J. Abdul Kalam (President of India)
2006-07-08	Prof. M. M. Sharma	Shri Narendra Modi (Chief Minister of Gujarat)
2009-10-11	Prof. M. M. Sharma	Dr. R. A. Mashelkar (Well Known Scientist) Shri Niraj R. Bajaj (Director, Bajaj Group)
2012-13-14	Prof. M. M. Sharma	Shri Piyush Goyal (Union Minister of State for New & Renewable Energy, Power & Coal) Shri Amrish R. Patel (President, Shri Vile Parle Kelavani Mandal)
2015-16	Prof. M. M. Sharma	Shri Suresh Prabhu (Union Minister For Railways)
2017-18	Prof. M. M. Sharma	Dr. Anil Kakodkar (Former Chairman, Atomic Energy Commission of India)
2019-20-21	Prof. M. M. Sharma	Shri Amrishbhai Patel President, SVKM & Chancellor, NMIMS University

## CHIEF GUEST



### **SHRI AMRISHBHAI PATEL**

**President, SYKM & Chancellor, NMIMS University**

Shri Amrishbhai Patel

President, SYKM & Chancellor, NMIMS University

Shri Amrish R. Patel is a well-known educationalist, businessman, philanthropist and a political personality. He is sitting MLC, elected unopposed in 2021, from Dhule & Nandurbar District for consecutive eight terms, Amrishbhai served as Cabinet Minister for School Education, Sports & Youth Affairs in the Government of Maharashtra in 2003.

He has been instrumental in transforming Shirpur from a village to a well-developed self-sufficient town by providing uninterrupted electricity and water throughout the year, concrete roads, world-class education, recreational facilities, employment opportunities and much more; thereby improving the quality of life of citizens. The Shirpur Municipal Corporation is one of the best Municipal Corporations in the Country. Currently, a Medical college and 500-bed hospital are under construction at Shirpur.

As an educationalist, Amrishbhai is:

- President of Shirpur Education Society since 1979, which runs about 70 schools imparting preprimary, primary, secondary, and higher education and Director of R. C. Patel Educational Trust, which runs several schools, junior and senior colleges, professional colleges and Ashram schools in Shirpur.
- President of Shri Vile Parle Kelavani Mandal, Mumbai since 2002.
- Chancellor of NMIMS, Deemed to be University having its campus in Mumbai, Navi Mumbai, Bengaluru, Hyderabad, Dhule, Shirpur, Indore and Chandigarh.

Shri Amrish Patel has been the driving force for the expansion of SYKM and NMIMS with new schools and colleges offering interdisciplinary, innovative programmes, which include MBA, Entrepreneurship and Family Business, Engineering, Pharmacy, Commerce, Economics, Architecture, Science, Mathematics, Statistics and Analytics, Liberal Arts, Law, Design, Aviation, Hospitality Management, Branding & Advertising and Agriculture.

## BOARD OF DIRECTORS



**Dr Mohan I Patel**  
D.Sc., (h.c.) F.I.E.  
Ex-Sheriff of Mumbai

Dr. Mohan Patel, after graduating in Mechanical and Electrical Engineering from Faraday House College of Engineering, London, joined the London office of Tata in 1952.

After some six years of technical and business experience with them, he established Luns Metals, Extrusion Processes, Impact, P & R Automation and other companies, known as the Patel Extrusion Group (PEG), of which he is the Chairman. He developed for the first time in the world, the Ophthalmic Nozzle pure aluminium tube.

His group of companies manufacture a wide variety of aluminium-extruded products such as collapsible tubes, rigid containers, bottles, extruded sections and profiles, colour cartons, as also machinery to manufacture these items. PEG plants are located at Mumbai, Vadodara, Vapi, Silvassa and Goa.

A keen observer and student of Industrial Economics, he realised very early that for India, to progress economically, research in the field of industry and agriculture must be intensified and made relevant so as to make use of indigenously available raw materials and talent. In a country where natural resources are limited in relation to the large population it has to sustain, human ingenuity must be put to work so as to increase per capita output. It was from this desire to promote greater creativity, innovativeness and inventiveness in India that the idea of VASVIK was born.

#### Awards received:

- Udyog Vibhushan
- Priyadarshini
- Jannalel Beja
- Vishwa Gurjar
- CLEO
- Arch. of Europe
- Gold Star
- N.R.I. Award
- CHEMINOR
- Lifetime Achievement Rotary Award
- Aryabhat Award for Mathematics
- Dhya Bhaskar Award of The Indian Planetary Society



**Shri Nayan Patel**  
Executive Director  
Patel Extrusion Group

Shri Nayan Patel graduated in Mechanical Engineering from Fachhochschule, Konstanz, West Germany.

He had his post-graduate assignment in the field of Impact Extrusion Technology and Industrial Automation with attachments at several reputed manufacturing organizations in West Germany. Shri Nayan Patel is the Executive Director of Patel Extrusion Group, World's largest manufacturers of Decorated Aluminium collapsible tubes.

He pioneered the design and manufacture of fully automatic tube manufacturing lines and also set up Pacdon Controls Pvt. Ltd. which provides and manufactures Motion Control Devices such as Cam Inducers and Slip Rings.

The time that he can spare from his multifarious industrial activities, he devotes to several other industrial organizations in various capacities. He is actively involved with:

- IMC Chamber of Commerce and Industry of which he is the past President.
- Bombay Industries Association, Mumbai (BIA)

He is also connected with many educational and social institutions. Prominent among which are:

- Homeopathic Education Society's College & Hospital
- Shri Vile Parle Kalavari Mandal
- Charusat University, Changa, Gujarat
- Jansava Samitis' Mahila College at Malad
- Sunjba Vidya Mandir at Jogeshwar
- Honorary Consul of The United Republic of Tanzania in Mumbai



## BOARD OF ADVISORS



**Shri Kartik Patel**  
Director  
Patel Extrusion Group

Shri Kartik Patel graduated in Mechanical Engineering from Bhagubhai Polytechnic, Mumbai, in 1980. Underwent in-plant training at Alfons Mall, machinery manufacturers of Germany.

Shri Kartik Patel is the Director-in-charge of procurement and production, planning and co-ordination in the Patel Extrusion Group, which is the largest manufacturer of decorated aluminium collapsible tubes in the world.

He is also in charge of manufacturing custom made profiles, aluminium containers, aerosols and bottles.

He is associated with various social, educational and industrial organizations and devotes considerable time working for them.



**Prof. M M Sharma**  
Ex. Director, UDCT (ICT)

Professor Man Mohan Sharma is an institution in himself, being the most decorated UDCT alumnus in the country whose life's mission has been to serve the chemical industry and the profession of chemical science, engineering and technology.

He is a knowledge engineer with unparalleled record in the annals of chemical engineering and technology. Teaching, research and consultation have been his mantra and he has offered innumerable advices to industry and government on matters vital to the growth of chemical engineering science, education and nation at large.

Countless decorations, honors and fellowships have not stopped him from learning new things every day. Whether Moulton Medal of Institution of Chemical Engineers (UK) (1971, 77), SS Bhatnagar prize of the CSIR for engineering sciences (1973), Padma Bhushan (1987), Fellowship of the Royal Society, London (1990), distinguished Academician Award, IIT Patna (2014) or Rajasthan Science Congress Award (2016); to cite just a few. He is as humble and inspiring educator and advisor as ever. He has 250 research papers in Chemical Engineering Science, Chemical Engineering Research and Design and Industrial and Engineering Chemistry Research to his credit. MMS, as he is popularly known, has supervised 71 Doctoral Thesis and 35 M. Chem. Eng./ M.Sc. (Tech) Thesis.

UDCT has been his Karma Bhumi and Chemical Engineering a Rashtra Karya. MMS the unstoppable chemical engineer, has brought international accolades to the Indian Chemical Engineering Profession and the University of Mumbai. He is the only engineer from the university system to be honoured as Fellow of the Royal Society. UDCT and the University of Mumbai have benefited immensely from his selfless service of the past four decades.

The Civilian award of PADMA VIBHUSHAN by the President of India on the Republic Day, the 26th January 2001 is a tribute to Professor Sharma's monumental contribution to chemical engineering science and technology, chemical industry and the government on important policy matters for nation building.

# BOARD OF ADVISORS

## BOARD OF ADVISORS

### AGRICULTURAL SCIENCES & TECHNOLOGY

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New Delhi

**Dr. W.S. Lakra**

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All India Institute of Medical Sciences  
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CSIR- National Chemical Laboratory,  
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IIT Kanpur

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Nagpur

**Dr. Paritosh C. Tyagi**

Former Chairman – CPCB, Noida

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Chancellor, Nalanda University, Pune

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Managing Director  
Maharashtra Knowledge Corporation Limited  
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Chief Editor, CSI Communications, Gurgaon

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**Dr. Bharat S. Chaudhari**

Professor  
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Maharashtra Institute of Technology,  
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Hyderabad

**Dr. A.K. Suri**

RR Fellow BARC DAE Mumbai

**Prof. Indranil Manna**

Professor, Metallurgical & Materials Engineering IIT  
Kharagpur

**Dr. Pradip P**

Chief Scientist and Head - TCS  
Process Engineering Innovation Lab,  
Pune

### MECHANICAL & STRUCTURAL SCIENCES & TECHNOLOGY

**Prof. Gautam Biswas, FNA, FASc, FNASc, (Chairman)**

Professor  
IIT Kanpur, Kanpur

**Dr. Vijay N Gupchup**

Director, Ion Exchange  
Mumbai

**Prof. P. P Majumdar**

Professor, IISc,  
Bengaluru

**Subhasish Dey**

Professor, IIT Kharagpur  
Kharagpur



## **Dr. Mohan I. Patel VASVIK Award for Leadership in Leveraging Scientific and Technological Research for Economic Growth**

### **AIM:**

VASVIK - the multi-purpose industrial research promoting centre was founded in 1974 with the aim to help promoting research to achieve economic prosperity and sustainable development. The nine annual awards each of cash prize of ₹1,51,000 and a citation are given to the Indian scientists for research in various fields. With the same aim in mind a new award is instituted from the year 2014, called "Dr. Mohan I. Patel VASVIK Award for Leadership in Leveraging Scientific and Technological Research for Economic Growth".

### **OBJECTIVES:**

A memento and a citation to be given to an eminent person from industry who has made use of indigenous R & D work for industrial growth and contributed to economic prosperity of India.

### **SCOPE:**

Consideration will be given to efforts made for encouragement and implementation of industrial R & D work and achieving industrial and economic growth by import substitution and/or export of products/services, saving/earning foreign exchange, increased production, cost reduction etc.

### **FREQUENCY:**

The award will be given at the time of each VASVIK Awards function.

### **COMMITTEE:**

Search cum Selection Committee will consist of Directors of VASVIK, Chairman of Board of Advisors of VASVIK and the last recipient of the award.

### **SHORT TITLE:**

Dr. Mohan I. Patel Industrial Research Leadership Award.

## **The recipient of Dr. Mohan I. Patel VASVIK Award for Leadership in Leveraging Scientific and Technological Research for Economic Growth for the year 2022.**

### **Shri Shrikant Badve** Managing Director, Badve Group of Companies



Badve Group of Industries has immensely contributed to further technological development with indigenous research, especially in the field of Automotive Engineering.

Shri Shrikant Badve completed his B.E in Electronics & Telecommunication from Jawaharlal Nehru Engineering College (Aurangabad) 1987, graduating with a distinction.

Shri Badve is a first-generation entrepreneur, who decided to take the giant leap of starting his own business in 1988. Today, Badve group has a Pan-India presence with 30 manufacturing locations and an ever-expanding global footprint. Their Product Portfolio specializes in Metal Processing, Polymer Processing, Suspension Systems, Mirrors, Home Appliances, Security Hardware, Floriculture and Foundry Products.

Shri Badve is a recipient of National Award for Quality Products & National Award for Entrepreneurship at the hands of Dr. Shankar Dayal Sharma, then President of India and National Award for Research & Development at the hands of Dr. Manmohan Singh, then Prime Minister of India, among others.

Shri Badve was Brand Ambassador of "Magnetic Maharashtra", as representative of business & industry - an initiative of Government of Maharashtra. He is a Founder Trustee of "United World against Diabetes", non-profit organization, recognized by the UN.

# AWARD WINNER 2019, 2020 AND 2021

Award Category		2019	2020	2021
Agricultural Sciences & Technology Prof. Anupam Varma (Chairman)	Biological Sciences & Technology Prof. P N Tandon (Chairman)	Dr. A.K. Singh Director, IARI, New Delhi	Dr. A. Gopalakrishnan Director, ICAR - Central Marine Fisheries Research Institute, Kochi	Dr. A. Kumaresan Principal Scientist, ICAR-NDRI, Bengaluru
		Dr. P. Sarat Chandra Prof. & Head of Unit, Neurosurgery, AIIMS, New Delhi	Dr. Debojyoti Chakraborty Senior Scientist, CSIR - Institute of Genomics and Integrative Biology, New Delhi & Dr. Souvik Maiti Principal Scientist, CSIR - Institute of Genomics and Integrative Biology, New Delhi	Dr. Divan S. Rawat Professor, University of Delhi, New Delhi
Chemical Sciences & Technology Dr. Swaminathan Sivaram (Chairman)	Electrical & Electronic Sciences & Technology Prof. Uday B Desai (Chairman)	Dr. N.V. Choudhary Scientist Emeritus, H.P Green R&D Centre, Hindustan Petroleum Corporation Ltd, Bengaluru & Dr. S.V. Joshi Head, Dept. of Pharmaceutical Sciences & Technology, Institute of Chemical Technology, Mumbai	Dr. Pramod S. Kumbhar President & Chief Technology Officer, The R&D Center, Praj Industries Ltd, Pune	Prof. T. Pradeep Professor, IITM, Chennai & Dr. P. Thanikalvelan Senior Principal Scientist, CSIR - Central Leather Research Institute, Chennai
		Prof. Shanthi Pavan Prof. Department of Electrical Engineering, IITM, Chennai	Dr. Yogesh Singh Chauhan Prof. Indian Institute of Technology, Kanpur & Dr. Prabhjot Kaur Co-Founder and CEO, Esmito Solutions Pvt Ltd, Chennai	Dr. Mayank Shrivastava Faculty Member, IISc, Bengaluru & Dr. Kannan Lakshminarayan Professor, Dept. of Engineering Design, IITM, Chennai
Environmental Sciences & Technology Dr. Sukumar Devotta (Chairman)	Information & Communication Technology Dr. Vijay Bhatkar (Chairman)	Dr. Mukesh Sharma Prof. Department of Civil Engineering, IIT, Kanpur	Dr. Makrand Ghangrekar Prof. Dept. of Civil Engineering, IIT, Kharagpur & Dr. Nitin Kumar Labhasetwar Chief Scientist & Head, Energy & Resource Mgt Division, CSIR-NEERI, Nagpur	Dr. K. P. Nyati Environment Professional, New Delhi
		Dr. N. Sarat Chandra Babu Executive Director, Society for Electronics Transactions and Security, Chennai	Dr. B. Krishna Murthy Senior Director (Scientist G), Ministry of Electronics and IT, New Delhi	Dr. Milind Pande Pro. Vice-Chancellor, MIT World Peace University, Pune
Material & Metallurgical Sciences & Technology Dr. G Sundararajan (Chairman)	Mechanical & Structural Sciences & Technology Prof. Gautam Biswas (Chairman)	Dr. B B Kale Scientist - G / Director CA, Ministry of Electronics & Information Technology, Pune & Dr. Pritam Deb Professor, Dept. of Physics, Tezpur University, Tezpur	Dr. Kinshuk Dasgupta Head, G & AMD, Materials Group, Bhabha Atomic Research Centre, Mumbai	NO AWARDEES
		Dr. P.V. Venkatarishnan Director, Capacity Building Programme Office, ISRO, Bengaluru	Dr. Tarun Kant Professor Emeritus, Department of Civil Engineering, IIT, Mumbai	Dr. Kiril C. Sahu Professor, Dept. of Chemical Engineering, IIT Hyderabad
Smt. Chandaben Mohanbhai Patel Industrial Research Award for Women Scientists	Dr. Mohan. I. Patel Industrial Research Leadership Award	Dr. Sudha Rao Co-Founder & Executive Director, Genotypic Technology Pvt.Ltd, Bengaluru & Dr. Sadhana Rayalu Chief Scientist & Head, Environmental Materials Division, CSIR-NEERI, Nagpur	Dr. Ranu Swarup Secretary, Ministry of Science & Technology, Government of India, New Delhi	Dr. Ananya Nisal Principal Scientist, CSIR-National Chemical Laboratory, Pune
		Smt. Shrikant Badve Managing Director, Badve Group of companies		



