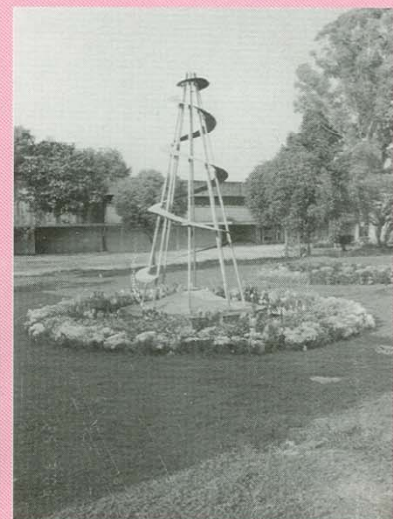
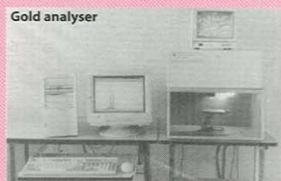
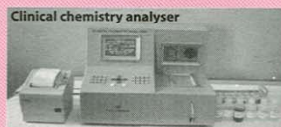


Information on these pages pertains to contract research programmes, papers published, patents filed, talks/lectures delivered, networked programmes of CSIR, staff on roll, in-house training rendered and scientists honoured at CSIO, Chandigarh during the period of 2002-03



## CSIO BAGS PRESTIGIOUS CSIR TECHNOLOGY AWARD

Shri Atal Behari Vajpayee, Hon'ble Prime Minister of India, presented the Engineering Technology Award to CSIO, Chandigarh for developing a Head Up Display for Light Combat Aircraft, during a function organised on September 26, 2002 at Vigyan Bhawan, New



Delhi. Dr RP Bajpai, Director, CSIO received this award on behalf of the team comprising of Shri VML Narasimham, Dr MSN Srinivas, Dr KR Sarma, Dr S Mohan, Dr RP Bajpai, Shri PK Jain and Shri BD Sharma.

Other team members included : Shri PP Bajpai, Shri Vinay Kumar, Shri Suresh Kumar, Shri Sanjay Sharma, Shri Vinod Karar, Shri Vipin Kumar, Shri PK Garg, Shri RC Takkar, Shri Hardeep Singh of CSIO and Shri K Narasimha Rao and Shri M Adinarayan Murthy of IISc, Bangalore. They were honoured on the occasion of CSIO Foundation Day on October 30, 2002.



I am pleased to present the Annual Report of the Institute for the year 2002-03 on the occasion of CSIO's Foundation Day. The preceding year has been a very eventful year with the Institute being more buoyant than ever.

The year was marked by CSIO demonstrating its creditable success in the development of Head Up Display (HUD) System for the Light Combat Aircraft. It was totally a CSIO technology and has been acknowledged as much superior compared to similar systems available elsewhere in the world. Technologically this has put CSIO on the forefront and built the confidence of the industry in indigenous know-hows. It was a matter of great pride that this development enabled the Institute to bag the prestigious CSIR Technology Award of the Year in Engineering Technology. The award was presented to Director, CSIO by Shri Atal Bihari Vajpayee, Hon'ble Prime Minister of India and President CSIR, on the occasion of CSIR Diamond Jubilee Celebration on September 26, 2002 at Vigyan Bhavan, New Delhi.

Successful development of HUD gave CSIO a big leap forward as the Institute was flooded with proposals to take up development of more sophisticated versions viz Helmet Mounted Display besides offers for developing HUDs for Intermediate Jet Trainer and other combat aircrafts.

The year was also marked by several scientists of this Institute receiving awards for their singular accomplishments.

During the year, the laboratory was very fortunate to have been graced by the visits of a number of very important dignitaries. Prof. Murli Manohar Joshi, Hon'ble Union Minister for HRD and Science & Technology and Vice President, CSIR visited CSIO on 28<sup>th</sup> January, 2003. Prof. Joshi laid the foundation stone of new ISTC building, inaugurated the Seismological Observatory and Biomolecular Electronics & Nanotechnology lab.

Prof. Joshi lauded CSIO's initiatives in new areas. Informal interaction that Prof. Joshi had with the scientists, generated lot of excitement among the scientists and infused them with renewed vigour to take up more challenging tasks. Prof. Joshi was also witness to the signing of the agreement for transfer of technology of HUD by CSIO to Bharat Electronics Ltd., the cost of the technology being Rs. 1.50 crores which is the highest ever in the history of CSIO.

The Parliamentary Standing Committee on Science & Technology, Environment and Forests comprising 16 Hon'ble Members of Parliament, led by Shri Ramachandraiah visited CSIO on 7<sup>th</sup> June, 2002. The most honoured and enlightened guests interacted with the scientists and were astounded to see the state-of-art developments made by CSIO for the benefit of different sectors of the economy.

Dr. D.N. Tewari, Member, Planning Commission and CSIR Society, visited CSIO in November, 2002 and unfolded new initiatives of the Government in developing newer areas and the role that CSIO could play. Dr. Tewari's visit set the ball rolling for CSIO to launch a new initiative in developing plant and machinery for processing of Indian bamboo.

On the R&D front, CSIO's efforts led to its participation in four networked programmes launched by CSIR/Planning Commission. These programmes were: Electronics for Societal Purposes where CSIO is the nodal lab, Development of Key Technologies for Photonics and Opto-Electronics, Custom Tailored Special Materials and High Science & Technology for National Aerospace Programmes.

Other than these programmes, CSIO bagged over 20 new projects while another 20 were successfully concluded during the year. Notable among the new programmes started during the year were: Fiber Bragg Gratings and Long Period Gratings for Health Monitoring of Aerospace & Civil Structures, National Facility for R&D in Aspheric based Optical and Electro-Optical Systems, DNA Computers and their Applications in Biomolecular Electronics, Bio-MEMS based Micro clinical Diagnostic Kit for Tuberculosis and Genome Studies Peripherals and Oscillation Monitoring System for Railway Safety Applications.

Among the Projects successfully concluded were: Instrumentation Systems for Condition Monitoring of Critical Rotary Machines for Generation of Electric Power. The system developed in collaboration with IIT New Delhi, IIT Kanpur and BHEL Corporate R & D Centre was successfully installed at GGSS Thermal Power Plant under PSEB, 24 bit technology based Seismic Data Acquisition System, Digital Automatic Moisture Computer, Human Breath Sensor for detection of alcohol, Clinical Chemistry Analyzer for diagnostic applications, Off flavour Detection System for edible oils, Fast Optical Pyrometer, etc etc.

In order to share its expertise in servicing diverse variety of scientific and medical instruments, CSIO recently undertook the assignment for the repair of scientific instruments in Myanmar. A 3-member expert team from Chandigarh & Chennai Centres of CSIO visited Myanmar during May-June, 2002 for about six weeks and repaired 84 instruments valued around Rs.1.00 crore in several S&T departments at Yangon. Besides improving bilateral relations with neighbouring countries, the objective of the entire exercise was to help the S&T organisations in Myanmar in their scientific and technological pursuits and to make Myanmar self-sufficient so far as repair and maintenance of scientific and medical instruments is concerned.

