VIVIDHLAXI AUDYOGIK SAMSHODHAN VIKAS KENDRA

INDUSTRIAL RESEARCH AWARDS

2022 - 2023

VASVIK

संशोधनेन संवृद्धिः

50 Years ANNIVERSARY

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VASVIK

संशोधनेन संवृद्धिः

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** Chairman - VASVIK
Address	**Prof. M. M. Sharma** Chairman - VASVIK Board of Advisors

Award Presentation

Citations read by

Dr. A. B. Pandit - VC, ICT, Mumbai

Response	**Dr. Pramod Chaudhari** Leadership Awardee
Address	**Dr. R. A. Mashelkar** Chief Guest
Vote of Thanks	**Shri Nayan Patel** Director - VASVIK

National Anthem

VIVIDHLAXI AUDYOGIK SAMSHODHAN VIKAS KENDRA

INDUSTRIAL RESEARCH AWARDS
2022 - 2023

THE **SCIENCE** OF TODAY IS THE **TECHNOLOGY** OF TOMORROW

VASVIK

संशोधनेन संवृद्धिः

50 Years
ANNIVERSARY

50	10	20+	500+
YEARS SINCE INCEPTION	AWARD CATEGORIES	AWARD FUNCTIONS	SCIENTISTS AWARDED

WELCOME ADDRESS

Dr. Mohan I Patel

Our Chief Guest this evening Dr. Raghunath Mashelkar - Chairman of our Board of Advisors, Prof. M. M. Sharma - my colleagues on the Board of VASVIK - Men and Women of science and friends.

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 economic growth and self-sufficiency in our country, are being conferred the VASVIK Awards.

Dr. Raghunath Mashelkar, our Chief Guest, foremost among the contributive scientists of our country. His researches and life work are all aimed towards economic growth and furthering economic prosperity of our country. Sir, our pleasure of welcoming you is doubled when we know that it is the 2nd time that you have accepted to be with us as Chief Guest during the last 12 years and it is indeed more auspicious and befitting that persons who have contributed most to our institution when it is celebrating its Golden Jubilee.

It is said ज्ञानं परं बलं, विशिष्टं ज्ञानं इति विज्ञानं

Knowledge of science is the most powerful commodity for human life. In one convocation function in the Gujarat University of Science and Technology I referred to achievements of Dr. Mashelkar. I referred to him as one of the richest man in India. In the audience were seated many prominent Industrialist of Gujarat and they were surprised. Some even shocked! Mashelkar, a scientist as a rich man! When I explained that he possesses that wealth which cannot be destroyed. It remains in possession always with the owner and to further to my explanation, I quoted from Sanskrit

विद्या नाम नरस्य रूपं अधिकम् प्रछन्न गुप्तं धनम्
विद्या भोगकरी यश: सुखकरी विद्या गुरूणाम् गुरु: |
विद्या बंधुजनो विदेश गमने विद्या परा देवता
विद्या राजसु पूजिता न तु धनम् विद्या विहीन: पशु: ||

I need not say that he is a towering personality. It is so obvious we can all see that and admire. But more on that he is tall among scientists, among thinkers and indeed he rises above all communicators. A man of science and technology, he talks about Gandhiji. He looks upon him as the "Timeless Inspirator". He talks about "Reinventing India" and about producing "more from less and for many". He talks about looking through a convex lens to work towards bringing the world together and instead of dividing on the basis of caste and religion, he talks of regrouping the India of tomorrow into a composite one, a homogenous entity.

Dr. Mashelkar is known as a dangerous optimist. A fellow of the Royal Society, he has pioneered Gandhian Engineering. When it comes to national interests, he is the last one to compromise. He has fought valiantly and revoked the wrong US Patents on Turmeric and Basmati rice and he has argued our case based on Indian traditional knowledge, successfully. A director on the Boards of India's leading companies like Tata and Reliance. A distinguished visiting lecturer at Harvard a recipient of more than 40 Doctorates from Universities all over the world, a પદ્મભૂષણ.

So friends, we could have none better than Dr. Mashelkar once againat whose hands the VASVIK awards to be given to scientists for their researches.

Dr. Mashelkar acknowledges greatly the fact that Prof. M M Sharma is his Guru. He studied under Dr. Sharma at the University department of Chemical Technology. So it is a very auspicious situation we find here where the Guru is presiding, the chela is the Chief Guest.

Dr. Sharma's contribution to Chemical Science and Technology is tremendous. He is known to have produced scientists and technologists, by hundreds and has been devoting his time and energy all his life towards teaching and research. His is a lifelong saga of Science, Research, Technology and Education.

The affairs of our organization are conducted under the guidance and advice of the Board of Advisors of which Prof. M. M. Sharma is the Chairman. He succeeded Prof. M G K Menon in 2008 who was the Chairman for almost 35 years i.e. since VASVIK was established in 1973.

In the words of Dr. A. P. J. Abdul Kalam, the Eleventh President of India who was our Chief Guest in 2005 "In science, the word impossible does not exist. Inventions and discoveries are the products of constant endeavour by creative minds, envisioning ever-new outcomes."

We need a pragmatic blueprint for a revolution in Indian science Research and Technological applications that offer challenging missions to attract youth. The present trend among young people after Class XII is to take up engineering, medicine or management courses because of an assurance of employment, even more for self-employment in different avenues by way of startups.

To attract the best minds to science and research at the MSc and doctoral levels, it is essential that an exclusive science cadre is introduced to facilitate a career in well-known scientific laboratories, universities and all other chanceries of research.

It is in with this spirit that VASVIK is happy always to be associated with educational institutions such as Technical Universities, the IITs and research laboratories all over.

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

- AGRICULTURAL SCIENCES & TECHNOLOGY
- BIOLOGICAL SCIENCES & TECHNOLOGY
- CHEMICAL SCIENCES & TECHNOLOGY
- ELECTRICAL & ELECTRONIC SCIENCES & TECHNOLOGY
- ENVIRONMENTAL SCIENCES & TECHNOLOGY
- INFORMATION & COMMUNICATIONS TECHNOLOGY
- MATERIAL & METALLURGICAL SCIENCES & TECHNOLOGY
- MECHANICAL & STRUCTURAL SCIENCES & TECHNOLOGY

All these carry a Citation and a cash award of Rs. 1.50 lac each.