## AWARD WINNERS FOR AGRICULTURAL SCIENCES & TECHNOLOGY

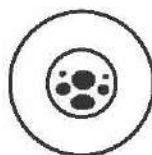
YEAR		NAME	SUBJECT OF RESEARCH
1976		Dr. G. J. Patel Project Co-ordinator (Tobacco), Agricultural University Anand.	: High Yield hybrid variety of bidi tobacco.
1977	1	Dr. C. T. Patel Research Project Co-ordinator, I.C.M.F. Surat	: Evolution of varied types of cotton and Hybrid-4 variety in particular.
	2	Shri M. J. Balkrishna Rao Geneticist Botanist central Rice Research Institute, Cuttack (Orissa)	: Development of varieties of rice like Padma, Krishna and Bala.
1978	1	Dr. S. H. Patil Bhabha Atomic Research Centre, Bombay	: Development of groundnut varieties with use of mutations giving more oil content and higher yields per hectare.
	2	Dr. G. S. Venkatraman Indian Agricultural Research Institute New Delhi	: Algology-biological Nitrogen fixation by blue-green Algae and its utilization for ric cultivation.
1979		Dr. N. Ganga Prasad Rao National Research Centre, Hyderabad	: The improvement of oilseeds, Pulses and dry land cropping and discovery of apomixis in sorghum.
1980		Dr. E. A. Siddiq Division of Genetics Indian Agricultural Research Institute New Delhi	: Physiochemical and genetic aspects of rice quality leading to quick maturing varieties of basmati rice.
1981		Dr. B. H. Katarki Agricultural Research Station Dharwad (Karnataka State)	: Cotton research leading to development and release to Jayalaxmi, Soubhagya and DB-3-12 varieties & various hybrids.
1982		Dr. S. K. Sinha Indian Agricultural Research Institute, New Delhi	: Cultivation practices of pulses and wheat selection of mutants' responsive irrigation photosynthesis & nitrogen fixation in pulses.
1983	1	Dr. Akhtar Hussain Central Institute of Medical & Aromatic Plants Lucknow	: Development of Agro Technology including disease control, cultivation and processing of Medicinal plants & essential oil bearing plants.
	2	Dr. B. R. Tyagi Plant Breeding Centre Institute of Control, Medicinal & Aromatic Plants, Lucknow	: Development of Agro Technology including disease cultivation and processing of Medicinal plants and essential oil bearing plants.
1984		Dr. S. Bhaskaran Hindustan Level Research Centre, Bombay	: Plant Tissue Culture-application to Coconut plantation, cardamon, sugarcane and tomato.
1985		Dr. Inder Pal Abrol Central Soil Salinity Research Institute, Haryana	: Research and Development of Salt affected soils. Reclamation & utilization of Alkali soils for agriculture & agro forestry.
1986	1	Dr. S. C. Mohapatara Central Avian Research Institute, Izatnagar	: Poultry Breeding commercial exploitation of IL-1-80 Strain.
	2	Dr. Dalbir Singh College of Agriculture PAU, Ludhiana	: Poultry Breeding leading to commercial exploitation of two strains Pb-I and Pb-II.
1987		Dr. S. M. Patel Indian Institute of Low Resistance	: Improvement of existing agricultural pump sets. Development of low resistance foot valve for lift irrigation.
1988		Dr. G. S. Sekhon Potash Research Inst. of India, Gurgaon	: Studies on soil potassium, evaluation of phosphorus fertilizers soil testing, plant analysis, environmental pollution leading to optimum use of fertilizers & nutrients.
1989		Dr. Anupam Varma	: For developing technologies for quick and reliable diagnosis of viral and mycoplasmal diseases (VMDs) of crop plants.
1990		Dr. Yash Pal Abrol	: Elucidated the biosynthesis of a number of cyanogenic compounds.
1991		Dr. Raj Mani Pandey	: For his pioneering work in tissue culture especially pertaining to the cultivation of papayas of a known sex



YEAR	NAME	SUBJECT OF RESEARCH
		type is one of the most speedy and cost-effective methods.
1992	Dr. Shanti Lal Mehta Indian Agricultural Research Institute, New Delhi	: Contributions in areas of genetic engineering of <i>Lathyrus sativus</i> to obtain low toxin cultivar, molecular mechanism of storage protein bio-synthesis in high lysine cereals, Co-sensitivity of cytochrome oxides differences in plants and nutrition.
1993	Dr. Jawaharlal Sehgal National Bureau of Soil Survey, Nagpur	: Developed a 3-tier resource mapping methodology using image interpretation, field surveys and cartography. Soil resource mapping & Land Use Planning & agro-ecological zoning have provided rationale to take land use planning decisions for increased agricultural production on sustainable basis.
1994	Dr. Rattan Lal Yadav Cropping Systems Research Indian Council of Agricultural Research, Meerut	: Developing of Integrated Nutrient Supply & management system for Soil Fertility and Productivity of sugarcane.
1995	Dr. V. Arunachalam M S Swaminathan Research Foundation, Chennai	: Rationalising genetic concepts in plant breeding.
1996	Dr. Raj Krishan Gupta A.D.G (Soil) I.C.A.R. Krishi Bhawan, New Delhi	: Development of nutrient sorption of alkali soil, salt tolerance of plants, tree sapling in saline soil & skimming fresh water from saline ground water.
1997	Dr. Y. R. Sarma Indian Institute of Spices Research, Calicut	: Contribution to disease control of black pepper, cardamom, ginger and cashew.
1998	1 Prof. Jeevan Prakash Verma Plant Pathology, IARI, New Delh	: Development of bacterial damage control of cotton.
	2 Dr. Om Prakash Govila Indian Agriculture Research Institute, New Delhi	: Development of Downy mildew resistant hybrid for breeding of pollinator.
1999	1 Dr. T. S. Verma IARI Regional, HP 2 Dr S. Joshi 3 Dr P. C. Thakur Principal Scientists, IARI	: For development of a variety of Paprika for Oleroresin extraction. The variety Kt PI-19 has been produced and distributed to commercial units for Oleroresin extraction and powder making.
2000	Dr. P Ananda Kumar IARI, Delhi	: For development of fruit borer resistant Bt strains for brinjal, tomato, potato and cabbage.
2001	Dr. Subhas Chandra Mukherjee Central Institute of Fisheries Education, Mumbai	: For development of Polyvalent Vaccine for immunization of fish against aeromonas hydrophila.
2002	Dr. R. K. Pathak Central Institute for Sub-tropical Horticulture, Lucknow	: For development of agro-techniques for aonla, cultivation on sodic land, rejuvenation of mango, plant nutrient management and pest management.
2003	1 Dr. Naseema Beevi 2 Dr. Thomas Biju Mathew 3 Dr. K. Saradamma Kerala Agricultural University, Vellayani	: For development of eco-friendly pest control of coconut and palm health care practices.
2004	Dr. C. Chattopadhyay NRC on Rapeseed Mustard, Bharatpur	: For development of integrated disease management in oil seeds and vegetable crops using eco-friendly strategies, plants extracts & identification of disease resistance in oilseed crops.
2005	Dr. Paramvir Singh Ahuja I.H.B.T., Palampur	: For development of tea biotechnology consisting of micro propagated shoots on seedlings, characterising & DNA fingerprinting of tea germ plasm & Catechin biosynthetic pathway in tea.

YEAR	NAME	SUBJECT OF RESEARCH
2006	Dr. D. D. Patra Scientist G & Head Agronomy and Soil Science, CIMAP, Lucknow	: For the development of the scientific understanding of the N <sub>2</sub> fixation method and development of a slow release urea formulation for sustained availability of nitrogen for plants and maintenance of soil fertility.
2007	Dr. R. K. Jain Head, Division of Plant Pathology, IARI, New Delhi	: For development of virus resistant transgenic crop varieties of groundnut, papaya and tobacco streak.
2008	Dr. W. S. Lakra Vice Chancellor & Director, Central Inst. of Fisheries Education, Mumbai	: For developing DNA barcoding of variety of Indian fish species and of fish cell and tissue culture techniques.
2009	Dr. K. Gopakumar Former Deputy Director General (Fisheries) ICAR, New Delhi	: For his contribution in research of structure, composition and biosynthesis of fatty acids in tropical fish, microbiology, Processing, development of fisheries products and waste utilization resulting into many novel and attractive processes.
2010	Dr. Subodh Kumar Bhatnagar Professor & Head, SVP University of Agriculture & Technology, Meerut	: He has contributed significantly to Agro Science based on fundamentals of Agro growth and increased crop yields.
2011	Dr. T. R. Sharma Principal Scientist, NRC on plant Biotechnology, IARI, New Delhi	: He has conducted genome sequencing projects for crops like rice, tomato, pigeonpea (Toor Dal), mesorhizobium mango and puccinia.
2012	Dr. T. K. Srinivasa Gopal Director, Central Institute of Fisheries Technology, Cochin	: For development of Technology for Processing, Packaging and preservation of fish and other sea food products and for producing thermoformed trays - replacement for imported HDP containers.
2013	Dr. Sanjay Kumar Senior Principal Scientist, Biotechnology Division, CSIR- IHBAT, Palampur, H.P.	: For the development of technology of a novel enzyme "Superoxide dismutase" (SOD) associated with controlling oxygen toxicity arising out of oxidative stress in any living system.
2014	Dr. P. K. Mukherjee Scientific Officer G, Nuclear Agriculture and Biotechnology, Division, B.A.R.C., Mumbai.	: For the development of technology to cultivate the most widely used bio-control fungus Trichoderma and for the development of novel genes and gene products for use in agriculture for biological control of plant diseases.
2015	Dr. M.S. Chauhan Director, ICAR-Central Institute for Research on Goats (CIRG), Makhdoom, Mathura (UP)	In Vitro Fertilization (IVF) of embryos in cattle, buffalo, goat and yak, production of embryonic stem cell lines in buffalo, cloning in buffalo and Ovum pick up (OPU) – IVF technology in cattle and yak. These technologies have helped produce superior quality animals – cloned buffaloes, Sahiwal cattle and yak in the country.
2016	Dr Pritam Kalia Principal Scientist, Division of Vegetable Sciences, IARI, New Delhi	Understanding of genetic mechanism for hybrid breeding and development of nutraceutical-rich varieties of vegetables through traditional and molecular breeding.
2017	Dr Shelly Praveen Head & Principal Scientist, Division of Biochemistry, Indian Agricultural Research Institute, Delhi	For employing latest biotechnological tools and viral 'R' genes for developing virus-resistant plants with no footprints of any exogenous protein.
2018	Dr Amrish Kumar Tyagi PS & Head, Animal Nutrition Division, NDRI, Karnal	For his contribution towards developing technologies to produce conjugated linoleic acid (CLA) -rich milk and ghee. Ruminant fat is the only significant source of CLA in the human diet to provide health benefits such as anti -allergic, anti-inflammatory, anti-cancerous and anti-obesity by reducing the risk of cardio vascular and other diseases.

<b>YEAR</b>	<b>NAME</b>	<b>SUBJECT OF RESEARCH</b>
2019	Dr A.K Singh Director IARI, New Delhi	For his contribution in basic and applied research on rice genetics and breeding.
2020	Dr A Gopalakrishnan, Director ICAR-CMFRI, Kochi	For his contribution to the Genetic Stock Identification (GSI), species inventory, taxonomy, breeding and seed production of threatened and important species for mariculture, which has helped improve scientific knowledge on indian fishery.
2021	Dr A Kumaresan Principal Scientist ICAR-NDRI, Bengaluru	For his contribution to the identification of Sex-specific proteins in bull spermatozoa to produce more female cows at a cheaper cost.



## AWARD WINNERS FOR BIOLOGICAL SCIENCES & TECHNOLOGY

YEAR		NAME	SUBJECT OF RESEARCH
1976		No Award	
1977		No Award	
1978		Dr. V. Jagannathan Biochemistry Division NCL, Pune	: Development of high-yielding virus-free sugarcane through tissue culture.
1979	1 2 3 4 5	Shri P. S. Appukuttan Dr. Subal Bishayee Dr. Avadesha Suroli Dr. D. Thambi Dorai Indian Institute of Experimental Medicine, Calcutta Dr. Shiv Pillai Kothari Centre of Gastro-enterology, Calcutta	: Development method of indigenous production of lectins having wide application in medicine and industry.
1980		No Award	
1981	1 2 3 4	Dr. N. M. Khanna Dr. Jagat Pal Singh Sarin Dr. Satyawar Singh Shri Ramesh Chandra Nandi Central Drug Research Institute, Lucknow	: Medicinal chemistry, development of new contraceptive agents, devices and drug delivery systems and drug Standardization.
1982		No Award	
1983	1 2	Dr. A. P. Joshi Dr. S. V. Gangal C.S.I.R. Centre for Bio-Chemicals University of Delhi, New Delhi	: Production of Allergens for respiratory allergies. Propagation of therapy.
1984		No Award	
1985	1 2 3	Dr. Prabhakar Shripad Borkar Dr. S. Ramachandran Dr. Churya Sivaraman Hindustan Antibiotics Ltd. Pimpri, Pune	: Development of high-tech process for production of 6-APA.
1986		Dr. B. N. Dhawan Scientist, Central Drug Research Institute Chattar Manzil Palace, Lucknow	: Pre-clinical and clinical evaluation leading to development of Dilex-c, Cemtocain, Centosyn and Guglip.
1987	1 2 3	Dr. V. C. Vora Dr. M. C. Bhatia Dr. S. K. Chatterjee Central Drug Research Institute, Lucknow.	: Development of Fermentation Process Technology for converting benzaldehyde to 1-Phenyl acetyl carbinol an intermediate for 1-ephedrine hydrochloride.
1988		Dr. A. F. Mascarenhas Scientist-F Div. of Biochemical Sciences National Chemical Laboratory, Pune	: Application of plant cell culture Obtaining high multiplication rate for sugarcane Co-740 and elite varieties of cardomom for rapid clonal propagation of Eucalyptus tereticornis.
1989	1 2	Dr. Suprabhat Ray Dr. Ved Prakash Kamboj Central Drug Research Institute, Lucknow	: For having made outstanding contributions in the area of contraceptives by developing a novel non-steroidal postcoital orally effective drug Centchroman.
1990		No Award	
1991		No Award	
1992		Dr. Lalji Singh Centre for Cellular & Molecular Biology, Hyderabad	: Dr. Singh and his colleagues in the CCMB, at Hyderabad, developed a probe called Bkm-derived NDA fingerprinting, as a fallout of their earlier Internationally well known work on the mechanisms of determination of sex.