Towards the end of the previous year, the Department of Science & Technology (DST), Government of India had launched a major initiative of organizing training programmes for hospital technicians on repair & maintenance of medical instruments. The step had been initiated to circumvent the problem of medical instruments' maintenance from becoming perennial. This responsibility had been given to CSIO.

The year saw this activity taking a big leap as around 25 programmes conducted by CSIO all over the country winning accolades. DST now proposes to organize such programmes in 541 districts, all over the country besides the metros.

The technology based Entrepreneurship Development Programme on Repair & Maintenance of Analytical Equipments sponsored by DST, New Delhi was successfully carried out by CSIO's Chennai Centre, besides other activities in energy instrumentation.

Indo-Swiss Training Centre established under the patronage of Swiss Foundation for Technical Assistance and being run under the aegis of CSIO enjoys very good reputation by the industry both in India and abroad, R&D Institutions and custodians of technical education. Besides undertaking its usual hi-quality training programmes, the Centre introduced short-term courses in CNC Milling, Precision Turning and design of Press Tools during the year. While disseminating its expertise to the industry personnel, its initiative is ultimately aimed at bringing the Centre and industry closer, leading to more business in the long run.

In the past, the ISTC faculty has been assisting the CSIO scientists in execution of the R&D projects, but during the year, the Centre independently took up a few R&D programmes through its own initiative. This is bound to improve the quality of training further.

The Institute has ultra modern infrastructural facilities like: aspherics generation & polishing, microelectronics, microprocessor controlled thin film coating, trace elemental analysis, computerized numerically controlled machines alongwith CAD/CAM, packaging and mould design. I am particularly very happy to report that CSIO has been successfully attracting the industry in solving the challenging problems faced by them in specific areas and providing these facilities wherever needed.

Dedicated and painstaking efforts put in by the CSIO scientists and other staff enabled this Institute to cross the magic figure of Rs.1000 lakhs of External Cash Flow during 2002-03. This happened for the first time in the history of CSIO and is certainly a singular achievement.

Five technologies were transferred during the year while another five were in the process of being transferred. With vast improvement in the quality of research & development and the realisation among the scientists about the imperative need to protect the Intellectual Property Rights led to a significant increase in the patent filing process. The Institute filed 16 patents this year at national and international level in the areas of Biomolecular Electronics, Fiber Optics, Energy Monitoring, Opto Electronics, Medical Electronics and Metallurgy. The scientists of the Institute published 23 research papers in reputed journals, apart from presenting 52 research papers in conferences/seminars and delivering 23 invited lectures in various organizations, academic institutions/universities. All these years, the intellectual level of CSIO has been going up which will soon get reflected in the Institute making significant breakthroughs in contemporary technologies.

Several users, industries, academic & research institutions like SASE, TBRL, ICAR, HAL, IITs, RDSO, CAT, ADE, ADA, and government agencies like Agriculture, Rural Development, Social Justice and Empowerment, Science & Technology, Information Technology, Bio-Technology, Environment & Forestry reposed full confidence in our capabilities and the acquired knowledgebase by sponsoring various R&D programmes worth several crores of rupees. We certainly feel

proud and deem it to be our privilege and honour to accept the challenging and daunting tasks.

Another hallmark in the activities of CSIO has been that of maintaining quality systems as per the normative standards of ISO-9002: 1994 in key areas of fabricating mechanical components of assemblies, systems and sub-systems for scientific instruments, calibration services and technical training in the field of instrument technology, die & mould making, mechatronics and industrial automation within the scope of this

certification. CSIO is heading towards the implementation of ISO-9001 : 2000 during the coming years.

Prof. Ashok Sahni, Dean of University Instruction, Panjab University formally launched the CSIO website : [www.csio.org](http://www.csio.org) on the occasion of National Science Day.

It is our privilege to express our profound gratitude to Dr RA Mashelkar, FRS, Director General CSIR, and Shri Sudhir Kumar, IAS, Joint Secretary, CSIR and the team at CSIR Headquarters for their constant help, encouragement and support. This enabled the laboratory to rejuvenate, acquire new glory and hence contribute in the task of nation building.

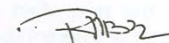
No words are adequate enough to express our gratefulness to Dr KG Narayanan, Hon'ble Chairman and Members of the Research Council of CSIO for their direction, guidance and encouragement in carrying out our R&D programmes during the year.

The achievements made by the Institute could not have been possible without the contribution, pragmatic attitude and support provided by CSIO's yard staff. This has certainly facilitated CSIO to establish a very congenial environment for undertaking hi-tech research. With the collegial system of management being followed by the Institute, the scientist-staff relations continued to be more than cordial. Today, I am proud to say that CSIO is a well integrated team of dedicated scientists and staff, full of motivation and zeal to give their best to the Institute.

The Institute too, is committed to continue with its efforts to achieve excellence in R&D in niche areas of instrumentation and is poised to enhance its interaction with industry, apart from undertaking contract research programmes and training activities of societal relevance. It is gratifying to record that the period 2002-03 has been the most eventful in the history of CSIO as the Institute succeeded in achieving high performance levels.

I express my grateful appreciation to all those who made it possible.