So also a separate award for women scientists which carries the name "SMT. CHANDABEN MOHANBHAI PATEL INDUSTRIAL RESEARCH AWARD". Since 2019, Year one more award has been added to be given to a successful entrepreneur who has himself used research and implemented to establish an Industrial Manufacturing Unit.

VASVIK has donated two air-conditioned auditoriums to the Institute of Engineers, one at Vadodara and the other at Ahmedabad with a capacity of 300 and 400 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 Complex.

For our Awards Functions in the past, we have had men of great eminence such as, Shri Morarjibhai Desai, Dr. Shankar Dayal Sharma, Shri P V Narasimha Rao, Dr. Abdul Kalam, Dr. Manmohan Singh, Shri M Hidayatullah, The Rt. Hon. John Prescott, the then Dy. Prime Minister of the U.K, and such others.

In this great linage, I also like to proudly mention that Shri Narendra Modi was our Chief Guest at Vasvik Awards Giving Function at the Charotar University of Science and Technology.

When we look back on the work of more than 50 years, 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 have not been possible without the willing and generous support and advice we received from such great scientists as Prof. MGK Menon, Prof. M M Sharma, Dr. APJ Abdul Kalam, Dr. R A Mashelkar, Prof. P.N. Tandon, Dr. A V Rama Rao, Dr. S K Brahmachari, Prof. Anupam Varma, Dr. Swaminathan Sivaram, Prof. U B Desai, Dr. Sukumar Devotta, Dr. Vijay Bhatkar, Dr. P Rama Rao, Dr. M.L. Munjal and many others who have been actively associated with us. I take this opportunity of thanking them for all that they have done for this institution.

In science it is said, "Availability of evidence is the proof of existence, but non-availability of evidence is not necessarily the proof of non-existence". 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 them today. My sincere congratulations to all the Award winners. Many of you have come long distances in response to our invitation.

I am glad that some of you have come with your families, I take special pleasure in welcoming you all, the Awardees – 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 that you all will have a pleasant sojourn here in Mumbai.

I will end with a beautiful couplet from मोरोपंत so beautifully composed by him, by way of a fusion of Science and Values of life.

मोरोपंताची केकावली
तोयाचे परिनाव ही न उरते संतप्त लोहावरी,
ते भासे नलिनी दलावरी अहा सन्मोक्तिकाचे परी |
ते स्वाति स्तव आब्धि शुक्ति फूटते मोती घड़े नेटके
जाणा उत्तम मध्यमाधम दशा संसर्ग योगे टिके ||

Vasvik is run well all these 50 years and now substantially the responsibility has been taken up by Nayan and I am sure and I assure you that he will do much better than that I have done.

And friends we proceed now to our Golden Jubilee Celebrations, Listening to many learned speakers and handing over Awards to winners

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 Ramakrishna 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** (Hon'ble Minister for Human Resource Development Government of India)
1987-88	**Shri Kamal Morarka** (M. P.)	**Prof. M. G. K. Menon** (Hon'ble Minister of State for Science & Technology and Human Resource Development Government of India)
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** (Hon'ble Minister for Civil Aviation, GOI) **Lord Navnit Dholakia** (Chairman, Liberal Democratic Party - U.K.)
2003-04-05	**Prof. M. G. K. Menon**	**Dr. A. P. J. Abdul Kalam** (11th 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** (Hon'ble Union Minister of State for New & Renewable Energy, Power & Coal) **Shri Amrish R. Patel** (President, Shri Vile Parle Kelavani Mandal)

AWARD FUNCTIONS

YEAR	PRESIDED OVER BY	CHIEF GUEST & GUESTS OF HONOUR
2015-2016	**Prof. M. M. Sharma**	**Shri Suresh Prabhu** Hon'ble Union Minister for Railways
2017-2018	**Prof. M. M. Sharma**	**Dr. Anil Kakodkar** Chairman, Rajiv Gandhi Science and Technology Commission
2019-20-21	**Prof. M. M. Sharma**	**Shri Amrishbhai Patel** President, SVKM & Chancellor, NMIMS University
2022-2023	**Prof. M. M. Sharma**	**Dr R. A. Mashelkar** Eminent Scientist

VRSVIK

CHIEF GUEST

Dr R A Mashelkar
Eminent Scientist

Dr. Mashelkar is known for his pioneering scientific research contributions, his transformative leadership, his tireless advocacy for inclusive innovation, his global championing of balanced intellectual property rights and his influential role in shaping the science, technology & innovation policies in post liberalised India.

For his scientific research, he has a rare distinction of winning some of the topmost global accolades as Fellow of Royal Society (FRS), Foreign Associate of US National Academy of Science, Foreign Associate of US National Academy of Engineering, Fellow of Royal Academy of Engineering, UK, Foreign Fellow US National Academy of Inventors, Fellow of American Academy of Arts & Science, Lenovo Science Prize, the highest science prize of The World Academy of Arts & Science, etc.

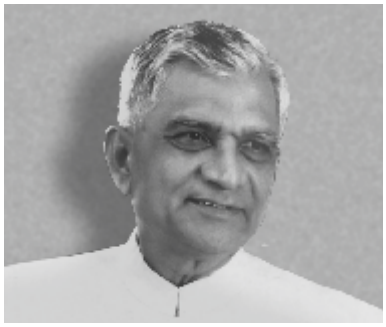
His transformation of National Chemical Laboratory into an International Chemical Laboratory is a case study in the Harvard Business School. The transformation of CSIR under his leadership has been ranked as being among the top 10 achievements of Indian science and technology in the 20th century in the book 'Scientific Age' by Dr Jayant Narlikar. His successful fight against the wrong patent on wound healing properties of turmeric by the US patent office has led to transformative change in the recognition of traditional knowledge as a knowledge system by the World Intellectual Property Organisation for the first time.

He has been a member of Board of Directors of leading companies in India, from Reliance to Tata Motors to Hindustan Unilever. He chaired the Innovation Councils of many companies. He is the only scientist so far to have won the coveted JRD Tata Corporate Leadership award.

He is recognised by the three highest civilian awards namely Padma Shri (1991), Padma Bhushan (2000) and Padma Vibhushan (2014) in India but also a record of 48 honorary doctorates from esteemed universities globally.

He has chaired 16 high powered Mashelkar committees dealing with several critical national policy reforms. He has been a member of Science Advisory Committee to the Prime Minister formed by different governments for about three decades.

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 Tatas in 1952.