YEAR	NAME	SUBJECT OF RESEARCH
1993	1 Dr. Ramamoorthy Vaidyanatha Swamy 2 Dr. Karumuru Mallikarajana Rao Defence Research & Development Establishment, Gwalior	: This research team in DRDE, Gwalior has developed after intensive laboratory, field and pilot plant studies (over a period of one decade), a technology for manufacture of the new multi-insect repellent namely N, N - diethylphenylacetamide (DEPA).
1994	Dr. S. K. Gupta National Institute of Immunology, New Delhi	: Development of immuno-diagnostic kits for pregnancy streptococci infection and causative agent for rheumatic fever.
1995	1 Dr. Suresh Ramnath Naik 2 Dr. Girish Mahadeorao Bhopale Hindustan Antibiotics Ltd, Pune	: Development of toxoplasma detection kits for antibodies in toxoplasmosis diseases.
1996	Dr. N. Kochupillai All India Institute of Medical Sciences, New Delhi	: Development of Radio-immunoassay (RIA) for eradication of nutritional iodine deficiency.
1997	Dr. Vijay K. Chaudhry Delhi University.	
1998	1 Dr. Rabindranath Mukhopadhyaya Cell & Development Pathology Division 2 Dr. (Mrs.) Surekha M. Zingde Cancer Research Institute, Mumbai	: Characterisation of HIV isolates and developments of Western Bolt for sero detection of HIV infection. Checkmite Solunem based on natural products and antidotes for snake bites from chicken egg yolk.
1999	Dr. P. V. Subba Rao U B Group	For development of biotechnologies such as Hydroxycitrisol
2000	Dr. Girish Sahni CSI, New Delhi	: For development of Streptokinase for treatment of myocardial infarction
2001	Dr. Sudhanshu Vrat National Institute of Immunology, New Delhi	: For contribution in treatment of Japanese Encephalitis, major epidemic form of brain infection of children.
2002	Dr. (Mrs.) Kiran Katoch Central JALMA Institute for Leprosy, AGRA	: For development of vaccine for immunotherapy and immunoprophylaxis of leprosy.
2003	Dr. S. P. S. Khanuja CIMAP, Lucknow	: For development of elite chemotypes of medicinal plants, high value crops for agriculture and molecular markers for engineering genotypes of plants.
2004	Dr. Balram Bhargava AIIMS, New Delhi	: For development of coronary stent using platinum-iridium alloy for angioplasty.
2005	Dr. Samir K. Brahmachari CSIR, New Delhi	: For development of structural flexibility of DNA, molecular analysis of genetic disorders and predictive markers of complex disorders.
2006	Dr. A. Ahmed National Chemical Laboratory, Pune	: For development of the technique for the synthesis of nano-materials mimicking biological systems & processes.
2007	Dr. Navin C. Khanna Sr. Scientist & Group Leader, ICGB, New Delhi	: For development of Hepatitis B Vaccine & diagnostic kits.
2008	No Award	
2009	Prof. Kasturi Datta, Distinguished Biotechnology Prof. DBT, School of Environmental Sciences, New Delhi	: She has contributed in the advancement of identifying a human novel gene hahpl and its biological function in cellular signaling.



YEAR	NAME	SUBJECT OF RESEARCH
2010	Prof. Arvind M. Lali Prof. of Chemical Engg. & Head, DBT-ICT Centre for Energy Biosciences, ICT, Mumbai	: He has contributed extensively in the area of bioprocessing and enzyme catalysis especially developing novel technology solutions for the modern day biotech and biopharma industry in India and abroad. Has developed a novel basic technology platform for India's first major cellulosic Bio ethanol pilot plant.
2011	Dr. Anirban Basu, Associate Professor, National Brain Research Center, Haryana	: He has discovered that activated microglia aggravate brain damage suppressors of central neurons system inflammation have a beneficial effect in a mouse model of JE.
2012	Dr. Nihar Ranjan Jana Professor, National Brain Research Centre, Manesar, Gurgaon	: For his pioneering work in identifying two Ubiquitin Ligases (CHIP and Ube 3a) as important molecules that can enhance the clearance of mutant proteins in polyglutamine neurodegenerative disorders like Huntington's Disease (HD).
2013	Dr. Rohit Srivastava Associate Professor, Department of Biosciences and Bioengineering, IIT Bombay, Mumbai	For development of a portable urine analysis system – uChek – a low cost smartphone based urine dipstick reader.
2014	Prof. Pradeep Ratilal Vavia Professor of Pharmaceutics Dept of Pharmaceutical Sciences and Technology Institute of Chemical Technology, Mumbai	For developing the Novel Drug Delivery Systems, Synthesis and application of novel polymers and excipients and targeted drug delivery in cancer treatment.
2015	Dr KSMS Raghavarao Chief Scientist, Department of Food Engineering, CSIR-CFTRI, Mysore	Application of principles of Chemical Engineering for process and product/ equipment development in the area of food engineering and biotechnology.
2016	No Award	
2017	Dr. Shyam Sundar Professor of Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi	For his pioneering work on rapid rK39 strip test which has resulted in breakthrough in the treatment of Kala-azar. There is a global application of this tool for the diagnosis of kala-azar.
2018	Dr. Pankaj Seth Scientist VI and Professor, National Brain Research Centre, Manesar, Gurgaon	For development of human neural stemcell model system, which has advanced our knowledge in the area of healthy and diseased brain functions.
2019	Dr P. Sharat Chandra professor & Head, Neurosurgery AIIMs, New Delhi	For his contribution to the development of Epilepsy and spine surgery-- bloodless surgery to make a very complex procedure Chemispherotomy very safe, effective and highly minimally invasive.
2020	Dr Debojyoti Chakraborty Senior Scientist CSIR-Institute of Genomics & Integrative Biology, New Delhi	For his successful demonstration of reprogramming patient-derived Peripheral Blood Mononuclear Cells (PBMCs) into Induced Pluripotent Cells (iPSCs).
	Dr Souvik Maiti Principal Scientist CSIR-Institute of Genomics & Integrative Biology, New Delhi	For his contribution to our current understanding of drug development and Toxicity. He has designed, developed and applied small molecules, nanoparticles and molecular tools for chemically modulating gene expression by targeting nucleic acid structures.
2021	Dr Diwan S Rawat Professor University of Delhi, New Delhi	For his contribution in synthesis of small organic molecules as potential anticancer, anti-parkinsonian and antituberculosis drugs using molecular hybridisation technique.



## AWARD WINNERS FOR CHEMICAL SCIENCES & TECHNOLOGY

YEAR		NAME	SUBJECT OF RESEARCH
1976		No Award	
1977		No Award	
1978		Dr. N. V. Bringi Hindustan Lever Research Centre, Bombay	: Upgrading and utilization of minor oils such as Kusum, Karanja Neem, rice bran oil, castor oil for manufacture of soap.
1979	1	Dr. K. S. G. Doss Central Electrochemical Research Institute, Karaikudi	: Discovery of Faradic rectification Radio frequency polarography used to determine traces of metals & unique method of determining rates of fastest electrode reaction.
	2	Dr. Sukh Dev Malti-Chem Research Centre, Nandesari	: Carene Molecule, production of menthol from carene, transformation of carene into transchrysanthemic acid.
1980		Dr. L. K. Doraiswamy National Chemical Laboratory, Pune	: Chemical reactions engineering & chemical engineering thermodynamics leading to development of indigenous technology & production of chemicals and pharmaceuticals.
1981	1	Prof. A. R. Vasudev Murthy	: Synthetic quartz, ferromagnetic garnets and silicon leading to production of silicon based materials such as silicon tetrachloride and ethyl silicate and electronic grade silicon.
	2	Prof. G. Suryan Indian Institution of Science, Bangalore	
1982		Dr. Paul Ratnasamy Inorganic Chemical Division National Chemical Laboratory, Pune	: Heterogeneous Catalysis-Elucidation of surface Inorganic structure of Cobalt-Molybdenum catalyst for Petroleum Refining Iron and Lanthanum Silicate Zeolites.
1983		Shri M. R. Kurup SHAR Centre, AP	: Development of propellants and propellant systems for rockets for launching of space satellites.
1984		Dr. A. V. Rama Rao National Chemical Laboratory, Pune	: Organic Chemical Synthesis of biologically active drugs, pharmaceuticals, antibiotics, vitamins, industrial chemicals and intermediates.
1985		Dr. Gopalakrishna Thyagarajan Central Leather Institute Adyar, Madras	: Development for processes for new types of pesticides used in agriculture and for tranquilizer drugs.
1986	1	Prof. Rajinder Kumar Chemical Engineering, Indian Institute of Science, Bangalore	: Development of new technologies for production of Copper Sulphate, Manganese Sulphate and activated Carbon. Design of energy efficient domestic stoves with agricultural waste as fuel.
	2	Dr. G. R. Venkitakrishnan Dy. Director & Head Process Development Div. National Chemical Laboratory, Pune	: Development of process technologies for industrial organic chemicals.
1987	1	Dr. S. Sivaram	: Development of active Copper Catalysts for hydration of under acrylonitrile to acrylamine neutral conditions a useful organic monomer.
	2	Dr. M. Ravindranathan Research Centre Indian Petrochemicals Corp. Ltd., Vadodara	
1988	1	Dr. U. T. Bhalerao	: Development of Process Technology of pesticides-Chlorpyrifos Monocrotophos, DDVP Butachlor (Herbicide)
	2	Dr. A. A. Khan	
	3	Shri R. N. Parlikar, IICT, Hyderabad	
1989		Dr. Raghunath Vitthal Chaudhari	: For his outstanding contributions in the area of Chemical Reaction Engineering and Industrial Homogeneous Catalysis.
1990		No Award	
1991		Shri Subramanian Sivasanker	: For developing catalysis and processes for the dewaxing of Petroleum fractions in the diesel and lube oil ranges.

YEAR	NAME	SUBJECT OF RESEARCH
1992	Prof. Joshi Jyeshtharaj Bhalchandra Dept. of Chemical Technology, Matunga, Bombay	: Developed reliable, rational and unified design procedure for mechanically agitated and sparked multiphase reactors.
1993	Dr. Vasant Ramchandra Choudhary Scientist-F, Chemical Engineering Division, National Chemical Laboratory, Pune	: He has made several original contributions, with many firsts to his credit, in frontier areas of great scientific and technological importance. His very recent work on the complying of exothermic and a endothermic process (by carrying out them simultaneously) in the conversion of natural gas to ethylene and syngas has eliminated most of the serious limitations of the oxidative natural gas conversion processes, thus increasing greatly their techno feasibility.
1994	Dr. M. K. Gurjar IICT, Hyderabad	: Contribution towards the synthesis of drugs and development of novel method for drug manufacturing.
1995	Dr G. D. Yadav UDCT, Mumbai	: Contribution to phase transfer catalysis, flow through porous media and enhance oil recovery.
1996	Dr. A. B. Pandit UDCT, Mumbai	: Development of multiphase reactor and bubble dynamics in large-scale fermenter
1997	Dr. T. Ramasami Central Leather Research Institute, Chennai	: Development of chromium aluminium synthetic tanning agent, Alkrotan.
1998	Maheshkumar Ramniklal Gandhi Central Salt & Marine Research Institute, Bhavnagar	: Development of detergent grade Zeolite
1999	Dr. J. S. Yadav IICT, Hyderabad	: For his contributions in development of drugs and their intermediates and agrochemicals.
2000	Dr. G. N. Qazi Director, RRL, Jammu	: For development of environmentally sound fermentation process for production of D-gluconates
2001	No Award	
2002	Dr. R. A. Joshi Division of Organic Chemistry, National Chemical Laboratory, Pune	: For pioneering contributions in drugs & pharmaceuticals & has developed chiral drugs such as S-amlodipine besylate, Vitamin B6, cetirizine hydrochloride, nevirapine, atorvastatin and pioglitazone.
2003	Shri Prashant Purushottam Barve Scientist E-II, National Chemical Laboratory, Pune	: For development of Arylamido Tert Butyl Sulfonicacid (ATBS) specialty polymers used in acrylic fibers, enhanced oil recovery and water treatment.
2004	Dr. K. R. Krishnamurthy R&D, IPCL, Baroda	: For development of catalysts and catalytic processes in petrochemical and petroleum refining industries.
2005	Dr. A. B. Halgeri IPCL, Baroda	: For development of new generation super selective zeolite based catalyst for manufacture of Para diethyl benzene (P D E B) by adsorptive separation process.
2006	Dr. R. V. Jasra, Senior Vice President Reliance Industries Ltd., Vadodara	: For development of catalyst-based synthesis routes for chemicals such as Styrene Epoxide, 2 ethyl - Hexanol & Food Grade Hexane which have been commercialised.
2007	Dr. V. K. Gupta, Head & Vice President Reliance Industries Ltd. Hazira Mfg. Division, Surat	: For contribution in the development of RELCAT and RELD series of catalyst which are used in the manufacture of a polypropylene of different grades efficiently & cost effectively.