October 30, 2003

  
(R.P. Bajpai)  
Director

S. No	Title of the Project	Funding Agency	Project Investigator
<b>Agri-Electronic Instrumentation</b>			
1.	Instrument for Evaluation of Proteins in Soyabean, Oil Cakes & Other Foods	TMOP&M, New Delhi	SS Randhawa
2.	Digital Moisture Probe	Ministry of Consumer Affairs, Food & Public Distribution, New Delhi	AK Ganju
3.	Popularisation of Digital Aflatoxin Meter	TMOP&M, New Delhi	AK Ganju
4.	Popularisation of Technologies Developed under TMOP&M Programme: Portable Kits and Instruments for Edible Oils & Detection of Pollutants	TMOP&M, New Delhi	ML Singla
5.	Portable Instrument or the for the Determination of Gossypol in Cottonseed Deoiled Cake	TMOP&M, New Delhi	ML Singla
6.	Electronic Gadget for Bird Scare	ICAR, New Delhi	VP Giridhar
7.	Laser Land Leveller	ICAR, New Delhi	RK Jain
8.	Automated Argemone Concentration M. System	TMOP&M, New Delhi	Dial Singh
9.	Popularisation of Technology Developed under TMOP&M Programme - Digital Cereal/Grain Analyser	TMOP&M, New Delhi	VP Giridhar
<b>Analytical Instrumentation</b>			
10.	Upgradation of Gold Analyser	(In-house Project)	RR Dongaonkar
<b>Environmental Monitoring Instrumentation</b>			
11.	Real Time Sound Analyser	DST, New Delhi	Basudeo Prasad
12.	Microcontroller based Ozone Monitor	Min. of Environ. & Forests, New Delhi	Basudeo Prasad
13.	Microcontroller based Coefficient of Haze (CoH) and Dust Mass Monitor	Min. of Environ. & Forests, New Delhi	Amod Kumar
<b>Instrumentation for Energy Management</b>			
14.	On-line Energy Monitoring & Control System and its installation in an Industry	DST, New Delhi	RK Mohan Rao
15.	Consultancy Services on Energy Management Systems	German Technical Cooperation (GTZ)-IGEEP, New Delhi	RK Mohan Rao
16.	Design, Supply, Installation, Commiss. & Proving the Energy Saving Capability of Energy Management System	1. German Technical Cooperation (GTZ)-IGEEP, New Delhi 2. Sun Paper Mill Ltd. (SPM) Chennai	RK Mohan Rao
<b>Instrumentation for Geo-Science &amp; Disaster Mitigation</b>			
17.	Fabrication of 2-Units of 16-bit Seismic Recorder	DST, New Delhi	MA Shamshi
18.	Advanced Technology based Strong Motion Recorder - Dev. of Accelerometer	DST, New Delhi	BK Sharma
19.	Study of Seismicity in & around Chandigarh by Establishing a Network of Three BB Seismographs	DST, New Delhi	MA Shamshi
20.	Analog Seismic Recorder (4 Nos.) with Accessories	CWPRS, Pune	MA Shamshi
21.	Development & Fabrication of Infra-Red Technique based Snow Surface Temperature Sensing Probe (11 Nos.) with Accessories	SASE, Chandigarh	MA Shamshi
22.	Dev. & Supply of Portable Analog Seismograph with Accessories	IIT, Kanpur	MA Shamshi
23.	Oscillation Monitoring System for Railway Vehicles	RDSO, Lucknow	SK Mittal
<b>Instrumentation for Strategic and Defence Applications</b>			
24.	Dev. of Head-Up Display (HUD) for LCA - DRISHTI	ADE, Bangalore	PK Jain
25.	35mm Mini Panoramic Camera - FOCUS	ADE, Bangalore	PK Jain
26.	Fire Safety Sensors for LCA (Phase-IA & II)	ADA, Bangalore	ML Singla
27.	Non-Linear Junction Detector	DIT, New Delhi	NK Sharma
28.	Velocity Panel for the Small Caliber Projectiles	DIT, New Delhi	RC Kalonia
29.	Development of Electronic Stethoscope	DIT, New Delhi	NK Sharma
30.	Design & Dev. of Fiber Optics based Fire Detection & Warning System for Aircraft	AR & DB, New Delhi	JK Chhabra
31.	Relay Lens Systems	ADE, Bangalore	PK Jain
32.	Design & Dev. of Relay Lens 2.3X	ADE, Bangalore	PK Jain
33.	Design, Development & Supply of Head Up Display (HUD) for LCA	ADA, Bangalore	PK Jain
34.	Design, Development & Supply of Improved Collimating Optics for Head Up Display for LCA	ADA, Bangalore	PP Bajpai
35.	Molecular Beam Epitaxy (MBE) System (Jointly by CAT & CSIO)	CAT, Indore	Nathai Ram
36.	Laser based Flash Shadow Photographic System for Terminal Studies of Small Arms Ammunitions (SAA)	ARMREB, New Delhi	Gautam Mitra
37.	Dev. of Fly-By-Light Tail Rotor Control System for Advanced Light Helicopter (ALH)	HAL, Bangalore	JK Chhabra
38.	Feasibility Study for Development of Head Up Display for Intermediate	HAL, Bangalore Jet Trainer Aircraft	PK Jain

S. No	Title of the Project	Funding Agency	Project Investigator
39.	Design & Dev. of Relay Lens	ADE, Bangalore	PP Bajpai
<b>Medical Instrumentation</b>			
40.	Higher Energy (15 MeV) Medical Linac	DIT, New Delhi	PS Malhotra
41.	Anaesthesia Ventilator	DST, New Delhi	RN Sengupta
42.	Vascular Microendoscope of Various Diameters	DST, New Delhi	CR Prasad
43.	Sodium/Potassium Analyser	DST, New Delhi	SS Ahluwalia
44.	Surgical Microscope for Cataract Surgery	DST, New Delhi	PK Goel
45.	National Programme for the Deployment of Indigenously Developed Integrated Medical Linac System for Cancer Therapy (Phase-I)	DIT, New Delhi	PS Malhotra
46.	Dev. of Adaptive Neuro-Fuzzy Controller for Anaesthesia	DST, New Delhi	Amod Kumar
<b>Optics &amp; Opto-Electronics (including Coherent Optics)</b>			
47.	Low Vision Aids (Plastic Aspheric Lenses)	Min. of Social Justice & Empowerment, N. Delhi	SV Rama Gopal
48.	Optical Components for UV-Vis Spectrophotometer	M/s Systronics, Ahmedabad	PK Jain
49.	Tele-Microscope (using Plastic Aspheric Doublets) As Low Vision Aids	Min. of Social Justice & Empowerment, SV Rama Gopal New Delhi	
50.	Establishment of National Facility for R&D in Aspheric based Optical & Electro-Optical Systems	DST, New Delhi	PK Jain
51.	Design & Dev. of Night Driving Filter (Phase II)	DST, New Delhi	PK Rao
52.	Precision Aspheric Lenses for Indirect Ophthalmoscope	DST, New Delhi	GS Singh
53.	Optical System for CD Mechanism	M/s Trident Industries Ltd, New Delhi	PK Jain
54.	Investigation of High Security Embossed Hologram Mastering Techniques	DST, New Delhi	SK Kaura
55.	Automatic Detector for Fake Currency Notes	(In-house)	HK Sardana
<b>Process Control Instrumentation</b>			
56.	Microwave Microbial Decontaminator System 1.5 X (Modified Version)	RRL, Jammu	Lalit M Bharadwaj
<b>Biomolecular Electronics and Nanotechnology</b>			
57.	Study of Electrical Characteristics of DNA for Fabrication of Biomolecular Electronic Devices using Conducting Polymers	DST, New Delhi	Lalit M Bharadwaj
58.	Study of DNA Computers and its Application in Biomolecular Electronics	DBT, New Delhi	Lalit M Bharadwaj
<b>Microelectronics Instrumentation</b>			
59.	Protective Biocompatible Coating on Surgical Tools	DST, New Delhi	AK Dimri
60.	Fabrication of Porous Silicon Light Emitting Diodes (LEDs) using Conducting Polymers	DST, New Delhi	Sunita Mishra
<b>Micro Electro Mechanical Systems &amp; Sensors for Diverse Applications</b>			
61.	Plasma Etching Processes for High Aspect Ratio Structures for MEMS Applications	NPSM, ADA, Bangalore	AK Paul
62.	Bio-MEMS based Microclinical	NPSM, ADA, Bangalore	LM Bhardwaj