After some six years of technical and business experience with them, he established Lans Metals, Extrusion Processes, Impact, P & amp; 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, Silvasa 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
- Priyadarshni
- Jamnalal Bajaj
- Vishwa Gurjari
- CLEO
- Arch. of Europe
- Gold Star
- N.R.I. Award
- CHEMINOR
- Lifetime Achievement Rotary Award
- Aryabhat Award for Mathematics
- Divya Bhaskar Award of The Indian Planetory Society

Shri Nayan Patel

Executive Director

Patel Extrusion Group

Shri Nayan Patel graduated in Mechanical Engineering from Fachhochshule, 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 Packam Controls Pvt. Ltd. which provides and manufactures Motion Control Devices such as Cam Indexers 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 Kelavani Mandal
- Charusat University, Changa, Gujarat
- Janseva Samitis' Mahila College at Malad
- Surajba Vidya Mandir at Jogeshwari
- Honorary Consul of The United Republic of Tanzania in Mumbai

BOARD OF DIRECTORS

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.

BOARD OF ADVISORS

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 unparallel 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 benefitted 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 26 th 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

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INSA Senior Scientist, New Delhi

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Chairman, Agricultural Scientists Recruitment Board, New Delhi

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Centre for Advancement of Sustainable Agriculture (CASA), New Delhi

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Crop Science, ICAR, New Delhi

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Department of Chemical Engineering
Institute of Chemical Technology, Mumbai

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Distinguished Scientist
Indian Institute of Chemical Technology, Hyderabad

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CEO
Serigen Mediproducts Private Limited, Pune

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Tejas Networks Ltd., Bengaluru

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Gujarat

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IIT Kanpur

Dr. S. R. Wate
Former Director, CSIR-NEERI, Nagpur

Prof. Virendra Sethi
Professor
Centre for Environmental Science and Engineering
Mumbai

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Maharashtra Knowledge Corporation Limited, Pune

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Bennette University, Greater Noida

Dr. Bharat S. Chaudhari
Professor
Dept of Electronics and Telecommunication
Maharashtra Institute of Technology, Pune

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Professor, Metallurgical & Materials Engineering IIT, Kharagpur

Dr. A. K. Suri
RR Fellow
BARC DAE Mumbai

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 Economical 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 ₹1,00,000 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 Economical 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 2024.

Dr Pramod Chaudhari
Executive Chairman
Praj Industries Ltd.

Dr. Pramod Chaudhari is Executive Chairman of Praj Industries Ltd. Praj Group is global provider of end-to-end Technology and Engineering solutions for Bioenergy, Bio-Chemical and Bio-Pharma industry, with strong backing of world-class state-of- the-art R&D Centre called, Praj Matrix.

As a first-generation techno-entrepreneur, he founded Praj in 1983. He dreamt and developed Praj into a world-class engineering company specialized in Agri-processing opportunities. With strong belief in principle of triple bottom-line, his business model is inherently scalable, replicable and sustainable. Praj fostered the emergence of advanced technologies in certain Bioenergy and allied space. As India's biggest Biofuel Technology Company, Praj has more than 1000 footprints in over 100 countries, across five continents. Dr. Chaudhari is acclaimed as Ethanol Man in the industry networks.

Under his visionary leadership, Praj has successfully developed the technology for conversion of Cellulosic Biomass to 2nd Generation Renewable Fuels, Biogas and Renewable Chemicals & Materials. Praj is the only Indian Corporate to launch India's first-of-its-kind Integrated Bio-refinery Demo and now executing three commercial plants for Indian OMCs. Globally, Praj is one of the handful of companies to achieve this feat. Praj has also set up first of its kind integrated demo plant of Compressed Biogas (CBG). Further, Praj is also engaged in design & deployment of aviation fuel technology.

Deeply passionate about Bioeconomy and Environment, Pramod is committed to develop clean and green technologies. As a champion of the powerful premise that 'Innovation and Entrepreneurship can change the world for better', he has been a tireless crusader in propagating spirit of entrepreneurship and intrapreneurship. His leadership and pioneering contribution towards building a bio-based economy is exemplary. His tireless efforts in environmental science, bio-refining and developing bio-based products that enhance rural economy are indeed remarkable and well appreciated.

He is an alumnus of Harvard Business School (AMP 1995)

Award Category	2022	2023
Agricultural Sciences & Technology Prof. Anupam Varma (Chairman)	**Dr G. Taru Sharma** National Institute of Animal Technology, Hyderabad	**Dr Kajal Chakraborty** ICAR – Central Marine Fisheries Research Institute, Kochi
Biological Sciences & Technology Prof. P N Tandon (Chairman)	**Dr T Govindaraju** NCASR, Bengaluru	**Dr Atul Goel** CSIR-CDRI, Lucknow
Chemical Sciences & Technology Dr. Swaminathan Sivaram (Chairman)	**Prof. Shirish Sonawane** National Institute of Technology Warangal, Telangana	**Prof. Ashwin Patwardhan** Institute of Chemical Technology, Mumbai
Electrical & Electronic Sciences & Technology Prof. Uday B Desai (Chairman)	No Award	No Award
Environmental Sciences & Technology Dr. Sukumar Devotta (Chairman)	**Dr Gangagni Rao Anupoju** IICT, Hyderabad	**Prof. Ligy Philip** IIT, Madras
Information & Communication Technology Dr. Vijay Bhatkar (Chairman)	**Dr Rajendra Joshi** HPC-Medical and Bioinformatics Applications Group, C-DAC, Pune	**Prof. Dr Rabinder Henry** IQAC, Chandigarh
Material & Metallurgical Sciences & Technology Prof. Indranil Manna (Chairman)	**Dr Dhruva Kumar Singh** BARC, Mumbai	**Prof. Kamal K Kar** IIT, Kanpur
Mechanical & Structural Sciences & Technology Prof. Gautam Biswas (Chairman)	**Prof. Dilip K Pratihar** IIT, Kharagpur	**Dr Nagahanumaiah** CMTI, Karnataka
Smt. Chandaben Mohanbhai Patel Industrial Research Award for Women Scientists	**Ms Geethanjali Radhakrishnan** Adiuvo Diagnostics Private Limited, Tamil Nadu	**Dr Prathama S Mainkar** CSIR, Hyderabad
Dr. Mohan. I. Patel Industrial Research Leadership Award	**Dr Pramod Chaudhari** Praj Industries Ltd	

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-I-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.