YEAR	NAME	SUBJECT OF RESEARCH
2008	Dr. A. J. Varma Dy. Director (Scientist 'G') NCL, Pune	: For contribution in the development of high-pressure steam-based process for the conversion of waste agricultural product such as sugarcane bagasse into high value constituent polymers such as cellulose, hemicellulose & lignin.
2009	1. Shri Sandip Kumar Ghosh Director, Chemical Engg. Group, BARC, Mumbai  2. Dr. N. P. H. Padmanabhan MGM Chair Professor, School of Minerals Indian Institute of Technology, Bhubaneswar	: He has significant contribution in the process development and recovery of nuclear materials of interest to DAE from ores, intermediates and waste streams. : He has made a Group to develop a techno-economically viable process flow-sheet to extract Uranium from the ores of Tummalapalle, Andhra Pradesh and the process has been translated into a 3000 tpd operating industrial plant.
2010	Dr. Pushpito Kumar Ghosh Director, CSMCRI, Bhavnagar	: His accomplishments cover a wide range of marine derived products and biofuels. These include, water desalination technologies. Innovations related to common salt production, low sodium salt, recovery of potash, production of carrageenan, biodiesel from Jatropha etc.
2011	1. Prof. Ashok Kumar Shukla, Indian Institute of Science, Bangalore  2. Dr. Darbha Srinivas Chief Scientist & Professor AcSIR National Chemical Laboratory, Pune	: He has developed several of electrochemical energy storage systems which have been patented and some of them have been commercialized by companies in India. : His research on solid catalyzed transesterification of fatty acid triglycerides to biodiesel has been licensed to a US Company which has built a pilot installation which is working satisfactorily.
2012	1. Dr. R. B. N. Prasad Chief Scientist & Head, IICT, Hyderabad 2. Prof. B. N. Thorat Dept. of Chemical Engg. ICT, Mumbai	: For developing a novel enzymatic degumming process for rice bran oil production. : For developing 'Solar Conduction Dryer' technology having significant potential in post harvest preservation of food products.
2013	1. Dr. Ulhas Kharul Sr. Principal Scientist, CSIR - NCL, Pune  2. Dr A. V. R. Reddy Senior Principal Scientist, CSIR- CSMCRI, Bhavnagar	: For developing technologies for manufacturing ultra-filtration membranes for drinking water purification. : For developing the thin film composite R. O. membrane for desalination and hollow fibre membrane technology for drinking water purification.
2014	1. Dr. V. V. Ranade Dy. Director, NCL, Pune  2. Dr. R. Natarajan Director, Reprocessing Group, IGCAR, Kalpakkam	: For the development of CFD Simulation for design of chemical equipments which has been widely accepted by diverse range of chemical industry. : For developing process and equipments for processing and reprocessing of nuclear reactor fuel.
2015	Dr A K Das Head (Refinery R&D and Process Dev), Reliance Industries Ltd., Jamnagar Refinery, Jamnagar	Development of several processes, namely Indane maximization – INDMAX, Needle coke, etc. from concept to commercialization for conversion of residues to LPG and light olefins. Setting up facilities for refinery process research and FCC laboratory; development of FCC kinetic model and marketing of refining technologies.
2016	Dr A.A. Kulkarni Scientist, CSIR-National Chemical Laboratory, Pune	Evolution of engineering designs for several multi-phase reactors, including micro-reactors and flow reactors.
2016	Dr R.S. Somani Inorganic Materials & Catalysis Division, CSIR-CSMCRI, Bhavnagar	Development of technology for the manufacture of Zeolite-A (detergent builder) from sodium aluminium liquor and from low grade Kutch Bauxite.
2017	Dr. Madhukar O.Garg President, Refining and Petrochemicals R&D, Reliance Research and Development Center, Mumbai	For significant contributions in the area of petroleum refining and petrochemicals through commercialization of twenty-five technologies as regards solvent extraction and thirteen technologies in refining and petrochemicals.
2018	Dr. Srivari Chandrasekhar Director, Indian Institute of Chemical Technology, Hyderabad	For contributions to the total synthesis of scarce marine natural products and organ catalysts which are globally recognized. Fourteen processes developed for semi-synthetic drugs and pharmaceuticals have been commercialized.

<b>YEAR</b>	<b>NAME</b>	<b>SUBJECT OF RESEARCH</b>
2019	Dr N V Choudary Scientist Emeritus HPCL, Bengaluru	For development of over 40 products & processes, which include adsorbents and adsorption processes, catalyst and catalytic processes, processes chemicals for petroleum refining.
	Dr S.V Joshi Head, Dept of Pharmaceutical Sciences & Technology ICT, Mumbai	For introducing cost-effective technologies for many generic APIs on commercial scale, leading to the availability of generic APIs to Indian population at affordable prices.
2020	Dr Parmod S. Kumbhar President & Chief Technology Officer Praj Industries Ltd, Pune	For his development of unique furfural technology, first for an Indian company, from C5 sugars derived from Biomass, which is licensed to BASF, an European Chemical Giant.
2021	Prof T.Pradeep Professor of Chemistry IITM, Chennai	For his significant contribution to the discovery of advanced materials and phenomena to remove contaminants, especially pesticides and arsenic, from water. He is a pioneer in nano-technology for drinking water purification.
	Dr P Thanikaivelan Senior Principal Scientist CSIR-Central Leather Research Institute Chennai	For his ground breaking contribution to the understanding of leather making processes from first principles in rendering them environmentally more sustainable and economically viable.





## AWARD WINNERS FOR ELECTRICAL & ELECTRONIC SCIENCES & TECHNOLOGY

**YEAR NAME**

**SUBJECT OF RESEARCH**

**Original Category**

1976 to 82 No Award

1983 & 84	Shri S. N. Seshadri Head, Reactor Control Division BARC, Mumbai	: Design, fabrication and installation of control system of fast critical facility - Radio telescopes and Servomechanism control engineering.
1986	Dr. M. Ramamoorthy Central Power Research Institute, Bangalore	: Development of solid state Relays, high voltage switchgear, high frequency Inverter of 200 KW for induction melting.
1987	Prof. V. V. Sastry Dept. of Electrical Engineering Indian Institute of Technology, Madras	: Phase shift modification for speed change of Induction machines. Design optimization of electrical machines using CAD. Developing smart motor controller for energy saving.
1988	Shri Mukesh Bandari Managing Director Electrotherm Machines (I) P. Ltd., Vatva, Ahmedabad	: Development of medium frequency solid-state generators up to 500 KW for applications in melting, heating and hardening and firing circuits for electronic drilling rigs.
1989	Dr. Hari Ram Sharma Member (Hydro) Central Electricity Authority, Delhi	: For the extensive work in the field of Hydro Power on subjects like design of power intake in run-of-the river Hydro Electric Schemes, Operation Schedule for the Yamuna Hydro Scheme, criteria for elimination of surge tanks at Hydro Power Plants fed by long pressure conduits, tidal power technology in the country.
1990	Dr. S. C. Gupta Vikram Sarabhai Space Centre, Thiruvananthapuram	: For his work, which has resulted in self-reliance in all aspects of control, navigation and guidance of rockets and satellite launch vehicles and of major components of the attitude control system of satellites.
1991	Dr. S. C. Kapoor	: For the following development activities: 1. Development of 800 Kv Equipment Specification 2. GIS Specification & Engineering aspects. 3. Back-to-back HVDC Valve Module Testing facility 4. Synthetic test facility for SVC's Valves 5. Automation for Sub-stations
1992	Dr. P. S. Goel Controls & Mission Area, I.S.A.C., Bangalore	: He developed close control for spinning satellites for the first time in the world. He developed the challenging 3-axis stabilization technology for first time for APPLE Satellite, a major breakthrough for ISRO.
1993	Dr. A. R. Kalyanaraman Senior Deputy Director The South India Textile Research Association, Coimbatore	: He has designed ancillaries, which are energy savers when used in textile machines. Already about 5 lakhs energy saving spindles are in use in the industry. The SITRALISED ENERGY SAVING TAPE designed by him ensures a saving in energy even with respect to Synthetic Laminated tapes.
1994	1 Prof. V. T. Ranganathan 2 Prof. V. Ramanarayanan Indian Institute of Sciences, Bangalore	: Development of power electronic products.

YEAR	NAME	SUBJECT OF RESEARCH
1995	Shri G. B. Meemamsi Member Steering Committee, Centre for Development of Telematics (C-DOT), New Delhi	: Development of electronic switching systems.
1996	Shri Sudhir Ganesh Bhat Managing Director, Dura Magnets (P) Ltd, Satara	: Development of Alnico Magnet.
1997	No Award	
1998	Shri G. P. Shrivastava Head Control Instrumentation Division, Bhabha Atomic Research Centre, Mumbai	: Development of instrumented pipeline inspection gauge for measurement of pipe thickness of oil pipelines.
1999	Prof. R Arockiasamy IIT, Delhi	: For development of pollution free electric and hybrid electric vehicles for city transportation.
2000	No Award	

**Note: Since 2001, this category has been merged with Electronic Sciences & Technology to form a new category called Electrical & Electronic Sciences & Technology**

**Original Category**

1976	1 Shri R. V. Sitaram Head, Microwave Engineering Division 2 Shri K. V. Ramanathan Head, Solid Electronics Division Tata Institute of Fundamental Research, Bombay	: Development of Microwave Technology & Solid State Technology devices and equipment.
1977	1 Dr. J. Das 2 Dr. M. N. Faruqui 3 Dr. P. K. Chatterjee 4 Dr. C. V. Chakravarty 5 Shri T. S. Lamba 6 Dr. S. Rakshit Indian Institute of Technology, Kharagpur	: Development of Digital Communication Systems and Speech processing.
1978	1 Dr. V. Narayan Rao 2 Shri C.R. Chakravarty 3 Dr. M.S.V. Gopal Rao Defence Electronics Research La., Hyderabad	: Sonar, underwater sound propagation and Electronic and naval weapon system and Digital Electronics and application to communications and radar system.
1979	1 Shri T. V. Ramamurti 2 Shri N. Radhakrishna Nair Central Electronics Ltd., Sahibabad	: Development and Production of high permeability ferrites used in telecommunications and television industry.
1980	Prof. U. R. Rao Director I.S.A.C., Bangalore	: Design, fabrication and launching of Aryabhata and Apple Satellites.
1981	1 Dr. B. D. Pradhan 2 Dr. S. R. Borkar 3 Shri N. A. Gandhi 4 Shri S. A. Mhatre Tata Electronics Companies, Bombay	: Development and production of advance defence electronic equipment in the field of radar systems.
1982	1 Dr. Srinivasan NPOL, (DR&D) Cochin 2 (Dr.) A. Paulraj Indian Institute of Technology, Madras	: Oceanographic Instrumentation Underwater detection techniques and sonar systems.
1983	1 Dr. R. P. Shenoy 2 V. Subramaniam	: Military radar and communication systems such as Mortar Locating Radar, VHF/UHF Direction finding

YEAR	NAME	SUBJECT OF RESEARCH
	3 Shri Y. Pichi Reddy 4 Shri R. L. Verma Electronics & Radar Development Establishment High Grounds, Bangalore	equipment, Automatic Electronic Switch.
1984	Prof. A. B. Bhattacharya IIT, New Delhi	: Solid-state devices LSI/VLSI Technology. Production of indigenous components.
1985	1 Prof. P. V. S. Rao 2 Group Captain A. B. Mehta 3 Wing Cdr. J. R. Bankapur 4 Mr. Sugata Sanyal 5 Mr. Aniruddha Sen 6 Wing Cdr. T. V. Venkataraman Tata Institute of Fundamental Research, Bombay	: Design, development and production of an Automatic Data Handling System (ADHS) for strategic air defence of India.
1986	Shri K. P. P. Nambiar Dept. of Electronics, New Delhi	: Establishment of Industrial Electronic R&D Center in India, establishment of a chain of Industrial complexes in Kerala; establishing leadership in development of Electronics Industry in India.
1987	Shri S. Rajendran Director LRDE, DRDO, Bangalore	: Development of high performance Doppler Surveillance Radar.
1988	Dr. M. S. Narasimhan I.I.T., Madras	: Developing Design Methodology of large reflector antennas and high performance feed systems. Design analysis of tropo-antennas of INDO-USSR tropolink RCPO tropo-antennas and of EMI between DF antennas and radar reflector in a war vessel.
1989	Dr. V. Prasad Kodali Dept. of Electronics, New Delhi	: For his contribution in the development of tracking radars as Project Leader for Microwave Transmit Receiver Chains. These radars are still being used as vital ground support facility for the Nation's space program.
1990	1 Dr. Vasudev K. Aatre 2 Dr. G. Devarajan 3 Shri S. Kedarnath Shenoy	: For the design & development of Airborne Sonic Processor System & Modular Fibre Optic Data Bus, NPOL, Cochin.
1991	Smt. Lakshmi G. Menon OCS, Mumbai	: As Engineer-in-Charge R&D, Overseas Communication Service, responsible for installation /tests/co-ordination with supplier of computer Controlled Telex/Telegraph Systems and for specifying new systems.
1992	Smt. D. Lakshmi BEL, Bangalore	: The Versatile Console Systems was designed, developed, manufactured and installed on the INS VIKRANT, INS GODAVARI, INS GANGA, and INS GOMATI. Extensive sea trials were conducted on each of the above warships to commission and prove the system developed from indigenous and technological efforts for operations use.
1993	Dr. Vijay P. Bhatkar Executive Director, Center for Development of Advanced Computing, Pune	: Delivered the PARAM 8000 system on par in technology and performance with the developments in Europe. 26 installations of PARAM, 4 of which are outside India.
1994	1 Prof. Bharathi Bhat 2 Prof. Shiban K. Koul IIT, New Delhi	: Development of Ka-band Wave component and Ferrite phase shifter for defence organisations.

YEAR		NAME	SUBJECT OF RESEARCH
1995		Prof. M. V. Pitke Tata Institute of Fundamental Research, Mumbai	: Development of Technology for Digital Switching System.
1996		Prof. L. M. Patnaik Professor, Microprocessor's Application Indian Institute of Science, Bangalore	: Pioneering contribution to computer science and engineering.
1997	1 2 3	Shri P. S. Veeraraghavan Shri John P. Zachariah Dr. R. Vikraman Nair Vikram Sarabhai Space Centre, Tiruvananthapuram	: Development of Automatic Launch Processing System (ALPS) for the PSLV mission of ISRO.
1998		Shri A. S. Kiran Kumar Space Application Centre, Ahmedabad	: Development of electro optical imaging instruments for meteorological and remote sensing applications.
1999	1 2 3	Prof. B. B. Bhattacharya Prof. M. K. Kundu Prof. C. A. Murthy, ISI, Kolkata	: For development of new techniques for processing digital images.
2000		Dr. Bhaskar Ramamurthi IIT, Chennai	: For contribution to image coding, modem algorithms, wireless local loop system and direct internet access system.