## Networked Programmes of CSIR

Sr. No.	Title of Project	Participating Labs
1.	Electronics for Societal Purposes	CSIO Chandigarh (Nodal Lab), CRRI New Delhi, NPL New Delhi, CBRI Roorkee, CFTRI Mysore, CEERI Pilani, CMERI Durgapur, NGRH Hyderabad
2.	Development of Key Technologies for Photonics and Opto Electronics	CGCRI Kolkata (Nodal Lab), CSIO Chandigarh, IICT Hyderabad, CEERI Pilani, NPL New Delhi, RRL Thiruvananthapuram
3.	Custom Tailored Special Materials	CGCRI Kolkata (Nodal Lab), CECRI Karaikudi, CSIO Chandigarh, NPL New Delhi, RRL Bhopal, IICT Hyderabad, NCL Pune, NAL Bangalore, NML Jamshedpur, CMERI Durgapur, RRL Thiruvananthapuram, RRL Bhubaneswar
4.	High Science & Technology for National Aerospace Programmes	NAL Bangalore (Nodal Lab), CMERI Durgapur, CSIO Chandigarh, NPL New Delhi, RRL Bhopal

GS Singh, PK Jain and VML Narasimham

Design considerations of a high magnification compact size zoom lens: choice of a zoom type

**Journal of Optics**, 2002, **31(1)**, 17-27

SS Randhawa, G Chand and AK Ganju

Development of a Microprocessor based Biochemical Sampler

**Journal of Automated Methods & Management in Chemistry**, March-April, 2002, **24(2)**, 49-50

Nahar Singh, SC Jain and AK Aggarwal

Fiber optic technique for sensing temperature, contamination, and layer thickness of immiscible liquids

**Experimental Techniques(USA)**, March-April, 2002, 36-38

Nathai Ram, RR Dongaonkar, Raghbir Singh, Rama Nand and RP Bajpai

Development of wavelength dispersive X-ray spectrometer

**Journal of Scientific and Industrial Research**, April 2002, **61**, 280-285

C Ghanshyam, Sunita Mishra, Nathai Ram, Satinder Singh, RP Bajpai and RK Bedi\*

Design of a patterned substrate for gas sensor applications

\*(Department of Physics, GND University, Amritsar)

**Journal of Scientific and Industrial Research**, April 2002, **61**, 802-804

R.C. Arora and V.K. Sharma

Resource Sharing/Networking for Human Resource Development

**Journal of Technical Education**, April-June 2002, **25**, 52-54

AK Paul, AK Dimri and RP Bajpai

Characterisation and design considerations of a radio frequency glow discharge spectral

source for solid material analysis

**Journal of Materials Processing Technology**, 2002, **128**, 226-231

A Srivastava, A Kumar, M Singh, ML Singla, YM Scindia, AGC Nair and AVR Reddy

Multi-element analysis of soil from the northwestern region of India by neutron activation

analysis using the single comparator method with special reference to selenium toxicity

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Adhunik Janjivan mein Holography Vigyan ka Mahtwapurn Upyog

**Bhartiya Vaigyanik Evam Audyogik Anushandhan Patrika**, June, 2002, **10(1)**, 11-20

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Sunita Mishra, C Ghanshyam, Nathai Ram, Satinder Singh, RP Bajpai and RK Bedi\*

Alcohol sensing of tin oxide thin film prepared by sol-gel process.

\*(Department of Physics, Material science, GND University, Amritsar)

**India Bull. Material Science** June 2002, **25(3)**, 231-234

Basudeo Prasad

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**Journal of Vigyan Pragati**, June, 2002

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**Journal of Scientific and Industrial Research (JSIR)**, October, 2002, **61**, 786 - 791

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Design and development of a unique drop sensing unit for infusion pump

**Journal of Scientific & Industrial Research**, October, 2002, **61**, 798-801

HK Sardana, Gaurav Julka and JK Chhabra

Integrating communication with sensing micro-bending of multi-mode optical fiber

**Indian Journal of Pure & Applied Physics**, October 2002, **40**, 720-725

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Prudushan Sankat Avam Nidan

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Nahar Singh, GC Poddar, Subhash Chander Jain, JK Chhabra, AK Aggarwal and RP Bajpai

Prakashiya Fiber Samvdak Takniki Vikas Mein Kendriya Vaigyanik Upkaran Sangthan Ka Yogdan, **Bhartiya Vaigyanik Evam**

**Audhyogik Anushandhan Patrika**, December, 2002 (in Hindi)

*GS Singh, PK Jain and VML Narasimham*

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**Journal of Optics**, 2002, **31(1)**, 17-27

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Multi-element analysis of soil from the northwestern region of India by neutron activation

## Patents Filed

Title and Inventor(s)	Date of Filing	Country
<b>An Energy Efficient Data Acquisition System and a Computer Controlled On-Line Energy Monitoring System</b> RK Mohan Rao, C Selvam, M Chander, G S Ayyappan	19.12.2002	PCT
<b>A Ceramic Mixture having Negative Temperature Coefficient, a Thermistor Containing the Ceramic Mixture and the Process for Preparing thereof</b> ML Singla, Baldev Raj, VR Harchekar, RP Bajpai	25.02.2003	PCT
<b>Improved Semi-Automatic Pick &amp; Place Machine for Assembly Components</b> VML Narasimham, R Bhatnagar, BD Sharma, AK Mediratta, Shrivana Kumar RR	20.03.2003	ZA
<b>Improved Semi-Automatic Pick &amp; Place Machine for Assembly Components</b> VML Narasimham, R Bhatnagar, BD Sharma, AK Mediratta, Shrivana Kumar RR	21.03.2003	Australia
<b>Improved Semi-Automatic Pick &amp; Place Machine for Assembly Components</b> VML Narasimham, R Bhatnagar, BD Sharma, AK Mediratta, Shrivana Kumar RR	22-03-2003	Malaysia
<b>Improved Semi-Automatic Pick &amp; Place Machine for Assembly Components</b> VML Narasimham, R Bhatnagar, BD Sharma, AK Mediratta, Shrivana Kumar RR	25-03-2003	CN
<b>A New Multifiber 2D-Array Device for Sensing &amp; Localizing Environment Perturbations using Speckle Image Processing</b> HK Sardana, JK Chhabra, S Bandyopadhyay, PK Goel	31.03.2003	India
<b>DNA based Steganography</b> Lalit M Bharadwaj	31.03.2003	US
<b>An Opto-Electronic Device Generation of Ultrasonic Probe</b> SS Ahluwalia	31.03.2003	US
<b>A System and Method for Monitoring Properties of a Medium by Fiber Optics</b> Nahar Singh, SC Jain, AK Aggarwal, RP Bajpai	31.03.2003	US
<b>A Ceramic Mixture having Negative Temperature Coefficient, a Thermistor Containing the Ceramic Mixture and a Process for Preparing thereof</b> ML Singla, Baldev Raj, VR Harchekar, RP Bajpai	31.03.2003	US
<b>Microbial Decontaminator *</b> GN Qazi, SC Puri, A Braroo, V Verma, SRV Hasan, Rajesh Anand, AP Bhonekar, A Kumar, Lalit M Bharadwaj, RP Bajpai	31.03.2003	US
<b>Microbial Decontaminator *</b> GN Qazi, SC Puri, A Braroo, V Verma, SRV Hasan, Rajesh Anand, AP Bhonekar, A Kumar, Lalit M Bharadwaj, RP Bajpai	31.03.2003	PCT
<b>A Device Useful for Signal Transfer from Static to Rotating Surface</b> SS Ahluwalia, S Verma, SR Taneja	31.03.2003	US
<b>A Device Useful for Signal Transfer from Static Surface to Rotating Surface and Viceversa</b> SS Ahluwalia, S Verma, SR Taneja	31.03.2003	PCT