YEAR		NAME		SUBJECT OF RESEARCH
1991		**Dr. Raj Mani Pandey**	:	For his pioneering work in tissue culture especially pertaining to the cultivation of papayas of a known sex 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 Lathyrus sativus to obtain low toxin cultivar, molecular mechanism of storage protein bio-synthes 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 mopping & 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	:	For development of a variety of Paprika for Oleroresin extraction. The variety Kt P1-19 has been produced and distributed to commercial units for Oleroresin extraction and powder making.
	2	**Dr S. Joshi**		
	3	**Dr P. C. Thakur** Principal Scientists, IARI		
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**	:	For development of eco-friendly pest control of coconut and palm health care practices.
	2	**Dr. Thomas Biju Mathew**		
	3	**Dr. K. Saradamma** Kerala Agricultural University, Vellayani		
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.

YEAR	NAME		SUBJECT OF RESEARCH
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.
2006	**Dr. D. D. Patra** Scientist G & Head Agronomy and Soil Science, CIMAP, Lucknow	:	For the development of the scientific understanding of the N, 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- IHBT, 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.

YEAR	NAME		SUBJECT OF RESEARCH
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.
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 in basic and applied research on rice genetics and breeding.
2022	**Dr. G. Taru Sharma** National Institute of Animal Technology, Hyderabad	:	For her outstanding basic and applied contributions on buffalo reproduction. She has developed a novel, innovative and efficacious three-dimensional (3D) microenvironment model for extended in-vitro culture of buffalo preantral follicles, using gel synthetic surface matrix and micro encapsulation.
2023	**Dr. Kajal Chakraborty** Central Marine Fisheries Research Institute Kochi	:	For his pioneering research in the frontier area of bioactive molecule discovery from marine organisms as promising therapeutic agents against various diseases, food chemistry, aquatic food product technology and development of high-value products as dietary supplements and health management.

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 though 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. Satyawan Singh** **Shri Ramesh Chandra Nandi** Central Drug Research Institute, Lucknow	:	Medicinal chemistry, development of new econtraceptiv 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** Cental 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**	:	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).
	2	**Dr. Karumuru Mallikarajana Rao** Defence Research & Development Establishment, Gwalior		
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**	:	Development of toxoplasma detection kits for antibodies in toxoplasmosis diseases.
	2	**Dr. Girish Mahadeorao Bhopale** Hindustan Antibiotics Ltd, Pune		
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	:	Characterisation of HIV isolates and developments of Western Bolt for sero detection of HIV infection. Checkmite Soluneem based on natural products and antidotes for snake bites from chicken egg yolk.
	2	**Dr. (Mrs.) Surekha M. Zingde** Cancer Research Institute, Mumbai		
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 Vrati** 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, ICGEB, New Delhi	:	For development of Hepatitis B Vassine & diagnostickits.
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 habpl and its biological function in cellular signaling.
2010		**Prof. Arvind M. Lali** Prof. of Chemical Engg. & Head,	:	He has contributed extensively in the area of

YEAR		NAME		SUBJECT OF RESEARCH
		DBT-ICT Centre for Energy Biosciences, ICT, Mumbai		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 plyglutamine neurodegenerative disorders like Huntington's Disease (HD).
2013		**Dr. Rohit Srivastava** Associate Professor, Department of Biosciences and Bioenginering, 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. K. S. M. S. 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 neutral 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	1	**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).
	2	**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 anti-cancer, anti-parkinsonian and anti-tuberculosis drugs using molecular hybridisation technique.
2022		**Dr. T Govindaraju** Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru	:	For his innovative research, which cuts across the disciplines of chemistry, biology, and biomaterials science with a particular emphasis on the chemical biology of 'functional and disease amyloids', has

YEAR	NAME		SUBJECT OF RESEARCH
			resulted in groundbreaking inventions, and established new paradigms.
2023	**Dr. Atul Goel** CSIR- Central Drug Research Institute, Lucknow	:	For developing a new drug candidate CDRI-1500 from identification to Phase-1 human clinical trial for rapid healing of bone fractures.

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 careen, transformation of carene into transchrysanthermic 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 2	**Prof. A. R. Vasudev Murthy** **Prof. G. Suryan** Indian Institution of Science, Bangalore	:	Synthetic quartz, ferromagnetic garnets and silicon leading to production of silicon based materials such as silicon tetrachloride and ethyl silicate and electronic grade silicon.
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 2	**Dr. S. Sivaram** **Dr. M. Ravindranathan** Research Centre Indian Petrochemicals Corp. Ltd., Vadodara	:	Development of active Copper Catalysts for hydration of under acrylonitrile to acrylamine neutral conditions a useful organic monomer.
1988	1 2 3	**Dr. U. T. Bhalerao** **Dr. A. A. Khan** **Shri R. N. Parlikar** IICT, Hyderabad	:	Development of Process Technology of pesticides-Chlorpyriphos Monocrotophos, DDVP Butachior (Herbicide)
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 Chemcial 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 exidative 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, Alcrotan.
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 geolite 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 catalysit-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	:	He has significant contribution in the process development and recovery of nuclear materials of interest to DAE from ores, intermediates and waste streams.
	2.	**Dr. N. P. H. Padmanabhan** MGM Chair Professor, School of Minerals Indian Institute of Technology, Bhubaneswar	:	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	:	He has developed several of electrochemical energy storage systems which have been patented and some of them have been commercialized by companies in India.
	2.	**Dr. Darbha Srinivas** Chief Scientist & Professor AcSIR National Chemical Laboratory, Pune	:	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	:	For developing a novel enzymatic degumming process for rice bran oil production.
	2	**Prof. B. N. Thorat** Dept. of Chemical Engg. ICT, Mumbai	:	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	:	For developing technologies for manufacturing ultra-filtration membranes for drinking water purification.
	2	**Dr. A. V. R. Reddy** Senior Principal Scientist, CSIR- CSMCRI, Bhavnagar	:	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	:	For the development of CFD Simulation for design of chemical equipments which has been widely accepted by diverse range of chemical industry.
	2	**Dr. R. Natarajan** Director, Reprocessing Group, IGCAR, Kalpakkam	:	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. R. S. Somani**	:	Development of technology for the manufacture of Zeolite-A (detergent builder) from sodium aluminium liquor and from low grade Kutch Bauxite.
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.