**Note:** Since 2001, this category has been merged with Electrical Sciences & Technology to form a new category called **Electrical & Electronic Sciences & Technology**

**New Category**

2001	1	Dr. K. N. Shankara Director, Space Applications Centre, Indian Space Research Organisation, Ahmedabad	: For pioneering role in design and development of variety of transponders for INSAT Communication Satellite Program.
	2	Dr. E. Bhagirath Rao Institute of Armament Technology, Pune	: For development of S-Band Troposcatter equipment for Indian Air Force.
2002	1	Mr. S. Rangarajani Sterling Group & Pentamedia Graphic Ltd., Chennai	: For development of Electronic Voting Machine (EVM) BEL model.
	2	Dr. Krishna Rao Venkatesh Spectrum Infotech, Bangalore	
	3	Mr. A. Rudhiramoorthy Bharat Electronics Ltd., Bangalore	
	1	Mr. J. B. Venkataratnam Electronic Manufacturing Services Div., Hyderabad	: For development of Electronic Voting Machine (EVM) ECIL model.
	2	Mr. Gadde Raja Koteswara Rao FOSAPP/ISD/ECIL, Cherlapally, Hyderabad	
2003	1	Dr.M.D. Raj Narayan DERL (DRDO), Hyderabad	: For development of radar and electronic warfare technologies.
	2	Dr. R. R. Navalgund Space Applications Centre, ISRO, Ahmedabad	: For development of remote sensing application programmes for Space Applications, integrated mission for Sustainable Development and disaster management support programme.
2004	1	Shri V. Chander Naval Physical & Oceanographic Laboratory, Cochin	: For development of sonar system for ships, submarines and helicopters.
	2	Shri B.K.Sinha SAMEER, Mumbai	: For development of microwave, antenna, linear accelerator, integrated optics and atmospheric probing instruments.
2005	1	Prof. M. Balakrishnan Prof. P. V. Madhusudhan Rao	: For development of smart cane for visually challenged persons. It consists of ultrasonic ranger,

YEAR	NAME	SUBJECT OF RESEARCH
2	Prof. Kolin Paul of IIT, New Delhi & Shri Dipendra Manocha National Assn for the Blind, New Delhi Dr.K.Radhakrishnan Director, NRSA (ISRO), Hyderabad	vibrator and microcontroller having a range of 3 meters. : For development of data acquisition system for remote sensing satellites, environment security and disaster management systems.
2006	Shri Vinay L. Deshpande Encore Software Ltd., Bengaluru	: For development of hardware solutions such as Pcs, notebooks, handheld devices and compatible software products such as machine compilers, software for modems & mobile phones.
2007	No Award	
2008	Dr. Kumar N. Shivarajan Chief Technology Officer Tejas Networks India Ltd., Bengaluru	: For contribution in the area of communications and data transmission and sharing the same through high speed optical network.
2009	Dr. A. N. Rajagopalan Professor, Department of Electrical Engineering IIT Madras, Chennai	: He has devised novel methods to extract 3D shapes using the degree of blur in an image as a cue for depth estimation and continues to define and revolutionize this exciting area.
2010	Dr. Abhay Karandikar Prof. & Head, Dept. of Electrical Engineering Indian Institute of Technology, Mumbai	: He has made pioneering contributions towards the development of technology for telecom and broadband Internet access with a specific focus on Indian service providers. He has evolved an Innovative architecture that leverages the potential of Ethernet for providing Quality of Service (QoS) based triple play services.
2011	Shri Narasimhan Venkatesh Vice Chair., Communications and Signal Processing Societies join Chapter, IEEE, Hyderabad	: He has made significant and innovative contributions to the IEEE, 802.11 series of standards for WLAN methodologies and protocols (specifically 11b/a/g, 11a and 11ac). He was instrumental in incorporating these innovations into WLAN chipsets.
2012	Prof. Rudra Pratap Professor and Chairperson, Centre for Nano Science and Engg. IISc., Bangalore	: For the development of MEMS based electrostatic acoustic transducer, FET sensor for sensing pressure/force and inertial displacements and CAPFET sensor for sensing analytic.
2013	Prof. Shabbir N. Merchant Professor, Department of Electrical Engineering, IITB, Mumbai	: For developing solutions of signal and image processing problems faced by Indian defence and 'A channel estimation based approach to Backoff adjustment method for MAC System'.
2014	Dr. C. S. Rao President of Reliance Communications Ltd. Bangalore	: For his contributions in development of several First time designs of network for Indian Army, Indian Navy, VSNL and Design of the Advanced Radio Network Controller SW suite for 3G/UMTS.
2015	Prof. G. Venkatesh ADI Chair Professor, Dept of EE, IIT Madras, Chennai	Contribution to the field of wireless and broadband embedded communications from India.
2016	Shri Rakesh Goel Managing Director & CEO, S.K. Dynamics Pvt. Ltd., Roorkee	For designs of power-electric systems in India, which include Motors and Motor Controls, Electromechanical Engineering, Digital Signal Processing & Processors, Embedded Software, Power Electronics, FPGA, Analog and Digital Electronics, System Engineering, Prototype Manufacturing Capability & Product Engineering.
2017	Prof. V Kamakoti Professor - Department of Computer Science and Engineering, Indian Institute of Technology Madras, Chennai	For development of Shakti Series of Processors - a culmination of various processor research projects. For efforts in developing computational hardware which helps build capabilities to secure and control data movement and transportation at the interfaces of computing machines.
2018	Prof. Kiran Kuchi Professor, Electrical Engineering, IIT Hyderabad	For invention of India's first 5G standards essential patents and significant contribution to SEPs on low PAPR waveform "pi/2 BPSK with spectrum shaping" in 5G NR, NB-IoT TDD in 3GPP and study item on massive MIMO cloud RAN based on non-linear precoding.



YEAR	NAME	SUBJECT OF RESEARCH
2019	Prof Shanthi Pavan Professor, Department of Electrical Engineering IITM, Chennai	For his fundamental contribution in the areas of analog and mixed signal VLSI design through new designs and design techniques. His contribution to integrated filters and data convertors have been used in multiple industrial products worldwide.
2020	Dr Yogesh Singh Chauhan Professor IIT Kanpur	For developing World's first Industry Standard Model for Gan HEMT Model - ASH-Gan-HEMT and pioneering work for development of compact models for futuristic devices, including GAA, NCFET, III-IV and TMD transistors.
	Dr Prabhjot Kaur, Co-founder & CEO Esmito Solutions Pvt Ltd	For his contribution to design, development and setting up the innovative EV charging solutions and battery swapping platform as also development of Solar DC technologies & Electric vehicles.
2021	Dr Mayank Shrivastava Faculty Member IISc, Bengaluru	For his pioneering contribution in the field of applications of emerging materials like Gallium Nitride (GaN), atomically thin two-dimensional materials like Graphene and TMDCs, in electronic and electrooptic devices.
	Dr Kannan Lakshminarayan Professor, Dept. of Engineering Design IITM, Chennai	For successfully designing and developing high Efficiency Traction Motors for electrical vehicles and its gainful commercialisation.



## AWARD WINNERS FOR ENVIORNMENTAL SCIENCES & TECHNOLOGY

YEAR	NAME	SUBJECT OF RESEARCH
1999	Prof. A. K. Sharma Calcutta University, Kolkata	: For contribution to cell and chromosome research
2000	Dr. A. P. Mitra NPL, New Delhi	: For contribution in the field of upper atmospheric and ionospheric research.
2001	Dr. V. P. Sharma Formerly Addl. DG, ICMR & Director, Malaria Research Centre, New Delhi	: For pioneering work on entomology, genetic control of mosquitoes and bio-environmental malaria control.
2002	Prof. R. Gadagkar Centre for Ecological Sciences, IIS, Bangalore	: For contribution to structural evolution of insect societies leading to better understanding of social life in animals.
2003	Prof. H.Y. Mohan Ram INSA Honorary Scientist (2006) (Formerly Prof. of Botany, University of Delhi)	: For development of tissue culture of bamboos, bananas and legumes.
2004	Dr. Thirumalachari Ramasami DG CSIR/ Secretary DST	: For development of pollution control system in leather industry.
2005	Prof. C. R. Babu, Professor Emeritus, CEMDE, School of Environmental Studies, New Delhi	: For contribution to conservation of biodiversity, ecosystem, management and environmental microbiology.
2006	Shri Paritosh C. Tyagi Former Chairman CPCB, New Delhi	: For development of the sustainable framework and its implementation through a variety of State and Central Government agencies and NGOs.
2007	Dr. Tapan Chakrabarti Acting Director, NEERI, Nagpur	: For contribution in the area of Environmental Biotechnology & their application for the remediation of toxic wastewater and hazardous sludge treatment.
2008	Dr. S. K. Dube Professor, Centre for Atmospheric Sciences, New Delhi	: For contribution towards development of various mathematical models accounting for the atmospheric mathematical & metrological phenomena in the prediction of tropical storms & their effects.
2009	Dr. Ashok K. Singhvi Outstanding Scientist & J. C. Bose National Fellow, Physical Research Lab, Ahmedabad.	: He has made outstanding contribution to Environmental Science & Technology, particularly in the area of geosciences.
2010	Prof. C. K. Varshney Professor Emeritus (JNU), New Delhi	: For his research in the fields of natural wetlands and state of rivers and surface water bodies in India, biodiversity and environmental impact assessment and so on.
2011	Dr. Rakesh Kumar Scientist & Head Mumbai Zonal Center National Environmental Engg. Research Institute, Mumbai	: For contribution related to environmental science and technology, air and water pollution and solid waste management.
2012	Dr. B. N. Goswami Director, IITM, Pune	: For the development and installation of State of the art Climate Prediction System and short and medium range weather prediction system.
2013	Dr. S. R. Wate Director, NEERI, Nagpur	: For the development of technology and construction and operation of on-site waste treatment for re-drill site waste management to control oil pollution.
2014	Prof. Virendra Sethi Professor, CESE, IITB, Mumbai	: For the development of simple and low cost gasification clean up system for hot producer gas from thermo-chemical gasification of biomass.
2015	Prof. Deepak Kantawala Independent Consultant, Mumbai	contribution in the area of environment protection in general and wastewater treatment.
2016	Prof. Vinod Tara Department of Civil Engineering, I 16 Western Laboratory, IIT Kanpur	contribution in the area of Processes for Natural Resource Conservation and Regeneration, Physiochemical, Biological and Ecological Processes, Water and Wastewater Treatment and Modelling and Simulation of Environmental Systems, EIA & EA.
2017	Dr. S Venkata Mohan Principal Scientist Bioengineering and Environmental Sciences Lab, CEEFF, CSIR-Indian Institute of Chemical Technology (CSIR/IIT), Hyderabad	For his significant contributions in the domain of environmental engineering specifically in the interface of biotechnology and bioenergy. His interdisciplinary research approach has established a comprehensive and systematic link between waste remediation and renewable energy generation .
2018	Dr. P Chandramohan Former Scientist, CSIRNIO, Goa Managing Director, INDOMER, Chennai	For developing a very strong and vital database for the entire India Coast on coastal environment parameters on waves, currents, tides and sediment characteristics.

YEAR	NAME	SUBJECT OF RESEARCH
2019	Dr Mukesh Sharma Professor, Dept of Civil Engineering IIT, Kanpur	For his pioneering research in Air Quality Monitoring through Air Quality Index, Management & Control, which has served the Nation and Humanity in terms of better Air Quality & Public Health.
2020	Dr Makarand Ghangrekar Professor, Dept. of Civil Engineering IIT, Kharagpur	For his contribution to the development of 'Bioelectric Toilet', which offers effective onsite treatment of the waste, generated from toilet and simultaneously produce electricity for illuminating toilet and premises at night and treated water reused back to maintain cleanliness.
	Dr Nitin Kumar Labhasetwar Chief Scientist & Head CSIR-NEERI, Nagpur	For his contribution to the Fundamental Science of Environmental Catalysis, Photocatalysis and Nano-materials and development of 'Green Dispo', an energy efficient improved sanitary pad incinerator.
2021	Dr K.P Nyati Environment Professional New Delhi	For his contribution to the establishment of industrial pollution prevention and control services at NPC and thus to the goal of sustainable development. Also for his contribution to the work of UN-IPCC-- a joint winner of the Nobel Peace Prize, 2007.



## AWARD WINNERS FOR INFORMATION & COMMUNICATION TECHNOLOGY

YEAR	NAME	SUBJECT OF RESEARCH
1999	Shri. F. C. Kohli TCS	: For participating in information revolution and software development. He has been pioneer in emerging technologies such as speech and handwriting recognition systems.
2000	Dr. P. P. Gupta CMC	: For significant and distinguished contributions to the growth of Information Technology in India
2001	Dr. N. Vijayaditya National Informatics Centre, New Delhi	: For contribution in Computer data base management system NICNET.
2002	Dr. Om Vikas M/o Communications & Information Technology, New Delhi	: For contribution to Indian language processing, translation support and human machine interface systems.
2003	Dr. R. Narasimhan Former Professor of Eminence, TIFR CMC Fellow, Bangalore	: For his contribution to parallel-processing techniques, retinal-image processing system and visual data processing.
2004	Prof. D. Dutta Majumdar Professor Emeritus, ISI Kolkata	: For pioneering contributions in computers' memory systems, intelligent recognition of non-numerical information and fuzzy soft computing approaches to pattern recognition.
2005	Dr. Rajendra Pawar Chairman, NIIT Ltd.	: For contribution to education and training in I. T.
2006	Dr. Surendra Prasad Director, IIT, New Delhi	: For development of new techniques and algorithms for signal processing & their application in SONAR & seismic signal processing and in digital communication networks.
2007	Dr. Rajeev Sangal International Institute of Information Technology, Hyderabad	: For development of 'anuskar system' (Paninian Grammar framework for natural language processing, NLP) where translation of information from regional languages such as Telugu, Kannada, Marathi, Bengali & Punjabi into Hindi is made feasible.
2008	Shri Vivek Sawant MD, MKCL, Pune	: For contribution in the field of e-Governance & I. T. literacy in the State of Maharashtra.
2009	Dr. Raghunath K. Shevgaonkar Director, Indian Institute of Technology, Delhi	: He has outstanding accomplishments in use of ICT for Higher Education.
2010	Prof. Rajat Moona, Director General, C-DAC, Pune	: He has contributed in the development of several large scale applications of ICT at C-DAC and also lead the initiatives in High Performance Computing, multilingual computing, professional electronics, cyber security, cyber forensics, health informatics, software technologies and education and training.
2011	Dr. Pradeep Kumar Sinha Senior Director (HPC and R & D), Centre for Development of Advanced Computing, Pune	: He has led national programs for building Supercomputing Systems and National Supercomputing Facilities, which have helped researchers and scientists carry out their research effectively. He steered the development and deployment of ICT enabled healthcare solutions for better healthcare services to citizens.
2012	Prof. Shiban K. Koul Dy. Director, (Strategy & Planning), IIT, Delhi	For development of an housing assembly for Phase Shifter and products made thereof (Patent assigned to AstraMicrowave -DRDO), suspended stripline to NRD guided transition and Hybrid integrated NRD guided Branch Line Coupler.