\* Filed in association with RRL, Jammu



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'Science as Career', CPYLS Programme, organised by CSIO, Chandigarh; April 4-5, 2002

**Dr RP Bajpai, Director**

'Current Trends & Future Scenario of Microelectronics in India', National Seminar on Microelectronics - Current R&D Industrial Scenario, held at Panjab University, Chandigarh; April 12, 2002

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'Vehicular Pollution & Control', World Environment Day, organised by Environmental Society of India, Chandigarh; June 4, 2002

**Dr HK Sardana, Scientist 'EII'**

'Image Recognition using Back Propagation', Short-term Course on Neural Networks for Technical Teachers at TTTI, Chandigarh; July 5, 2002

**Dr AK Aggarwal, Scientist 'G'**

'Fundamentals of Lasers and its Applications', Kishore Vaigyanik Protsahan Yojna, coordinated by Panjab University, Chandigarh; July 8, 2002

**Shri C Sethuraman, Scientist 'B'**

'Energy Audit - Case Study Presentation', Small Industries Service Institute, Govt. of India, Chennai; August 30, 2002

**Shri AK Paul, Scientist 'EII'**

'Dry Etch Requirements for MEMS Applications', IETE 45<sup>th</sup> Annual Technical Convention (Pre-convention Tutorials), held at CSIO, Chandigarh; September 29, 2002

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'ICP-OES: Introduction and Applications for Ultra Trace Elemental Analysis', CEES (DRDO), New Delhi; October 14, 2002

**Shri NS Aulakh, Scientist 'B'**

'Medical Applications of Optical Fiber', DST-CSIO Training Programme on Repair & Maintenance of Bio-Medical Instruments for Hospital Technicians / Doctors, at CSIO; November 13, 2002

**Shri Amod Kumar, Scientist 'EII'**

'Action Potentials and Bio-signals', DST-CSIO Training Programme on Repair & Maintenance of Bio-medical Instruments for Hospital Technicians / Doctors, held at CSIO, Chandigarh; November 18, 2002

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'DFT/FFT', Short-term Course on Digital Signal Processing & System Design at TTTI, Chandigarh; November 19, 2002

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'Rajbhasha & its Use in Science & Technology', Seminar on Rajbhasha and its Application in Science & Technology, held at TBRL, Chandigarh; November 27, 2002

**Dr RP Bajpai, Director**

'Bio & Nano Devices Instrumentation and Future Trends', National Symposium on Instrumentation, held at Bharathiar University, Coimbatore; November 28, 2002

**Dr MSN Srinivas, Scientist 'EII'**

'Development of Head Up Display for Light Combat Aircraft', National Symposium on Instrumentation, held at Bharathiar University, Coimbatore; November 27-29, 2002

**Shri RC Arora, Scientist 'F'**

'Insight through Science', CPYLS Programme, organised by CSIO, Chandigarh; November 29, 2002

**Dr HK Sardana, Scientist 'EII'**

'Digital Filtering and Correlation', Short-term Course on Digital Signal Processing & System Design at TTTI, Chandigarh; November 29, 2002

**Shri D Krishna Moorthy, Technical Officer 'B' and Shri GS Ayyappan, Technical Officer 'A'**

'Energy Management Instrumentation', Karunya Institute of Technology, Coimbatore; November 29, 2002

**Shri NS Aulakh, Scientist 'B'**

'Computer Viruses', CPYLS Programme held at CSIO; November 29, 2002

**Shri JK Chhabra, Scientist 'EII'**

'Medical Applications of Fiber Optics', AICTE sponsored Winter School on Optical Fiber Technology and Applications, organised at Guru Nanak Dev Engineering College, Ludhiana; December 18, 2002

**Shri NS Mehla, Scientist 'F'**

'Optical Fiber Sensors Technology: Status, R&D Scenario and Applications', AICTE sponsored Winter School on Optical Fiber Technology and Applications, organised at Guru Nanak Dev Engineering College, Ludhiana; December 20, 2002

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'Fiber Optics Technology, Components and Measurements', AICTE sponsored Winter School on Optical Fiber Technology and Applications, organised at Guru Nanak Dev Engineering College, Ludhiana; December 20, 2002

**Dr RP Bajpai, Director**

'Networking of Knowledge between Industry and Academy', Higher Education Summit organized by CII, Chandigarh; December 20, 2002

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'EEG Signal Processing for Anaesthesia Monitoring', AICTE and ISTE sponsored Course on Telemedicine: Information Technology in Biomedical Engineering, held at Sant Longowal Institute of Engg. and Technology, Longowal; January 1, 2003

**Dr HK Sardana, Scientist 'EII'**

'Image Processing Applications', Institute-Industry Interaction, at Institute of Engineering and Technology, Bhaddal, Punjab; January 6, 2003

**Dr AK Aggarwal, Scientist 'G'**

'Coherent Optics R&D Opportunities at CSIO', 28<sup>th</sup> OSI Conference on Optics and Photonics in Engineering (COPE 03), held at NSIT, Dwarka, New Delhi; January 6-8, 2003

**Shri HS Gupta, Scientist 'F'**

'Industry-Institute Interaction, a Win - Win Situation', Sant Longowal Institute of Engg. and Technology, Longowal; February 6, 2003

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Sh Sukhdev, Mali I(4)  
Sh Ajudhya Prasad, Mali I(4)  
Sh Shujauddin, Mali I(4)  
Sh Ram Lakhani, Tech.I(4)  
Sh Kanhi, Tech.I(3)  
Mrs Chinna Ponnuru, Tech.I(3)

### Security

Sh H S Gill, Sec. Officer  
Sh Lakshpat Rai, Sr.Sec.Asstt.  
Sh Rai Singh, Sr.Sec.Asstt.  
Sh Ramji Dass, Jr.Sec.Asstt.  
Sh Chhote Lal Yadav, Jr.Sec.Asstt.  
Sh Khem Chand, S.Wala  
Sh Gulshera, R. Keeper  
Sh Soba Ram, R. Keeper  
Sh Ram Avtar Sharma, LDC  
Sh Sita Ram, Sec.Guard  
Sh Hakam Singh, Sec.Guard  
Sh Kulwant Singh, Sec.Guard  
Sh Darshan Kumar, Sec.Guard  
Sh Kartara, Sec.Guard  
Sh Fakirya, Sec.Guard  
Sh Ram Avtar (Jr.), Sec.Guard  
Sh Tarsem Singh, Sec.Guard  
Sh Harbhajan Singh, Sec.Guard  
Sh Dina Nath, Sec.Guard  
Sh Jagdish Singh, Sec.Guard  
Sh Kuldip Singh, Sec.Guard  
Sh Gurbachan Singh, Sec.Guard(Jr.)  
Sh Randhir Singh, Sec.Guard  
Sh Banarasi Dass, Sec.Guard  
Sh Mohan Lal, Sec.Guard  
Sh Mahan Singh, Sec.Guard  
Sh Kartar Chand, Sec.Guard  
Sh Jasvinder Singh, Sec.Guard  
Sh Varinder Sharma, Sec.Guard  
Sh Dulo Ram, Chowkidar