YEAR		NAME		SUBJECT OF RESEARCH
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.
2019	1	**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.
	2	**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 CS sugars derived from Biomass, which is licensed to BASF, an European Chemical Giant.
2021	1	**Prof. T. Pradeep** Professor of Chemistry TM, Chennai	:	For his significant contribution to the discovery of advanced materials and phenomena to remove containments, 'especially pesticides and arsenic, from water, He is a pioneer in nano-technology for drinking water purification.
	2	**Dr. P. Thanikalvelan** Senior Principal Scientist CCSIR-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.
2022		**Dr. Shirish Sonawane** National Institute of Technology, Warangal	:	For his development of a novel cavitation-based processes for pigment grade nano-iron oxide, nano-calcium carbonate and nano-ceramic membrane which has been transferred to a company in Ahmedabad and are in commercial production.
2023		**Dr. Ashwin Patwardhan** Institute of Chemical Technology, Mumbai	:	For his significant contribution to the process of liquid-liquid extraction of active materials from phosphoric acid.

AWARD WINNERS FOR ELECTRICAL & ELECTRONIC SCIENCES & TECHNOLOGY

YEAR	NAME		SUBJECT OF RESEARCH
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. Ramamoorty** 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 Ganan 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

1976	1 2	**Shri R. V. Sitaram** Head, Microwave Engineering Division **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 2 3 4 5 6	**Dr. J. Das** **Dr. M. N. Faruqui** **Dr. P. K. Chatterjee** **Dr. C. V. Chakravarty** **Shri T. S. Lamba** **Dr. S. Rakshit** Indian Institute of Technology, Kharagpur	:	Development of Digital Communication Systems and Speech processing.
1978	1 2 3	**Dr. V. Narayan Rao** **Shri C.R. Chakravarty** **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 2	**Shri T. V. Ramamurti** **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 2 3 4	**Dr. B. D. Pradhan** **Dr. S. R. Borkar** **Shri N. A. Gandhi** **Shri S. A. Mhatre** Tata Electronics Companies, Bombay	:	Development and production of advance defence electronic equipment in the field of radar systems.
1982	1 2	**Dr. Srinivasan** NPOL, (DR&D) Cochin **Dr. A. Paulraj** Indian Institute of Technology, Madras	:	Oceanographic Instrumentation Underwater detection techniques and sonar systems.
1983	1 2	**Dr. R. P. Shenoy** **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**		equipment, Automatic Electronic Switch.
	4	**Shri R. L. Verma** Electronics & Radar Development Establishment High Grounds, Bangalore		
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**	:	Design, development and production of an Automatic Data Handling System (ADHS) for strategic air defence of India.
	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		
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**	:	For the design & development of Airborne Sonic Processor System & Modular Fibre Optic Data Bus, NPOL, Cochin.
	2	**Dr. G. Devarajan**		
	3	**Shri S. Kedarnath Shenoy**		
1991		**mt. Lakshmi G. Menon**S 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**	:	Development of Ka-bend Wave component and Ferrite phase shifter for defence organisations.
	2	**Prof. Shiban K. Koul** IIT, New Delhi		

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, Tiruvanathapuram	:	Development of Automatic Launch Processing System (ALPS) for the PSLV mission of ISRO.
1998		**Shri A. S. Kiran Kumar** Space Application Centre, Ahemdabad	:	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.

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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. Rangarajanl** 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**	:	For development of smart cane for visually

YEAR		NAME		SUBJECT OF RESEARCH
		Prof. P. V. Madhusudhan Rao **Prof. Kolin Paul of IIT, New Delhi &** **Shri Dipendra Manocha** National Assn for the Blind, New Delhi		challenged persons. It consists of ultrasonic ranger, vibrator and microcontroller having a range of 3 meters.
	2	**Dr. K. Radhakrishnan** Director, NRSA (ISRO), Hyderabad	:	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 11 b/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	:	For development of Shakti Series of Processors – a culmination of various processor research projects.

YEAR		NAME		SUBJECT OF RESEARCH
		Engineering, Indian Institute of Technology Madras, Chennai		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.
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	1	**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, I-IV and TMD transistors.
	2	**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	1	**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.
	2	**Dr. Kannan Lakshminarayan** Professor, Dept. of Engineering Design ITM, Chennai	:	For successfully designing and developing high Efficiency Traction Motors for electrical vehicles and its gainful commercialisation.
2022		No Award		
2023		No Award		

AWARD WINNERS FOR ENVIORMENTAL SCIENCES & TECHNOLOGY

YEAR	NAME		SUBJECT OF RESEARCH
1999	**Prof. A. K. Sharma** Calcutta University, Kolkata	:	For contribution to cell and chromosome research with particular reference to plant sciences and evolutionary biology, biodiversity and their relationship to environment.
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 Goverment 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 and management.
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 geoscienes.
2010	**Prof. C. K. Varshney** Professor Emeritus (JNU), New Delhi	:	He has been researching in the field of environmental science for over five decades - especially 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	:	He has contributed extensively in a variety of areas related to environmental science and technology, air and water pollution, solid waste management, environment modeling, environment impact and risk assessment and so on.
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.

YEAR		NAME		SUBJECT OF RESEARCH
2015		**Prof. Deepak Kantawala** Independent Consultant, Mumbai	:	For his contribution in the area of environment protection ingeneral and wastewater treatment in particularfor various industry subsectors, such as pharmaceuticals and pesticides, common effluent treatment plants for industrial estates, sewage treatment plants and river basin surveys.
2016		**Prof. Vinod Tare** Department of Civil Engineering, 116 Western Laboratory, IIT Kanpur	:	For his 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-IICT), 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, CSIR-NIO, 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.
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	1	**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 tollet and simutaneously produce electricity for illuminating toilet and premises at night and treated water reused back to maintain cleanliness.
	2	**Dr. Nitin Kumar Labhasetwar** Chief Scientist & Head CCSIR-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 contribution to the work of UN-IPCC– a joint winner of the Nobel Peace Prize, 2007.
2022		**Dr. Gangagni Rao Anupoju** CSIR- Indian Institute of Chemical Technology Hyderabad	:	For his significant contribution to both basic and applied research for waste to energy and better air for the welfare of the society. He has developed novel high-rate anaerobic wastewater treatment processes for organic liquid effluents and executed full scale "BIOFILTER" for the purification of waste and off gases emanating from industry.
2023		**Prof. Ligy Philip** Indian Institute of Technology, Chennai	:	For her contribution to both basic and applied research, particularly on water treatment, solid waste management and decontamination.