YEAR	NAME	SUBJECT OF RESEARCH
2013	Dr. Hemant Darbari Executive Director, C-DAC, Pune	For the development of Computer Assisted Translation Systems, Natural Language Based Information Extraction / Retrieval System, Packages for learning Indian languages through Artificial Intelligence and high performance computing system.
2014	Shri Sunil Khandbahale Founder, KHANDBAHALE.com, Nasik	For building a technology enabled Multi-lingual translation platform for languages with extensive vocabulary and for his first ever search-engine algorithm for Marathi language and spell checker software programme.
2015	Prof. Anurag Kumar Director, IISc, Bengaluru	Development of the theory and practice of performance analysis and management of telecommunication networks.
2016	Dr V. Ramgopal Rao Director, IIT Delhi	Contribution in the area of nano-technology. Development of the system-on-chip technologies used in modern consumer applications. Combination of chemistry with nano-electronics to build sensor platforms for future IoT applications.
2017	Prof. B. S. Jagadeesh Distinguished Scientist & Associate Director (C), E&I Group & Head, Computer Division, BARC, Mumbai	For outstanding contributions in systems and application software in High Performance Computing, Parallel Processing, Grid Computing, Cloud Computing and Computer Networks projects of strategic importance in the Department of Atomic Energy and other institutions in the Country and International mega science projects.
2018	Dr. Sushil Chandra Head of Biomedical Engineering Department, Institute of Nuclear Medicine and Allied Sciences, Delhi	For his contribution towards neuro-cognitive assessment, rehabilitation, training and enhancement using modern techniques based on Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR).
2019	Dr N Sarat Chandra Babu Executive Director Society for Electronics Transactions and Security Chennai	For his contribution to the field of Cyber Security, E-learning, Analog Circuits, HPC Grid & Cloud Computing, Parallel Computing, Internet of Things (IoT) and Big Data Analytics for critical infrastructure.
2020	Dr B. Krishna Murthy Sr Director (Scientist) Ministry of Electronics & IT, New Delhi	For his pioneering contribution to the algorithm for Universal Health Identification, Java Computer Software and Brain Computer Interface-based Computer Control Applications, using Eye Blinks detected from Electro Encephalogram (EEG) signals.
2021	Dr Milind Pande Pro-Vice Chancellor MIT World Peace University, Pune	For his significant contribution to the development of social products in the healthcare, agriculture and education sector by creating mobile-based Education Platform for Villages (MobiTech), which have helped farmers & agro-exporters get updated information about soil condition, weather condition and crops.





## AWARD WINNERS FOR MATERIAL & METALLURGICAL SCIENCES & TECHNOLOGY

YEAR	NAME	SUBJECT OF RESEARCH
1976	Dr. Brahm Prakash Vikram Sarabhai Space Center, Trivandrum	: Development of nuclear materials and fabrication of fuel elements for Nuclear Reactor.
1977	Dr. T. R. Ananthraman Banaras Hindu University, Varanasi	: Study of Metallurgical processes.
1978	Dr. S. Ramasheshan Former Head, Material Science Division National Aeronautical Laboratory, Bangalore	: Optics, X-ray crystallography and anomalous scattering of X-rays & development work in fibre techniques, high pressure physics & technology electron materials & electro composites.
1979	Shri C. V. Sundaram Head, Metallurgy Division, BARC, Mumbai	: Development of rare metal extraction technology for application in electronics and space programs.
1980	Dr. V. S. Arunachalam Dr. T. Balakrishna Bhat Research Laboratory, Hyderabad	: High temperature super alloys and development and production of aircraft breakpad friction material.
1981	1 Dr. T. Mukherjee 2 Shri A. N. Mitra 3 Shri M. D. Maheshwari 4 Shri S. C. Mohanthy Tata Iron & Steel Co. Ltd., Jamshedpur	: Developments & contribution to steel technology & introducing new grades of high strength low alloy steels.
1982	1 Dr. V. Ramaswamy 2 Shri S. R. Mediratta 3 Dr. S. M. Aeron 4 Shri N. S. Datar R & D Centre, Steel Authority of India, Ranchi	: Development & production of high-value alloy steels for various applications. Improvement of performance of Wire rod Mills and Hot Strip Mill.
1983	Dr. C. K. Gupta Head Metallurgy Division B.A.R.C., Mumbai	: Extraction and processing of rare and refractory metals for applications in Advanced Technology.
1984	1 Dr. P. Rama Rao 2 Shri S. L. N. Acharyulu Defence Metallurgical Lab, Hyderabad.	: Development and application of powder metallurgy alloys -Evaluation of Sintering Properties-Analysis of Mechanical and Fracture behaviour.
1985	Shri Pradip Ranjan Roy B.A.R.C., Mumbai	: Development and preparation of Plutonium Fuel for nuclear Reactors. Development of recycling techniques for Plutonium and Uranium.
1986	No Award	
1987	No Award	
1988	Shri. S. B. Subramayam	: Development of process Engineering, & Technology for and Director (Projects) Magnesium-Adoption of Indigenous Armour Materials to Indian Army's D.M.R.L., Hyderabad Combat Vehicles.
1989	Shri K. Balaramamoorthy	: For contributions over the years to the field of non-destructive testing, quality control and also development materials and their fabrication techniques.
1990	Dr. Placid Rodriguez	: The technology support in defining welding process parameters for the weld fabrication of large reactor components and the heat exchanges and steam generators for the FAST Breeder Test Reactor
1991	1 Shri Gadamsetty Venkateswarlu 2 Shri B. Nageswara Rao 3 Dr. V. Chandrasekaran	: For development of technology for production of high-energy Samarium-Cobalt permanent magnets.
1992	Dr. C. G. Krishnadas Nair Managing Director, Hindustan Aeronautics Ltd., Bangalore Complex, Bangalore	: Fibre reinforced plastic composites and he developed metal honeycomb sandwich structures for Cheetah helicopters and Chetak helicopters. He has also contributed richly to India's space and Missile programs.

YEAR		NAME	SUBJECT OF RESEARCH
1993		Dr. R. M. V. G. Krishna Rao Head, FRP, Pilot Plant, National Aerospace Laboratories (NAL), Bangalore	: For his research on the development of "Porous Fibre Reinforced Plastics (FRP) Tubes for water desalination Plant".
1994		Dr. Baldev Raj Indira Gandhi Centre for Atomic Research, Kalpakkam.	: Significant contribution to non-destructive testing of structural material, failure analysis of critical components and evaluation for structural integrity.
1995		Shri Raj Kishore Mahapatra Chairman and Managing Director, Mishra Dhatu Nigam Ltd. Hyderabad	: Development of maraging steel, powered metallurgy and soft magnetic alloy.
1996		Prof. Y. V. R. K. Prasad Indian Institute of Science, Bangalore	: Contribution in optimisation of metal processing operations including forging, rolling, extrusion and power processing.
1997		Prof. P. Ramachandra Rao Director, National Metallurgical Laboratory, Jamshedpur	: Development of rapid solidification techniques, production of Neodymium-Iron-boron magnet and pollution control systems for metallurgical industry.
1998		Dr. K. Balasubramanian Director, Nonferrous Materials Technology Development Centre, Hyderabad	: Development of high purity oxygen free electronic copper, high purity silver and titanium based bio medical devices for reconstructive surgery.
1999		Dr. T. K. Mukherjee Indian Rare Earths Limited, Mumbai	: For contribution to development of reactive metals, base metals, precious metals, nuclear metals and rare earths.
2000	1	Dr. P. P. Sinha VSSC, Thiruvananthapuram	: Developed various types of maraging steels for space and defence programmes, cryogenic materials for cryogenic engines, and special purpose materials for spacecrafts.
	2	Dr. B. K. Das CMET, Pune	: Developed variety of electronic materials such as ferrites, silicon, beta alumina, and high temperature super conductors.
2001		Dr. C. Ganguly Chairman and Chief Executive, Nuclear Fuel Complex, Hyderabad	: For contribution to production of uranium, plutonium and thorium bearing metallic oxide, carbide and nitride fuels for thermal and fast reactors.
2002	1	Dr. P. C. Deb Naval Materials Research Lab, Ambarnath	: For development of polymeric and ceramic materials, protection technology of ship structure and variety of materials for fuel cells.
	2	Dr. S. B. Krupanidhi Indian Institute of Science, Bangalore	
2003		Prof. P. M. Prasad Director (Retd), NFTDC, Hyderabad	: For development of sulphide metallurgy and aluminium technology.
2004	1	Dr. Y. R. Mahajan, ARCI, Hyderabad	: For development of high temperature aluminium alloys using rapid solidification process.
	2	Dr. J. Narayana Das, NMRL, Ambarnath	: For development of passive acoustic materials, sonar sensors and piezoceramic-polymer composites.
2005	1	Dr. A. K. Bhaduri IGCAR, Kalpakkam	: For development of in-situ repair welding in steam turbine blades and localised post-weld heat treatment.
	2	Dr. G. K. Dey BARC, Mumbai	: For development of melt spinning and planar flow casting technique for metallic glasses.
2006		Dr. M. Subba Rao Head, Design Engineering, Tata Advanced Materials Ltd, Bengaluru	: For contribution in the development of cost-effective composite material technology, applicable to aircraft structures.
2007		Dr. Pradip P. Chief Scientist & Head, Tata Research Development and Design Centre, Pune	: For contribution in the area of mineral beneficiation, grinding circuit improvement, power & metal refinery waste utilization to cementitious products.
2008		Dr. Guntupalli, Malakondalah Director, Defence Metallurgical Research Laboratory, Hyderabad	: For contribution in the development of cost-effective ultrahigh-strength, high-toughness low-alloy steel for missile and rocket castings

YEAR	NAME	SUBJECT OF RESEARCH
2009	Dr. Ashok Kumar Suri Distinguished Scientist & Former Director, Bhabha Atomic Research Centre, Mumbai	: For his outstanding contributions in extractive metallurgy of nuclear materials and in particular for the development of a process flow sheet for the recovery of uranium from low grade ores.
2010	Dr. Dipak Mazumdar Professor, Dept. of Materials & Metallurgical Eng. Indian Institute of Technology, Kanpur	: For his outstanding contributions to steel education, research and its application. His decade long association with several domestic steel industries has led to innovative tundish designs.
2011	1 Dr. Srinivasan Srikanth, Director National Metallurgical Lab (CSIR), Jamshedpur	: For his outstanding contributions in the area of thermodynamic modelling and its application to industrial processes, development of technology on pilot plant scale.
	2 Dr. Shrikant Vishwanath Joshi Additional Director, ARI, Hyderabad	: For his outstanding contributions in establishing a comprehensive high power laser centre for materials processing in the country.
2012	Prof. B. K. Mishra Director, CSIR – IMMT, Bhubaneswar	: For the development of software for designing tumbling mills, the iron ore jigging system for a close separation of the constituents, bioleaching process for copper recovery and biopolymerisation technology .
2013	Dr. Sanjay Chandra Chief of R & D and Scientific Services Tata Steel, Jamshedpur	: For development of technology for steel industry for improved waste utilization, new process route for the production of billets suitable for single-stage conversion in special bars, new desulphurization powder and new types of rebars and wire production.
2014	1 Prof. V. S. Raja Institute of Chair Professor, Dept. of Metallurgical Engg. & Material Science, IITB, Mumbai	: For the development of Polyethylene eco-coatings, nitrogen implant type 316L stainless steel for body implants, novel hot-dip galvanized coating, and stress corrosion cracking mechanism.
	2 Dr. U. Kamachi Mudali Indira Gandhi Centre for Atomic Research, Kalpakkam	: For solving the corrosion issues in nuclear industry, which include materials selection, design improvement, quality fabrication and sustained performance of components for the fast breeder reactor and associated fuel cycle facilities of DAE.
2015	Dr Madangopal Krishnan Head, Glass & Advanced Materials Division, BARC, Mumbai	Contribution to the scientific understanding and technological application for Ni-Ti shape memory alloy development and heat shrinkable sleeves made of these alloys for design, development and production of components and certification for use in lighter combat aircrafts.
2015	Dr Dinesh Srivastava Outstanding Scientist & Head Mechanical Metallurgy Division, BARC, Mumbai	Development of fabrication processing of nuclear structural materials for large scale production of Zircaloy tubular and rod products.
2016	Dr S C Sharma Scientist, Deputy Director, Vikram Sarabhai Space Centre, ISRO, Trivandrum	Major materials and technology development programme for space applications.
2016	Prof Subroto Mukherjee Associate Dean – Academics Head – FCIPT Division Institute for Plasma Research, Gandhinagar, Gujarat	Contribution in the field of Plasma surface engineering and materials processing, plasma physics principles for developing process and equipment for surface treatment, incineration and implantation and in real applications, including biomedical waste, plasma nitriding and surface modifications.
2017	Dr. Raghavan Gopalan Associate Director, International Advanced Research Centre for Powder Metallurgy & New Materials (ARCI), Balapur, Hyderabad	For his research leading to industrial scale production of magnetic materials, thermo electric materials and materials for energy storage batteries (i.e. Lithium ion batteries). Some of these products are used for space application.
2018	Dr Vivekanand Kain Outstanding Scientist & Head, Materials Processing & Corrosion Engineering Division, Bhabha Atomic Research Centre, Mumbai	For extensive research on corrosion of iron, nickel and zirconium based alloys, which has been extensively used in nuclear industry.
2018	Dr Ashim Kumar Mukhopadhyay Outstanding Science & Associate Director, Defence Metallurgical Research Laboratory, Kanchanbagh, Hyderabad	For his exemplary contribution towards self-reliance in aluminium materials technologies by indigenous development and production, quality assurance and type testing of various grades of specialty aluminium alloys for targeted applications in ongoing space programmes and defence sector.