Sh Prem Chand, Chowkidar  
Sh Ramesh Chand, Chowkidar  
Sh Dharmjister, Chowkidar

### SERVICE & MAINTENANCE CENTRES

#### Chandigarh (HQ)

Mrs M. Ramamurthy, Sc.F  
Sh C J Rao, Sc.El  
Sh Ravinder Kumar, TO-El  
Sh Sita Ram, TO-C  
Sh Chander Bhushan, TO-B  
Sh I S Grewal, TO-A  
Mrs Aruna Attri, TO-A  
Sh Upendra Kumar, TO-A  
Sh Sita Ram, Tech.II(4)  
Sh K R A Nair, Tech.II(4)  
Sh Naranjan Singh, Tech.I(4)  
Sh Swaran Singh, Tech.I(3)

#### New Delhi Centre

Sh N K Sharma, Sc.ElI  
Sh H K Pir, Sc.ElI  
Sh M S Bageshwar, Sc.ElI  
Dr S K Chauhan, Sc.ElI  
Sh Govind Kumar, Sc.El  
Sh Sunil Khanna, TO-C  
Sh Dhanwant Singh, TO-C  
Sh A S Panwar, TO-C  
Sh Ram Mahesh Pal, TO-C  
Sh J C Gupta, TO-C  
Mrs Shashi Moitra, TO-C  
Sh A K Sharma, TO-B  
Mrs Santosh Jain, TO-B  
Sh M Ganesan, Sc.B  
Sh Jts Arunkumar, Sc.B  
Sh Kailash Chand, TO-A  
Sh Ram Kumar, Tech.II(4)  
Sh Sardul Singh, Tech.II(4)  
Sh Des Raj, SCD II(4)  
Sh Amar Singh, SCD II(4)  
Sh Brij Mohan, Tech.II(4)  
Sh Shanti Lal, Tech.II(4)  
Sh K Raju, Tech.II(4)  
Sh Karoo Ghunyan, Tech.I(3)  
Mrs Krishna Kaushika, UDC  
Sh V P Thapa, Chowkidar

#### Jaipur Centre

Sh A K Sharma, Sc.El  
Mrs Sudha V M Rao, Sc.El  
Sh K P Chowdhary, Sc.C  
Sh H P Sayal, TO-C  
Sh P K Sharma, TO-A  
Sh A K Taneja, Tech.II(4)  
Mrs Lalitha Sharma, Tech.II(3)  
Sh Sita Ram, S.Wala  
Sh S K Batta, Tech.II(1)

#### Chennai Centre

Sh R K Mohan Rao, Sc.F  
Sh S Sivagaminathan, Sc.F  
Sh T R Natrajan, Sc.F  
Sh P V Talwar, Sc.ElI  
Sh Kota Srinivas, Sc.ElI  
Mrs Hemamalini Kasturi, TO-ElI  
Sh R Devarajan, Sc.El  
Sh S Radhakrishnan, Sc.El  
Mrs P Chenthamarai, Sc.El  
Mrs Meenalochani, TO-C  
Sh D Krishnamoorthy, TO-B  
Sh Dharendra Bansal, Sc.B  
Sh C Sethuraman, Sc.B  
Sh G S Ayyappa, TO-A  
Sh N Vivekanandam, TO-A  
Sh F E D Prasad, Tech.II(4)  
Sh S Dilli, Tech.II(4)  
Sh R V Selvarajan, Tech.II(4)  
Sh P Velmanikkam, Tech.I(3)  
Sh M Ramesh, Peon