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 'anuskara system' (Paninian Grammar framework for natural language processing, NLP) where translation of information from regional languges such asTelugu, 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 ©, 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 Chennai Computing, Internet of Things (I0T) 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 Sr Director (Scientist) algorithm for Universal Health Ministry of Electronics & IT, Identification, Java Computer Software New Delhi and Brain Computer Interface-based 'Computer Control Applications, using Eye Blinks detected from Electro Encepha lo Gram (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.
2022	**Dr. Rajendra Ramchandra Joshi** HPC-Medical and Bioinformatics Applications Group, C-DAC, Pune	:	For his significant contribution in the use of high-performance parallel computing for biological research. His research contribution includes development of Integrated Computing Environment for Next Generation Biology using Cloud based HPC and Big Data.
2023	**Prof. Dr Rabinder Henry** Pralhad P.Chhabria Research Center, Pune	:	For his significant contribution in Microware Photonics, Medical systems engineering, Embedded Robotics, Cognitive Technology.

AWARD WINNERS FOR MATERIAL 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, Metallurlgy 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 and development of material for Defence Metallurgical protection against high-energy projectiles.
1981	1 2 3 4	**Dr. T. Mukherjee** **Shri A. N. Mitra** **Shri M. D. Maheshwari** **Shri S. C. Mohanthy** Tata Iron & Steel Co. Ltd., Jamshedpur	:	Developments and contribution to steel technology and introducing new grades of high strength low alloy steels.
1982	1 2 3 4	**Dr. V. Ramaswamy** **Shri S. R. Mediratta** **Dr. S. M. Aeron** **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 2	**Dr. P. Rama Rao** **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**	:	He has made sustained contributions over the years to the field of non-destructive testing, quality control and also development materials and their fabrication techniques in regard to materials used for atomic energy.
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 (FBTR).
1991	1 2 3	**Shri Gadamsetty Venkateswarlu** **Shri B. Nageswara Rao** **Dr. V. Chandrasekaran**	:	For development of technology for production of high-energy Samarium-Cobalt permanent magnets.

YEAR		NAME		SUBJECT OF RESEARCH
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.
1993		**Dr. R. M. V. G. Krishna Rao** Head, FRP, Pilot Plant, National Aerospace Laboratories (NAL), Bangalore	:	He with his other colleagues has done the research work on the development of "Porous Fibre Reinforced Plastics (FRP) Tubes for water desalination Plant". He was responsible for indigenous development of a composite Scaled Model of LCA HIGH SPEED AIR INTAKE.
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. He has also developed simulation package for oxidation and impurity diffusion in silicon.
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, Ambernath	:	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 using specially designed miniature heat treatment set-up.
	2	**Dr. G K Dey** BARC, Mumbai	:	For development of melt spinning and planar flow casting technique for metallic glasses.

YEAR		NAME		SUBJECT OF RESEARCH
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 aricraft 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 and the use of molecular modeling for process developments.
2008		**Dr. Guntupalli, Malakondaiah** 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.
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 th the development of a process flow sheet for the recovery of uranium from low grade ores that has opened up an entirely new area of uranium exploration and processing.
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 including JSW- Ispat, JSPL, RINL, Hospet Steels, MUSCO and JSW has led to innovative tundish designs which are aimed at reducing skull losses and improving steel melt cleanliness.
2011	1	**Dr. Srinivasan Srikhanth** 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 for jointly with the production of commercial grade ferrosilicon from copper slag.
	2	**Dr. Shrikant Vishwanath Joshi** Additional Director, ARCI, Hyderabad	:	For his outstanding contributions in establishing a comprehensive high power laser centre for materials processing in the country and developing wide ranging applications of laser hardening, welding, cutting and drilling operations for the fabrication of critical components.
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 the 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.
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.

YEAR		NAME		SUBJECT OF RESEARCH
2016		**Dr. S. C. Sharma** Scientist, Deputy Director, Vikram Sarabhai Space Centre, ISRO, Trivandrum	:	Major materials and technology development programme for space applications.
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. Ashim Kumar Mukhopadhyay** Outstanding Scientist & 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
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.
2019	1	**Dr. B. B. Kale** Scientist G, Director General, Nanocrystalline Materials Centre for Materials for Electronics Technology (C-MET), Govt. of India	:	For development of indigenous material and process for optical fibre grade SiCl4 (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
	2	**Dr. Pritam Deb** Professor, Dept. of Physics Tezpur University, Tezpur	:	For his pioneering contribution in the field of nano technology, biomedical molecular imaging, using nanoprobes, 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 Award		
2022		**Dr. Dhruv Kumar Singh** Bhabha Atomic Research Centre Mumbai	:	For his significant contribution by developing scalable processes for the separation of several rare earth compounds and the production of rare earth magnet alloys leading to the indigenous production of these metals and alloys at Indian Rare Earths Ltd.
2023		**Prof. Kamal K Kar** Indian Institute of Technology Kanpur	:	For his research and manufacturing more than 40 types of high-quality carbon-nanotubes/graphene, multi-doped ferrite/titania-based nanostructured composites for water purification, highly efficient Pb-oxide and graphene nano-inclusions for thermoelectric applications and rubberized road wheel of the MBT-Arjuna Tank.

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 H2/N2 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**		
	2	**Prof. S. N. V. Rao**	:	Analytical and experimental techniques in the field Aero- Elasticity, Aerodynamics, Oscillation of structures, Buckling and Random vibrations.
	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 duly slant bed CNC Turning Centre STC-25".
	2	**Shri P. Venkatraman**		
	3	**Shri E. K. Sasidharan** Hindustan Machine Tools Ltd., Kalamsary		
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 2	**Shri S. B. Bhagat** **Shri Arun Kumar Roy**	:	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.
1992		**Shri S. B. Bhoje** Reactor Group Indira Gandhi Centre for Automic 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 2	**Shri P. Muthukumaraswamy** Research Associate **Dr. S. S. Ramasamy** The South India Textile Research Association. Coimbatore	:	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.
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 Auxiliary 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 2 3	**Shri Ratan Kumar Sinha** **Shri B. B. Rupani** **Shri B.S.V.G. Sharma** BARC, Mumbai	:	For various sensors for inspection, rehabilitation camera based alignment system and life management of pressure tubes of pressurised heavy water reactor.
2001		**Shri P. M. Kantak** Air India, Mumbai	:	For development of static balancing method for air craft rotor.
2002	1 2 3	**Shri R. S. Yadav** **Shri A. B. Mukherjee** BARC, Mumbai **Shri C. N. Ravi** BHEL, Tiruchy	:	For development of Pipe-in-Pipe nozzle, large size sealing arrangement in pressure vessel and heat exchanger for critical equipment in compact reactor.
2003		**Mr. Subhash Chander Chetal** Indira Gandhi Centre for A R, Kalpakkam	:	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 (HVFAC) 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 Atomatic 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-e bio-fluid mechanics and electrohydrodynamics.
2022	**Prof. Dilip Kumar Pratihar** Indian Institute of Technology Kharagpur	:	For his contributions in identifying the root causes of failure of the Gas Turbine Unit and Pigtail of catalyst tube. He has contributed significantly in the development of fuzzy logic-based data mining tools. These developments have immensely benefitted the Industry and Society.
2023	**Dr. Nagahanumaiah** Computers Management & Information Technology, Bangalore	:	For his pioneering initiatives in technology marketing and incubation initiatives, elevating the Technology Readiness Level (TRL) of 65 potential technologies slated for transfer.