YEAR	NAME	SUBJECT OF RESEARCH
2019	Dr B.B Kale Scientist G Ministry of Electronics & Information Technology Pune	For development of indigenous material and process for optical fibre grade SiCl <sub>4</sub> (99.99%) for optical fibre cables, commercialised by Optel, resulting in import substitution and low- cost optical fibre and (ii) indigenous technology for Li-ion battery, useful for electronics and e-vehicles.
	Dr Pritam Deb Professor, Dept. of Physics Tezpur University, Tezpur	For his pioneering contribution in the field of nano technology, biomedical molecular imaging, using nanoprobe, Environment and Energy Technology encompassing innovative materials.
2020	Dr Kinshuk Dasgupta Head, Advanced Carbon Materials Section, G&AMD, Materials Group, Bhabha Atomic Research Centre.	For development of the lightest and the most economical AK-47-HSC (hard steel core) bullet-resistant level III + bullet-proof jacket--Bhabha Kavach, resulting in import substitution and saving of forex.
2021	No Awardee	



## AWARD WINNERS FOR MECHANICAL & STRUCTURAL SCIENCES & TECHNOLOGY

YEAR	NAME	SUBJECT OF RESEARCH
1976	1 Shri R. S. Bir Consulting Engineer Ind. Design Center Bangalore	: Design and development of machine tools.
	2 Dr. C. V. Venkatesh Prof & Head Production Engineering Section Indian Institute of Technology Madras.	: Design and development of Cutting tools and machine tools including machinery for processing plastics.
1977	1 Shri Satish Mehta Dy. Operations Manager W.G. Forge & Allied Industries Bombay.	: Developing Electrical Discharge Machine for manufacture of dies.
	2 Shri S. V. Kothari Partner Paramount Furnace Co. Nagpur.	: Development of Induction Furnace suitable for operations with H <sub>2</sub> /N <sub>2</sub> gas mixtures for application in power metallurgy and electronics.
1978	Dr. S. R. Valluri National Aeronautical Laboratory Bangalore	: Metal fatigue and fracture related to Aeronautics.
1979	1 Prof. S. Durvasula	: Analytical and experimental techniques in the field Aero- Elasticity, Aerodynamics, Oscillation of structures, Buckling and Random vibrations.
	2 Prof. S. N. V. Rao	
	3 Prof. T. N. Krishnaswamy	
	4 Shri K. Ramamurthy Reddy Indian Institute of Science Bangalore	
1980	No Award	
1981	1 Shri Santosh Kumar De The SKD Combustion & Engineering Calcutta.	: Design & engineering of oil injection system for Blast furnaces using light naphtha/furnace oil and in low shaft furnace.
	2 Shri Torun Chandra Boruah Tocklai Experimental Station Jorhat. Assam State.	: Development of continuous Roller Machine for rolling withered leaves for production of black and green tea.
1982	No Award	
1983	Dr. V. Ramamurti Professor Dept. of Applied Mechanics Indian Institute of Technology, Madras	: Improved design, performance and development of equipment and machinery such as Cement Plant Machinery, Turbo machinery.
1984	No Award	
1985	1 Shri Areckal Paul Jayarajan	: Development and construction of Asia's largest Vainu Bappu reflection Optical Telescope. Co-ordinating the project management task of commissioning at Kavalur Observatory.
	2 Shri Suresh Chandra Tapda Indian Institute of Astrophysics Bangalore	
1986	1 Dr. S. Rajagopalan Dr. A. Krishnan National Aeronautical Laboratory, Bangalore	: Development of Electrochemical Milling Technology, Electrochemical Milling Machine and its applications.
	2 Shri A. V. Ramani Shree Chitra Tirunal Institute for Science and Technology, Trivandrum	
1987	1 Shri P. C. Sasidharan Nair	: Development of advanced "Medium duty slant bed CNC Turning Centre STC-25".
	2 Shri P. Venkatraman	
	3 Shri E. K. Sasidharan Hindustan Machine Tools Ltd., Kalamasary	
1988	1 Shri S. K. Mehta Director, Reactor Group B.A.R.C., Bombay	: Design, engineering, construction and commissioning of high Neutron flux thermal research reactor "DHRUVA".
	2 Shri S. M. Sundaram Chairman & Chief Executive Heavy Water Board Anushaktinagar Bombay	
1989	1 Shri Prem Nath Bhambi	: Development of film burner for residual fuel.
	2 Shri Harish Kumar Madan	
	3 Shri Kuldeep Narayan Dobhal	
1990	1 Shri Madhav Prabhakar Kawthekar	: Development of 4 axis CNC electric discharge machine.
	2 Shri Shreesh Prabhakar Kawthekar	



YEAR		NAME	SUBJECT OF RESEARCH
1991	1	Shri S. B. Bhagat	: He has developed milling of crankshaft pin and journal. He has developed double twist bunching machine, steel wire shaving machine and magnetic clutch for Tata P&H excavator.
	2	Shri Arun Kumar Roy	
1992		Shri S. B. Bhoje Reactor Group, Indira Gandhi Centre for Atomic Research Kalpakum	: He co-ordinated the work in raising the power of Fast Reactors. And was achieved to a level of 1 MWT, Without system generator and during this low power phase, the reactor availability was increased to 50%.
1993	1	Shri P. Muthukumaraswamy Research Associate	: They designed Polynomial High Speed Cams for Weft Knitting Machine, which has got substantial advantage. It is possible to convert all the existing Indigenous Circular Weft Knitting Machine with High Speed Cam system.
	2	Dr. S. S. Ramasamy The South India Textile Research Association. Coimbatore	
1994		Dr. S. V. Damle Professor Tata Institute for Fundamental Research, Mumbai.	: For development of scientific balloon for carrying heavy telemetry instruments to stratospheric altitudes.
1995		Shri M.K. Abdul Majeed Vikram Sarabhai Space Centre, Trivandrum	: For development of Stage Auxillary system & Mechanism for launch vehicle.
1996		Dr. H.S. Chandraseckariah Senior Scientist, Prototype Fabrication Group, Gas Turbine Research Establishment, Bangalore.	: For development of investment casting and light alloy structure casing.
1997		No Award	
1998		Shri R. K. Gargye Narora Atomic Power Station, U.P.	: Development of the method for en-masse coolant channel replacement in nuclear reactor.
1999		Dr. V. S. Chandrasekharan IIT, Mumbai	: For development of Geotechnical centrifuge for foundations, dams, tunnels, offshore structures & earthquake engineering
2000	1	Shri Ratan Kumar Sinha	: For various sensors for inspection, rehabilitation camera based alignment system and life management of pressure tubes of pressurised heavy water reactor.
	2	Shri B. B. Rupani	
	3	Shri B.S.V.G. Sharma BARC, Mumbai	
2001		Shri P. M. Kantak, Air India, Mumbai	: For development of static balancing method for air craft rotor.
2002	1	Shri R. S. Yadav	: For development of Pipe-in-Pipe nozzle, large size sealing arrangement in pressure vessel and heat exchanger for critical equipment in compact reactor.
	2	Shri A. B. Mukherjee BARC, Mumbai	
	3	Shri C. N. Ravi BHEL, Tiruchy	
2003		Mr. Subhash Chander Chetal Indira Gandhi Centre for A R, Kalpakam	: For development of fast breeder reactor for nuclear power generation.
2004		Dr. Prabir Chandra Basu Atomic Energy Regulatory Board, Mumbai	: For development of high performance concrete (HPC) and high volume fly ash concrete (HVFA) for nuclear power plant structures.
2005		Dr. Milind V Rane, Professor Mechanical Engg. Department, IIT Mumbai	: For development of matrix heat recovery unit for recovering heat from engine exhaust, engine cooling fluids and refrigeration systems.
2006		Captain N. S. Mohan Ram Advisor, TVS Motor Co. Ltd., Tamil Nadu	: For development of India's first indigenous frigate warship and conducting research and exploration of the methods for recycling of automobiles and also

YEAR	NAME	SUBJECT OF RESEARCH
		designing Coastal Guard offshore patrol vessels, Jacket Launch barge, Voith Schneider tugs, diving support vessels and passenger ferries.
2007	Dr. V. Bhujanga Rao Distinguished Science & Director Naval Science & Technological Lab, DRDO, Vishakhapatnam	: For the successful design and development of various stealth technologies for warships, submersible and submarine systems as also the developed indigenous cochlear implant device to cater more than 1 million deaf people in India.
2008	Dr. Pawan Kumar Goenka President, Mahindra & Mahindra Ltd., Mumbai	: For contribution in the area of indigenous development of automobiles and their components as also the development of the vehicle 'SCORPIO'.
2009	Dr. Perumal Chellapandi, Outstanding Scientist, Director, Reactor Design Group Indira Gandhi Center for Atomic Research, Kalpakkam	: He has made sustained contributions in the challenging conditions of structural integrity under static, transient and seismic conditions for sodium cooled fast breeder reactors.
2010	Prof. Pradip Dutta INAE Chair Prof. Dept. of Mechanical Engg. Indian Institute of Science, Bangalore	: He has contributed significantly in basic and applied research in heat transfer, energy systems and other advanced technologies pertaining to thermal sciences that include innovative process development for defect free light metal castings, development of new cooling technologies for thermal management, solar thermal technologies, development of new adsorption-based technologies for refrigeration and natural gas storage, together with the development of advanced CFD models and tools pertaining to the above processes.
2011	Dr. G. N. Dayananda Chief Scientist & Head Centre for Societal Missions and Special Technologies, National Aerospace Laboratories, Bangalore	: For his innovative research and development in the area of advanced materials and structural systems. A group led by him has successfully designed and developed aerospace-grade Autoclaves (high pressure vessels with internal temperature control) which are critical for the manufacture of the carbon fibre composite (CFC) structural components for the airframes of aerospace vehicles.
2012	Prof. D. V. Singh Former Director, IIT Roorkee	: For developing and providing solutions to dynamic problems of Single Track Vehicles, design of hydrostatic bearing with restrictor system, and developing the Pavement Management System (PMS).
2013	Prof. R. N. Iyengar Director, Centre for Disaster Mitigation, Jain University, Bangalore	: For developing the methods to analyze and improve performance of Nuclear Plants, Railway Tracks, Defense Equipments and Civil Structures subject to uncertain forces.
2014	Shri M. Vasudevan Unni (Team leader) Shri G. Radhakrishnan Shri K. M. Chandran Vikram Sarabhai Space Centre, Trivandrum	: For developing indigenous design and realization of a high capacity electrodynamic shaker-slip table system for environmental vibration testing of launch vehicle sub-assemblies.
2015	Dr Naresh Chandra Murmu Pr. Scientist & Head CSIR-Central Mechanical Engineering Research Institute, Durgapur	Contribution in the field of micro / nano-manufacturing, bearing and lubricants, surface coating and nano composites.
2016	No Award	
2017	No Award	
2018	No Award	

YEAR	NAME	SUBJECT OF RESEARCH
2019	Dr P. V. Venkitakrishnan Director, ISRO Bengaluru	For his pioneering contribution to the indigenisation of space grade minimum alloys, titanium alloys, super alloys and special grade steels for cryogenic applications of Indian space Programme.
2020	Dr Tarun Kant Professor Emeritus Dept. of Civil Engineering IIT, Mumbai	For his seminal contribution in the areas of solid mechanics, Plates, shells, fibre reinforced polymer composites, refined higher-order theories, thermal stresses, transient dynamics, finite element and other numerical methods.
2021	Dr Kirti Chandra Sahu Professor, Dept. of Chemical Engineering IIT, Hyderabad	For his immense contribution in the field of Earth Science, Mathematics & Physics, which include cloud and raindrops, multiphase and interfacial fluid mechanics, linear stability theory and pattern formation, micro-a bio-fluid mechanics and electrohydrodynamics.



## SMT. CHANDABEN MOHANBHAI PATEL INDUSTRIAL RESEARCH AWARD FOR WOMEN SCIENTISTS

YEAR	NAME	SUBJECT OF RESEARCH
1981	Dr. Usha Madhusudhan Joshi Institute of Research in Reproduction, Bombay.	: Enzyme linked immunosorbed assay (ELISA) technology having application in veterinary sciences, agricultural sciences and food technology.
1982	Dr. (Mrs.) Padma Vasudevan Professor, Centre for Rural Development & Appropriate Technology, Indian Institute of Technology, New Delhi.	: Molecular Structure and bulk properties of Polymeric materials for applications in Medicine, Surgery, biotechnology solar devices and Agriculture.
1983	Dr. R. Vijayavali Scientist, Central Electro Chemical Research Institute Karaikudi	: Electro-chemical processes for production of non - ferrous metals such as zinc, copper from by products and waste materials in metal coating and processing industries.
1984	Dr. Lakshmi Sita Ganugapati, Microbiology & Cell Biology Lab Indian Institute of Science, Bangalore	: Plant tissue Culture large-scale propagation Sandalwood by somaticembryogenesis.
1985	Dr. (Mrs.) Swarn Nityanand Scientist E-II, Head Division of Clinical Pharmacology & Experimental Medicine Central Drug Research Institute Lucknow	: Development and experimental evaluation of Gugul Resin and its various fractions.
1986	Prof. (Mrs.) Sulochana Gadgil Associate Professor Indian Institute of Science Bangalore.	: Study of the intra-seasonal variation of the monsoon and forecasting of associated rainfall to develop optimal cropping pattern.
1987	Smt. Malathy Puspavanam Scientist Central Electrochemical Research Laboratory Karaikudi	: Development of indigenous technologies for Electroplating of Aluminium and its Alloys and for Electro Deposition for corrosion prevention and attractive appearance.
1988	Dr. (Smt.) Sharada J. Shenoy Manager, R&D Centre Searle India Ltd., Land Thane	: Development of a chemical process for production of Azathioprine of live saving drug (AZORAN) for kidney transplant patients as a substitute of imported IMURAN.
1989	Dr. (Mrs.) Indira Rajagopal National Aeronautical Laboratory, Bangalore	: Development of gold plating of magnesium alloy, gold plating of pressure transducer, silver plating of Mux-Demux filter, nickel plating of seal disc of Nuclear reactor and black chromium deposition for solar collector.
1990	Dr. (Mrs.) Rajani Satish Nadgauda Division of Biochemical Sciences National Chemical Laboratory, Pune	: She has carried out research which is of applied origin on different plant species viz. turmeric, cardamom, banana, ginger, sugarcane, eucalyptus and bamboo.
1991	Dr. (Mrs.) Manju Sharma Dept. of Biotechnology, New Delhi	: The phytochemical work of Dr. Manju Sharma has found commercial application in plantations in Malaysia boosting the yield of latex by about 100%.
1992	Dr. (Miss) Mohini Saxena Scientist "C" Regional Research Laboratory, Bhopal	: A major highlight of her work is use of sisal fibre in place of asbestos which apart from being carcinogenic are also required to be imported. The sheets can be repaired on damages by impact.
1993	Dr. (Mrs.) Sukhada Mohandas Indian Institute of Horticultural Research Institute, Bangalore	: 1. New nitrogen fixing bacteria colonizing the endorhizosphere of tomato were isolate identified and registered at American Type Culture Collection, its contribution to nitrogen economy was studied and the bacteria was given to Regional Biofertilizer Development Corporation for multiplication and distribution to farmers. 2. Vesicular Arbuscular Mycohhizal fungi have been isolated colonizing fruit crops like papaya, mango banana and citrus and multiplied in the glasshouse.
1994	Dr. Retal Goel Associate Professor Microbiology,	: Development of Molecular markers for soil dominant pseudomonads used in growth promotion and plant