## Trainees from Engineering Colleges / Universities

S.No.	Name of the Student	Sponsoring College/ Institute	Placement Area in CSIO	Duration
1	Mr Varun Doegar	MR Engg. College, Jaipur	MID	May 02, 02-Jun 12, 02
2	Mr Kunal Chandra	NIT, Rourkela	ISTC	May 08, 02-Jun 18, 02
3	Mr Dheeraj Kumar	Punjab Engg College, Chandigarh	MEID	May 21, 02-Jun 17, 02
4	Ms Divya Walia	Punjab Engg College, Chandigarh	GSID	May 21, 02-Jun 17, 02
5	Mr S S Parmar	RIT, Jamshedpur	S&CD	May 21, 02-Jun 17, 02
6	Mr Mudit Sood	Punjab Engg College, Chandigarh	GSID	May 21, 02-Jul 01, 02
7	Ms Deepti Rajput	MM Malviya Engg. College, Gorakhpur	PID	May 22, 02-Jul 02, 02
8	Mr Alok Pathak	Punjab Engg. College, Chandigarh	APD	May 22, 02-Jul 02, 02
9	Ms S Wadhawan	Punjab Engg College, Chandigarh	PID	May 22, 02-Jun 18, 02
10	Mr S Duggal	Punjab Engg College, Chandigarh	S&CD	May 22, 02-Jul 02, 02
11	Ms Ramanpreet Kaur	Punjab Engg College, Chandigarh	GSID	May 27, 02-Jun 23, 02
12	Mr Vikram Singh	Punjab Engg College, Chandigarh	MID	May 27, 02-Jun 23, 02
13	Ms Pooja Gupta	Punjab Engg College, Chandigarh	MID	May 27, 02-Jun 23, 02
14	Mr Vipul Aggarwal	Punjab Engg College, Chandigarh	APD	May 29, 02-Jun 25, 02
15	Ms Parul Raveesh	Punjab Engg College, Chandigarh	COD	May 30, 02-Jun 26, 02
16	Ms Simran Preet	Punjab Engg College, Chandigarh	MID	Jun 03, 02-Jul 14, 02
17	Mr Saloni Uboweja	Punjab Engg College, Chandigarh	APD	Jun 03, 02-Jun 30, 02
18	Mr Sumit Kataria	Punjab Engg College, Chandigarh	M FD	Jun 03, 02-Jul 14, 02
19	Mr Sandeep	Punjab Engg College, Chandigarh	MLD	Jun 03, 02-Jun 30, 02
20	Ms Preeti Aggarwal	Punjab Engg College, Chandigarh	PID	Jun 03, 02-Jul 14, 02
21	Ms Smriti Aggarwal	Punjab Engg College, Chandigarh	PID	Jun 03, 02-Jul 14, 02
22	Mr Vikas Mehta	Punjab Engg College, Chandigarh	ISTC	Jun 03, 02-Jun 30, 02
23	Mr Rajesh Bhargava	Career Inst. of Tech. & Management, Delhi	SMC, Delhi	Jun 03, 02-Jul 28, 02
24	Mr S K Badani	GB Pant University of Agri & Tech, Pantnagar	CMW	Jun 10, 02-Jul 29, 02
25	Ms Geetika	CR State College of Engineering, Murthal	PID	Jun 10, 02-Jul 21, 02
26	Mr Rajesh Malik	NIT, Allahabad	MSD	Jun 10, 02-Jul 07, 02
27	Mr Vineet Jaiswal	GND Engg. College, Ludhiana	CMW	Jun 10, 02-Jul 09, 02
28	Ms Anish Matania	GND Engg College, Ludhiana	GSID	Jun 11, 02-Jul 10, 02
29	Mr Manish Kalia	GB Pant University of Agri & Tech, Pantnagar	APD	Jun 11, 02-Jul 22, 02
30	Mr Manish Batra	NIT, Kurukshetra	MID	Jun 12, 02-Dec 11, 02
31	Mr Deepak Sharma	SUSCE&T, Tangori	MLD	Jun 14, 02-Jul 13, 02
32	Mr Viney Chopra	Sri Sukhmani Institute of Tech, Dera Bassi	EMID	Jun 17, 02-Jul 14, 02
33	Mr Gurpreet Singh	Adesh Instt. of Engg. & Tech., Faridkot	EMID	Jun 17, 02-Jul 16, 02
34	Ms Preeti Singh	Sri Sukhmani Institute of Tech, Dera Bassi	ISTC	Jun 17, 02-Jul 14, 02
35	Ms Anamika Batra	Kurukshetra University, Kurukshetra	PID	Jun 17, 02-Dec 16, 02
36	Ms Vidhu Vatrana	NIT, Jalandhar	PID	Jun 17, 02-Jul 28, 02
37	Ms Kamalpreet Kaur	CEDTI, Mohali	MID	Jun 18, 02-Dec 17, 02
38	Mr Abhishak Bansal	NIT, Jalandhar	SMC	Jun 19, 02-Jul 30, 02
39	Mr Karan Rana	NIT, Jalandhar	APD	Jun 17, 02-Jul 28, 02
40	Mr Devendra Rai	NIT, Mangalore	COD	Jun 19, 02-Jul 16, 02
41	Ms Neha	NIT, Kurukshetra	PID	Jun 24, 02-Dec 23, 02
42	Mr Akhlesh Kumar	TTTI, Chandigarh	PID	Jun 25, 02-Dec 24, 02
43	Ms Amandeep Kaur	Adesh Instt. of Engg. & Tech., Faridkot	PID	Jul 01, 02-Dec 31, 02
44	Ms Suman Lata	BBSB Engg. College, Fatehgarh Sahib	AEID	Jul 01, 02-Dec 31, 02
45	Amrinder Singh	GND Engg. College, Ludhiana	AEID	Jul 01, 02-Dec 31, 02
46	Ms Meenu Pahwa	BBSB Engg. College, Fatehgarh Sahib	PID	Jul 01, 02-Dec 31, 02
47	Ms Payal Sharma	Adesh Instt. of Engg. & Tech, Faridkot	EMID	Jul 01, 02-Dec 31, 02
48	Ms Navneet Kaur	Adesh instt. of Engg. & Tech, Faridkot	APD	Jul 01, 02-Dec 31, 02
49	Ms Shivani Sharma	Institute of Engg. & Tech, Bhaddal	PID	Jul 01, 02-Dec 31, 02
50	Mr Gaurav Sharma	Adesh instt. of Engg. & Tech, Faridkot	PID	Jul 01, 02-Dec 31, 02
51	Mr Arush Madan	SUSCE&T, Tangori	EMID	Jul 01, 02-Dec 31, 02
52	Mr Gurmanpreet Singh	GND Engg. College, Ludhiana	SMC	Jul 01, 02-Dec 31, 02
53	Mr Mandeep Singh	BBSB Engg. College, Fatehgarh Sahib	AEID	Jul 01, 02-Dec 31, 02
54	Ms Pooja Sharma	GTBKIE, Chhapianwali, Malout	MID	Jul 01, 02-Dec 31, 02
55	Ms Harinder Kaur	Institute of Engg. & Tech, Bhaddal	MEID	Jul 01, 02-Jul 29, 02
56	Ms Harjas Gill	Institute of Engg. & Tech, Bhaddal	MEID	Jul 01, 02-Jul 29, 02
57	Mr A K Ojha	BBSB Engg. College, Fatehgarh Sahib	PID	Jul 01, 02-Dec 31, 02
58	Ms Keerat Kaur	BBSB Engg. College, Fatehgarh Sahib	PID	Jul 01, 02-Dec 31, 02
59	Ms Madhu Jain	BBSB Engg. College, Fatehgarh Sahib	MID	Jul 01, 02-Dec 31, 02
60	Mr Sukhchain Singh	BBSB Engg. College, Fatehgarh Sahib	ISTC	Jul 01, 02-Dec 31, 02
61	Ms Maatti Puri	Adesh Instt. of Engg. & Tech., Faridkot	MLG	Jul 01, 02-Dec 31, 02
62	Ms Manvinder Kaur	BBSB Engg. College, Fatehgarh Sahib	PID	Jul 02, 02-Jan 01, 03
63	Mr Vijender Mohan	Sri Sukhmani Institute of Tech, Dera Bassi	CMW	Jul 02, 02-Jan 01, 03
64	Mr Pradeep Sethi	GTBKIE, Chhapianwali, Malout	MTF	Jul 02, 02-Jan 01, 03
65	Mr Puneet Puri	Beant College of Engg. & Tech, Gurdaspur	MTF	Jul 02, 02-Jan 01, 03
66	Ms Tarandeep Jaiswal	GTBKIE, Chhapianwali, Malout	DED	Jul 03, 02-Jan 02, 03
67	Mr K P Kandhar	BBSB Engg. College, Fatehgarh Sahib	ISTC	Jul 05, 02-Jan 04, 03
68	Mr Sidharth Dahiya	Punjab Engg. College, Chandigarh	MID	Jul 05, 02-Aug 04, 02
69	Mr Ajay Pal	JMIT, Radaur	MID	Jul 08, 02-Aug 18, 02
70	Mr Vikas Garg	JMIT, Radaur	MID	Jul 08, 02-Aug 18, 02
71	Mr Balvir Singh	BBSB Engg. College, Fatehgarh Sahib	APD	Jul 08, 02-Jan 07, 03
72	Ms Monika Sachdeva	Hary. College of Tech. & Management, Kaithal	MID	Jul 09, 02-Aug 19, 02
73	Ms Pooja Sehgal	Haryana Engg. College, Jagadhri	DED	Jul 09, 02-Aug 19, 02
74	Ms Pratibha Aggarwal	Haryana Engg. College, Jagadhri	DED	Jul 09, 02-Aug 19, 02
75	Ms Varundeep Kaur	BBSB Engg. College, Fatehgarh Sahib	PID	Jul 04, 02-Jan 03, 03
76	Mr Shalabh Agrawal	Instt. of Instru., Devi Ahilya Univ, Indore	PID	Jul 10, 02-Jan 09, 03
77	Mr S S Pandey	Instt. of Instru., Devi Ahilya Univ, Indore	PID	Jul 10, 02-Aug 20, 02
78	Ms Rachna Gandhi	MM Engg. College, Mullana	PID	Jul 16, 02-Aug 23, 02
79	Ms Shobha Madan	NC College of Engg, Panipat	GSID	Jul 16, 02-Jan 15, 03
80	Ms Jaspreet Kaur	BBSB Engg. College, Fatehgarh Sahib	AEID	Jul 16, 02-Jan 15, 03
81	Ms Kamaldeep Kaur	BBSB Engg. College, Fatehgarh Sahib	AEID	Jul 16, 02-Jan 15, 03
82	Mr G S Gill	Instt. of Instru., Devi Ahilya Univ, Indore	PID	Jul 16, 02-Jan 15, 03
83	Mr Gurpreet Singh	Institute of Engg. & Tech, Bhaddal	MSD	Jul 19, 02-Jan 18, 03
84	Ms Arshdeep Kaur	BBSB Engg. College, Fatehgarh Sahib	MID	Jul 18, 02-Jan 17, 03
85	Ms Maninder Kaur	BBSB Engg. College, Fatehgarh Sahib	AEID	Jul 22, 02-Jan 21, 03
86	Ms Preeti Gupta	SUSCE&T, Tangori	DED	Jul 23, 02-Jan 22, 03
87	Ms Shweta Sharma	Instt. of Phy & Elec., Barkatullah Univ, Bhopal	MFD	Jul 23, 02-Jan 22, 03
88	Mr S K Sharma	SUSCE&T, Tangori	DED	Jul 24, 02-Jan 23, 03
89	Mr Munish Mahajan	Beant College of Engg. & Tech., Gurdaspur	CMW	Jul 16, 02-Jan 15, 03
90	Mr Rahul Arora	Beant College of Engg. & Tech., Gurdaspur	CMW	Jul 15, 02-Jan 14, 03
91	Ms Tushar Vandna	BBSB Engg. College, Fatehgarh Sahib	PID	Jul 08, 02-Jan 07, 03
92	Mr Bhupesh Bhardwaj	Beant College of Engg. & Tech., Gurdaspur	MEID	Jul 25, 02-Jan 24, 03
93	Mr Sandeep Kumar	USIC, PU, Chandigarh	APD	Jul 26, 02-Jan 25, 03
94	Mr Sanjeev Kumar	USIC, PU, Chandigarh	APD	Jul 26, 02-Jan 25, 03