SMT. CHANDABEN MOHANBAI 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, Banglore	:	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 form 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 endorhizospere 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 vegitables.
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 Surolia** 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.
2019	**Dr. Sudha Rao** Co-founder & Executive Director Genotypic Technology Pvt Ltd Bengaluru	:	For establishing world-class Genomics Facilities, inculding Microarray and Next Generation Sequencing Facilities, creating the firs 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.

YEAR		NAME		SUBJECT OF RESEARCH
2019	2	**Dr. Sadhana Rayalu** Chief Scientist & Head Environmental Materials Division CCSIR-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** Secretany, 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 healtheasre, biomaterials, medical devices and tissue engineering, as also to he Silk-based Materials Technology, which has been licensed to a startup, the first one globally, to conduct clinical trials for use of Sik in bone regeneration.
2022		**Ms Geethanjali Radhakrishnan** Founder, CEO and MD Adiuvo Diagnostics	:	As a dynamic and innovative entrepreneur and a ground breaking technology which has various applications, ranging from detecting pathogens to evaluating skill parameters and diagnosing cancer. She has pioneered revolutionary Imaging device which is 100 times faster than traditional tests in terms of detection.
2023		**Dr Prathma S. Mainkar** CSIR- Central Drug Research Institute Hyderabad	:	For developing a cost-effective Process of Favipiravir (Developed drug for COVID-19 treatment). The process has been commercialized by industry which has helped in bringing down the cost of drug.

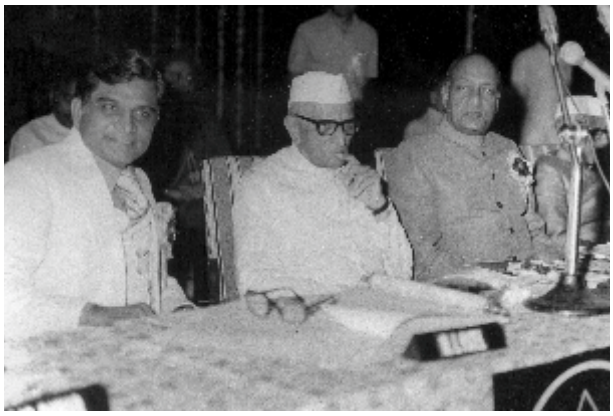
Dr. Mohan I. Patel VASVIK Award for Leadership in Leveraging Scientific and Technological Research for Economical Growth

YEAR	NAME		SUBJECT OF RESEARCH
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	:	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 futher technological development with indigenous research, especially in the field of Automotive Engineering.
2024	**Dr Pramod Chaudhari** Executive Chairman Praj Industries Ltd., Pune	:	For successfully developing technology for conversion of Cellulosic Biomass to 2nd Generation Renewable Fuels, Biogas and Renewable Chemicals & Materials. Praj is the only Indian Corporate to launch India's first-of-its-kind Integrated Bio-refinery Demo and now executing three commercial plants for Indian OMCs. Praj has also set up first of its kind integrated demo plant of Compressed Biogas (CBG).

AWARD FUNCTIONS - PHOTO LIBRARY

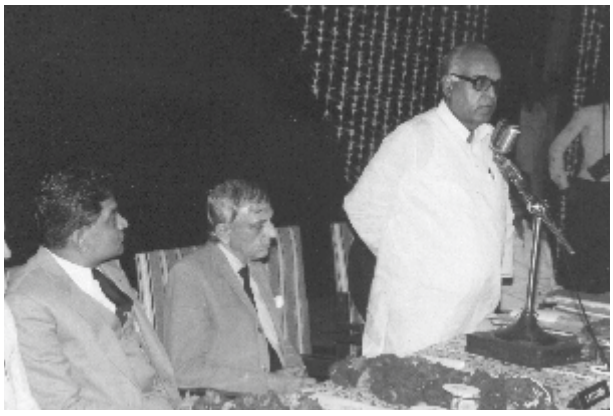
Shri T. A. Pai, Dr. M. I. Patel, Prof. M. G. K. Menon and Shri Rajani Patel (1976)

Dr. M. I. Patel, Shri Bhailalbhai Contractor, Shri H. M. Patel, Prof. M. G. K. Menon and Dr. Vasadrajau (1977)



Dr. M. I. Patel, Shri Morarji Desai and Shri Ramkrishna Bajaj (1978)

Dr. M. I. Patel, Shri M. Hidayatullah and Shri Jaikrishna Harivallabhdas (1979)



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

Dr. Shankar Dayal Sharma being received by Dr. M .I. Patel (1982-83-84)

Shri Shivraj Patil in the centre with Dr. M. I. Patel
and Prof. M. G. K. Menon (1989-90-91)

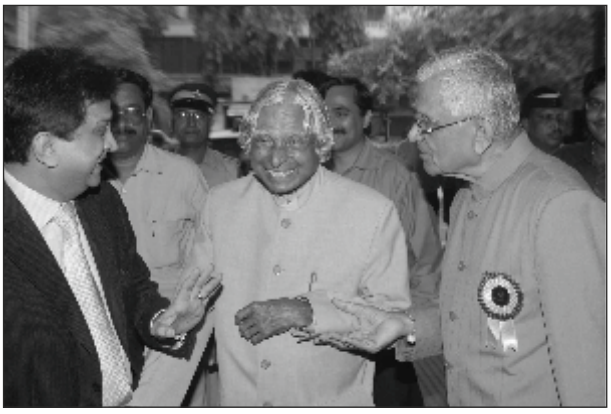
Prof. M. M. Sharma, Dr. M.I. Patel, Dr. Manmohan Singh,
Prof. M.G.K. Menon, Shri Amrut Modi,
Shri. Ramanand Sagar (1992-1993)