YEAR	NAME	SUBJECT OF RESEARCH
	G B Plant, Pantnagar	disease control.
1995	Dr. Shantra Krishnamurthy Principal Scientist, Post Harvest Technology, IIHR, Bangalore	: Development of effective method to extend shelf life, reduce spoilage and retain quality of mangoes, banana, grape, orange, pomegranate and vegetables.
1996	Dr. Prabha R. Chatterji Organic Coating and Polymer, IICT, Hyderabad	: Development of petroleum sulphonate for enhanced recovery of crude oil.
1997	Dr. Nilima Arun Kshirsagar Professor Clinical Pharmacology, G S Medical Collage, Mumbai.	: Use of Liposomal amphotericin for treating systematic fungal infection in AIDS, diabetes, cancer, organ transplant and Kala azar.
1998	Dr. Sujata Vasudev Bhat Professor of Chemistry, Indian Institute of Science, Bangalore	: Development of several and as well as known drugs and bioactive molecules.
1999	Dr. Kalpana Sastry NAARM, Hyderabad	: For development of oil seed plant pathology and integrated disease management for improved yield of safflower.
2000	Dr. Chitra Mandal IICB, Kolkata	: For development of ELISA based diagnostic technology for detection of Alpha-feto protein.
2001	Dr. Ganga Radhakrishnan Director Grade Scientist, Central Leather Research Institute, Chennai	: For contribution to leather industry by establishing Expertise Centre for Eco Testing Laboratory (EXCEL)
2002	Prof. Namita Suroia Associate Professor, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	: For Advanced Scientific Research, Bangalore for development of fatty acid biosynthetic pathway in human malaria parasite.
2003	Dr. B. Meenakumari Principal Scientist, Central Institute of Fisheries Technology, Cochin.	: For development of combination wire ropes and lobster traps for deep sea fishing industry.
2004	Dr. Suman Kumari Mishra Scientist, National Metallurgical Laboratory, Jamshedpur	: For development of advanced ceramic materials and nano hard coatings of high temperature superconductors.
2005	Smt. Charulata Padmakar Mahajan Scientist E, ARDE, Pune	: For development of armaments store - influence fuze and anti-tank mines.
2006	Prof. Vijayalakshmi Ravindranath Professor & Chairman, Centre for Neuroscience Indian Institute of Science, Bengaluru	: For contribution in the area of integrating mathematical and computational science for the understanding of complex biological systems.
2007	Prof. M. S. Shaila Dept. of Microbiology & Cell Biology Indian Institute of Science, Bengaluru	: For contribution in the area of molecular virology, transcription complex, structure-function relationship in various proteins, cell mediated immune responses and the development of recombinant vaccines.
2008	Prof. Padma V. Devarajan Dept. of Pharmaceutical Sciences & Technology Institute of Chemical Technology, Mumbai	: For contribution in the area of the development of engineered nano-particulate systems for slow and sustained drug release.
2009	Dr. Tessy Thomas, Scientist "G", Project Director, AGNI, DRDO, Hyderabad	: She has contributed substantially in various fields such as guidance, control, inertial navigation, trajectory simulation and mission design for AGNI System.
2010	Prof. Jyotsna Dhawan Senior Professor & Dean, DBT Institute for Stem Cell Biology & Regenerative Medicine, Bangalore.	: For her original research, highlighting the importance of the dormant or quiescent state in the function of adult stem cells, and her contributions to the establishment of the DBT Institute for Stem Cell Biology and Regenerative Medicine, Bangalore.



YEAR	NAME	SUBJECT OF RESEARCH
2011	Dr. M. Lakshmi Kantam Director CSIR - Indian Institute of Chemical Technology Hyderabad	: Her extensive efforts in basic research that resulted in the development of novel homogeneous and heterogeneous catalysts and their applications towards the development of innovative green processes for fine and bulk chemicals. In particular utilization of nanomaterials, hydrotalcites, and hydroxyapatites as catalyst supports and catalysts for asymmetric catalysis and C-C / C-N coupling reactions.
2012	Dr. Madhu Dikshit Chief Scientist, CSIR-CDRI, Lucknow	: For the establishment of test systems for (1) Gastric proton pump activity and a new flow cytometry method to assess acid release from the gastric parietal cells and (2) Full spectrum of in vitro and in vivo assays to assess anti-thrombotic potential of test compounds.
2013	Dr. Vandana B. Patravale Prof. of Pharmaceutics, ICT, Mumbai	: For development of Platform technology based on biodegradable polymers for coronary stents, Intrauterine contraceptive device, Self microemulsifying tablets, Novel stable microemulsion based formulations and other products.
2014	Dr. Beena Rai Principal Scientist, TCS Ltd, Pune	: For the development of a molecular modeling approach for design and development of engine oil formulations, novel coating with improved properties for metallic surgical blade used in a medical device, novel products from hazardous wastes and improved additives for titanium oxide based paints.
2015	Dr Shubha V Chief Scientist, Airport Instrumentation, CSIR Technical & Business Consultant, Bengaluru	Contribution for indigenous-innovative development of Airport Meteorological systems, from design concepts to technology, required for safe airport operations along with Thermophysical Instrumentation and Techniques for characterization of materials.
2016	Dr Mitali Mukerji Senior Principal Scientist CSIR Institute of Genomics and Integrative Biology, New Delhi	Research in the area of population genomics, genomics-aided genetic diagnostics, role of repetitive sequence in genome organization and function and Ayurgenomics, useful to thousands of families across the country through an "Ataxia clinic set at AIIMS".
2017	Prof Smita Lele Registrar and Professor of Biochemical Engineering, Institute of Chemical Technology, Mumbai	For development of several novel processes and products for fruits and vegetables, which has resulted into commercially successful endeavours and in turn led to substantial improvement in livelihood of farmers. Utilisation of agricultural wastes, including fruit seeds, through this novel approach addresses the problem of food security, which is a national concern.
2018	Dr Usha Barwale Zehr Director and Chief Technology Officer Maharashtra Hybrid Seeds Company Private Limited (MAHYCO), Badnapur	For research in application of plant biotechnology which has resulted in enhanced yield and plant health in a sustainable manner. Use of molecular tools to enhance breeding activity, use of genomics to gain better understanding about crops, deploying new tools to enhance nutritional value of foodgrain has led to improvement in livelihood of farmers and agriculture overall.

YEAR	NAME	SUBJECT OF RESEARCH
2019	Dr Sudha Rao Co-founder & Executive Director Genotypic Technology Pvt Ltd Bengaluru	For establishing world-class Genomics Facilities, including Microarray and Next Generation Sequencing Facilities, creating the first trained workforce in Genomics in Indian, as also developing Specific panels, which aid clear diagnosis for patients as also disease management, such as transplant and Renal disorders.
	Dr Sadhana Rayalu Chief Scientist & Head Environmental Materials Division CSIR-NEERI, Nagpur	For research on environmental and energy materials and Catalysis, with special focus in the area of molecular environmental chemistry and environmental catalysis. The technology has been transferred to more than 250 fireworks manufacturers.
2020	Dr Renu Swarup Secretary, Ministry of Science & Technology, Govt. of India, New Delhi	For her contribution to setting up Biotechnology Industry Research Assistance Council (BIRAC), the only research company of the Government, supporting over, 3500 start ups and nearly 100 SMEs and Industries for Biotech Innovation Research & Translational Research as also for development of major S&T solutions to tackle Covid-19
2021	Dr Anuya Nisal Principal Scientist CSIR-NCL, Pune	For contribution in the areas of polymers for healthcare, biomaterials, medical devices and tissue engineering, as also to the Silk-based Materials Technology, which has been licensed to a start-up, the first one globally, to conduct clinical trials for use of Silk in bone regeneration.
		NAME SUBJECT OF RESEARCH



## **Dr. Mohan I. Patel VASVIK Award for Leadership in Leveraging Scientific and Technological Research for Economic Growth**

<b>YEAR</b>	<b>NAME</b>	<b>SUBJECT OF RESEARCH</b>
2014	Dr. Keki Hormusji Gharda Chairman and Managing Director Gharda Chemicals Limited	: For taking lead in Scientific and technological research to develop new products and processes and providing leadership in using the same for producing many products which have resulted in the economic growth.
2016	Shri Pankaj Patel Chairman & Managing Director, Zydus Cadila, Ahmedabad.	Development of the first Indian made H1N1 vaccine for fighting against Swine Flu, VaciFlu-s, launching Exemptia, the world's first biosimilar for Adalimumab and developing the largest selling therapy worldwide for inflammatory arthritis. Scientific and technological research to develop new healthcare products and processes that have enabled India fight against diabetes and many other diseases.
2018	Shri Madhukar Parekh Chairman, Pidilite Industries Ltd., Mumbai	For converting an 'unexciting' product into one of the country's top brands – Fevicol. For providing exemplary leadership to Pidilite Industries to become the market leader in the adhesives and sealants segment in India. He has leveraged Technology with R&D in commercializing many adhesive products.
2022	Shri Shrikant Badve Managing Director, Badve Group of Companies Pune	For immense contribution to further technological development with indigenous research, especially in the field of Automotive Engineering

## AWARD FUNCTIONS - PHOTO LIBRARY



**Shri T. A. Pal, Dr. M. L. Patel, Prof. M. G. K. Menon and Shri Rajani Patel (1976)**



**Dr. M. L. Patel, Shri Bhallabhai Contractor, Shri H. M. Patel, Prof. M. G. K. Menon and Dr. Vasudraju (1977)**



**Dr. M. L. Patel, Shri Manoj Dani and Shri Ramkrishna Bajaj (1978)**



**Dr. M. L. Patel, Shri M. Hidayatullah and Shri Jakkirama Harwalabhai (1979)**



**Dr. M. L. Patel, Shri S. P. Godrej and Shri Vasant Dada Patil (1980-81)**



**Dr. Shankar Dyal Sharma being received by Dr. M. J. Patel (1982-83-84)**



**Shri Shikharaj Patel in the centre with Dr. M. L. Patel and Prof. M. G. K. Menon (1989-90-91)**

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**Dr. M. L. Patel with The Rt. Hon. John Prescott (1999-2008)**



**Prof. M. G. K. Menon with Lord Dholakia and Dr. M. L. Patel (2001-02)**



**Dr. A. P. J. Abdul Kalam, Nayan Patel, Prof. M. G. K. Menon, Dr. M. L. Patel and Dr. M. M. Sharma (2003-04-05)**



**Dr. M. L. Patel presenting memento to Shri Narendra Modi (2006-07-08)**



**Prof. M. M. Sharma, Dr. M. L. Patel, Shri Niranjan Bajaj and Dr. R. Mushelkar (2009-10-11)**





**Shri Piyush Goyal lighting the lamp (2012-13-14)**



**Shri Piyush Goyal addressing the gathering. On the dais (from L to R):  
Shri Nayan Patel, Prof. M M Sharma, Dr. M I Patel & Prof. A B Pandik (2012-13-14)**



**Shri Suresh Prabhu lighting the lamp (2015-16)**



**Shri Suresh Prabhu addressing the gathering. On the dais  
(from L to R): Shri Nayan Patel, Shri Parikaj Patel, Dr. M I Patel,  
Prof. M M Sharma & Principal Mr. Deepa Sharma**



**Prof. M M Sharma, Dr. M I Patel, Dr. Anil Kakodkar &  
Shri Madhukar Parekh (2017-18)**

# VIVIDHLAXI AUDYOGIK SAMSHODHAN VIKAS KENDRA



## AIMS, OBJECTS, AND PROGRAMME

Our country is passing through one of its best periods of history. The economic growth, the rising levels of the standard of life of our people, the spread of education and involvement of our people in the affairs of the country as never before.

It is now well realised that in any industrial society or country, economic growth is essential to improve the quality of life. For a country like India striving to achieve economic prosperity and sustainable development, all individuals and organisations, who have the ability to do so, should help the cause of promoting research. The above multi-purpose industrial research promoting centre was founded to contribute towards this end and strengthen the efforts being made in the field of industrial research in India. VASVIK has been engaged in this work of national importance since 1974.

**The main objects of the Kendra as set out in the Memorandum of Association are:**

1) To organise, sponsor, promote, establish, encourage, undertake, conduct, assist, carry on or help to carry on in any part of India, scientific research for the extension of knowledge in the field of metallurgical, engineering, industrial and other allied sciences, in any way or by means whatsoever and in any area or field not involving or carrying on any activity for profit.

2) To organise, sponsor, promote, establish, conduct, encourage, assist in any part of India, scientific research institute or institutes as an object of general public utility not involving or carrying on any activity for profit.

3) To organise, sponsor, promote, establish, encourage, undertake, conduct, assist, carry on or help to carry on in any part of India, scientific research for the extension of knowledge in the field of medical, pharmaceutical, agricultural, social and other allied sciences in any way or by any means whatsoever and in any area or field not involving or carrying on activity for profit.

### **The centre has undertaken the following activities:**

**1. Give Annual Cash Awards of ₹ 1,51,000 each and a citation in the following fields :**

- i. Agricultural Sciences & Technology
- ii. Biological Sciences & Technology
- iii. Chemical Sciences & Technology
- iv. Electrical & Electronic Sciences & Technology
- v. Environmental Sciences & Technology
- vi. Information & Communication Technology
- vii. Material & Metallurgical Sciences & Technology
- viii. Mechanical & Structural Sciences & Technology

**2) As also, Smt. Chandaben Mohanbhai Patel Industrial Research Award for Women Scientists**

*The selection of the recipients of the awards is by a committee comprising of prominent scientists of national and international standing in their respective fields.*

**3) VASVIK also gives Dr. Mohan I Patel Industrial Research Leadership Award to an eminent person from Industry who has made use of indigenous R&D work for industrial growth and contributed to economic prosperity of India.**

**4) To help all causes and efforts aimed at the development of science and technology anywhere in India.**

**5) To provide assistance to needy researchers.**

# APPLICATIONS AND NOMINATIONS FOR VASVIK AWARDS 2022 & 2023



Awards are given to Indian citizens for research in each of the following fields :

- (a) Agricultural Sciences & Technology
- (b) Biological Sciences & Technology
- (c) Chemical Sciences & Technology
- (d) Electrical & Electronic Sciences & Technology
- (e) Environmental Sciences & Technology
- (f) Information & Communication Technology
- (g) Material & Metallurgical Sciences & Technology
- (h) Mechanical & Structural Sciences & Technology
- (i) Smt. Chandaben Mohanbhai Patel Industrial Research Award

#### For Women Scientists

Since 2000, VASVIK has also instituted a Special Award solely for women scientists to recognise and encourage women's participation in science and technology leading to national prosperity.

All the above award categories carry a cash prize of ₹ 1,51,000 and a citation to recognize excellence in their respective field of Science & Technology leading to national prosperity.

#### AIM:

It is now well realised that in any industrial society or country, economic growth is essential to improve the quality of life. For a country like India striving to achieve economic prosperity and sustainable development, all individuals and organisations, who have the ability to do so, should help the cause of promoting research. The above multi-purpose industrial research promoting centre was founded to contribute towards this end and strengthen the efforts being made in the field of industrial research in India.

#### SCOPE:

Consideration will be given to achievements in design or any production techniques or methods, particularly with regard to their impact on industrial and economic growth, import substitution, saving of foreign exchange, cost reduction, etc.

#### Objectives and Scope of VASVIK Awards:

We have instituted nine annual VASVIK Industrial Research Awards, each of ₹ 1,51,000, and a citation to be awarded to an individual or group of individuals, who, in the opinion of our Board of Advisors, have made outstanding contribution to the advancement of science and technology or provided leadership leading directly to national prosperity in India.

**Applications & Nominations for  
the year 2022 & 2023 may  
please be submitted in  
prescribed format before  
30-06-2023**

Format can be downloaded from [www.vasvik.org](http://www.vasvik.org)  
for Vividhlaxi Audyogik Samshodhan Vikas Kendra

**Nayan Patel**

Director

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