Dr. M.I. Patel, Dr. Manmohan Singh (1992-1993)

Dr. M. I. Patel with The Rt. Hon. John Prescott (1999-2000)

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

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



Shri. Nayan Patel, Dr. A.P.J. Abdul Kalam, Dr. M.I. Patel (2003-04-05)

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

Smt. Parul Patel, Smt. Nisha Sagar, Shri. Nayan Patel, Shri Narendra Modi, Dr. M.I.Patel, Shri. Kartik Patel, Shri Surendrabhai Patel (2006-07-08)

Prof. M. M. Sharma, Dr. M. I. Patel, Shri Niraj Bajaj and Dr. R. Mashelkar (2009-10-11)

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

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

**Shri Suresh Prabhu addressing the gathering.
On the dias (L to R): Shri Nayan Patel, Shri Pankaj Patel, Dr. M.I. Patel, Prof. M.M. Sharma & Principal Ms. Deepa Sharma (2015-16)**

Shri Suresh Prabhu lighting the lamp (2015-16)

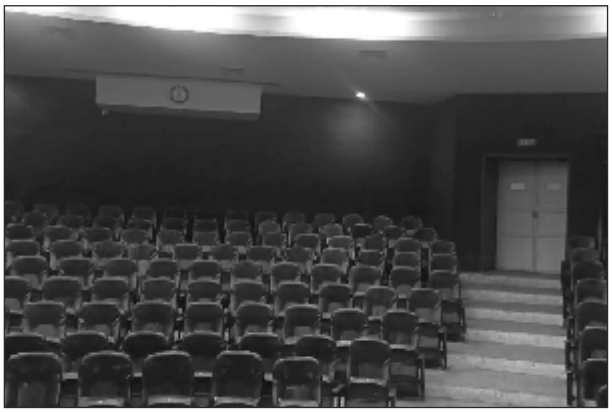
Prof. M.M. Sharma, Dr. M.I.Patel, Dr. Anil Kakodkar & Shri. Madhukar Parekh (2017-18)

Dr. M.I.Patel addressing the gathering. On the dais (from L to R): Shri Nayan Patel, Shri Shrikant Badve, Shri. Amrishbhai Patel, Prof. M.M. Sharma & Principal Smt. Deepa Sharma (2019-2020-2021)

Lighting the lamp (2019-2020-2021)

Kum. Aanya Sagar, Shri Shrikant Badve, Shri. Amrishbhai Patel, Kum. Meira Patel, Smt. Saloni Patel (2019-2020-2021)

VASVIK Research Wing
Bombay College of Pharmacy, Mumbai



VASVIK Auditorium
The Institution of Engineers, Vadodara

VASVIK Auditorium
The Institution of Engineers, Ahmedabad

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 ₹ 2,51,000 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 Sciences & Technology
viii. Mechanical & Structural Sciences & Technology

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.

50 Years ANNIVERSARY

www.vasvik.org

संशोधनेन संवृद्धिः

APPLICATIONS AND NOMINATIONS FOR VASVIK AWARDS 2024 & 2025

Awards will be 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
(e) Information & Communication Technology
(f) Material Sciences & Technology
(g) Mechanical & Structural Sciences & Technology
(h) 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 catagories carry a cash prize of ₹ 2,51,000 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 ₹ 2,51,000, 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 2024 & 2025 may please be submitted in prescribed format before 30-06-2025

for Vividhlaxi Audyogic Samshodhan Vikas Kendra
Nayan Patel
Director

VIVIDHLAXI AUDYOGIK SAMSHODHAN VIKAS KENDRA
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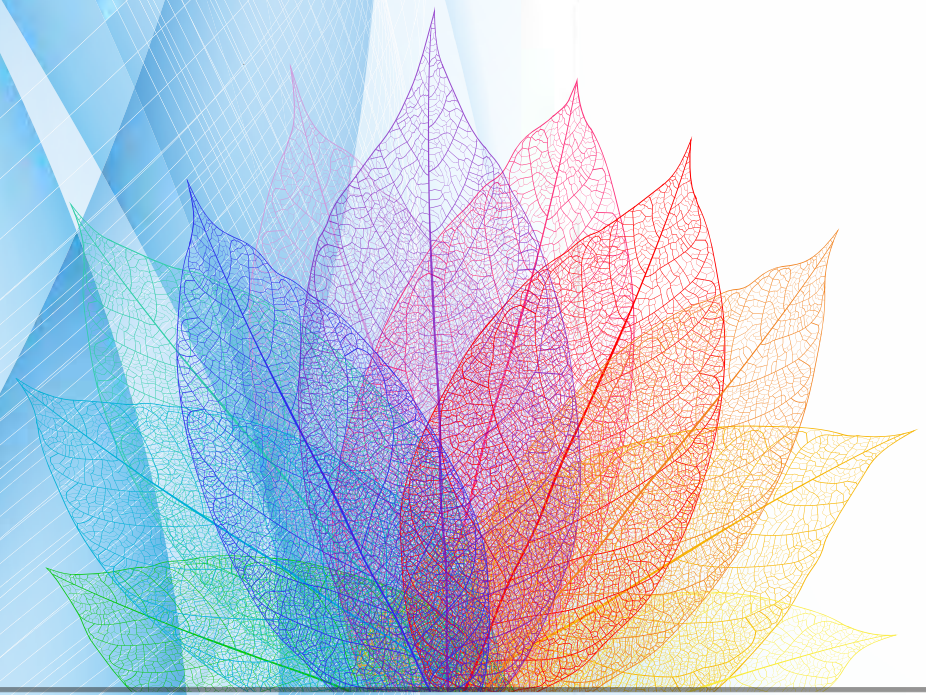
www.vasvik.org

VASVIK

संशोधनेन संवृद्धिः

SCIENCE & TECHNOLOGY
ENGINE OF **GROWTH** FOR INDIA



VIVIDHLAXI AUDYOGIK SAMSHODHAN VIKAS KENDRA

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