95	Ms Priyanka Jain	Sri Krishan Instt. of Engg & Tech., Kurukshetra	MID	Jul 29, 02-Sept 08, 02
96	Ms Manpreet Kaur	University of Delhi, South Campus	SMC Delhi	Aug 01, 02-Sep 30, 02
97	Mr Deepak Mishra	Instt. of Instru., Devi Ahilya Univ, Indore	GSID	Aug 02, 02-Feb 01, 03
98	Mr Samrat Sood	Madhav Instt. of Tech & Science, Gwalior	MID	Aug 06, 02-Sep 02, 02
99	Mr Kapil Kumar	RSIC, PU, Chandigarh	GSID	Aug 07, 02-Feb 06, 03
100	Mr A K Verma	RSIC, PU, Chandigarh	MID	Aug 13, 02-Feb 12, 03
101	Mr S K Gupta	RSIC, PU, Chandigarh	MID	Aug 13, 02-Feb 12, 03
102	Mr Mahanth Prasad	RSIC, PU, Chandigarh	MID	Aug 19, 02-Feb 18, 03
103	Mr C I Singh	Regional Computer Centre, Chandigarh	MSD	Aug 20, 02-Feb 19, 03
104	Mr Y K Patel	DDU Gorkhpur University, Gorkhpur	MID	Aug 21, 02-Feb 20, 03
105	Mr S K Srivastava	DDU Gorkhpur University, Gorkhpur	MID	Aug 21, 02-Feb 20, 03
106	Mr M K Srivastava	DDU Gorkhpur University, Gorkhpur	APD	Aug 22, 02-Feb 21, 03
107	Ms Vandana Chadha	Regional Computer Centre, Chandigarh	PID	Aug 26, 02-Feb 25, 03
108	Ms Roshni	NIT, Kurukshetra	MID	Sep 05, 02-Mar 04, 03
109	Ms Poonam Bansal	RCC, Chandigarh	BDG	Sep 25, 02-Mar 24, 03
110	Mr S K Chaurasia	NIT, Kurukshetra	MID	Oct 04, 02-Apr 03, 03
111	Ms Amrita Dev	NEC, Bhagtapur, Nepal	PID	Oct 11, 02-Nov 10, 02
112	Ms Nikita Mishra	NEC, Bhagtapur, Nepal	MID	Oct 11, 02-Nov 10, 02
113	Ms Sulochana Das	NEC, Bhagtapur, Nepal	PID	Oct 11, 02-Nov 10, 02
114	Mr D K Koirala	NEC, Bhagtapur, Nepal	PID	Oct 11, 02-Nov 10, 02
115	Mr Aalok Khadka	NEC, Bhagtapur, Nepal	PID	Oct 11, 02-Nov 10, 02
116	Mr Anuj Poudyal	NEC, Bhagtapur, Nepal	BEND	Oct 11, 02-Nov 10, 02
117	Ms Seema Gandhi	Regional Computer Centre, Chandigarh	ISTC	Oct 16, 02-Apr 15, 03
118	Mr K Malakarjuna	NIT, Kurukshetra	GSID	Oct 17, 02-Apr 16, 03
119	Ms KA Kagoo	Velammal Engg. College, Chennai	BEND	Nov 11, 02-Dec 18, 02
120	Mr Suresh Chandra	Punjab Engg. College, Chandigarh	PID	Nov 11, 02-May 10, 03
121	Mr Yogesh Arora	Punjab Engg. College, Chandigarh	GSID	Dec 09, 02-Jan 05, 03
122	Mr Saahas	Punjab Engg. College, Chandigarh	CMW	Dec 10, 02-Jan 06, 03
123	Mr Rohit Khurana	Punjab Engg. College, Chandigarh	CMW	Dec 10, 02-Jan 06, 03
124	Mr Varun Thakur	Punjab Engg. College, Chandigarh	MFD	Dec 11, 02-Jan 07, 03
125	Mr Abhishek Chauhan	Punjab Engg. College, Chandigarh	MFD	Dec 11, 02-Jan 07, 03
126	Ms Shyamli Saxena	Punjab Engg. College, Chandigarh	GSID	Dec 16, 02-Jan 15, 03
127	Mr Vikas Moudgil	SRES College of Engg., Pune University	SMC Delhi	Dec 12, 02-Jan 02, 03
128	Ms Neha Goel	TIET, Patiala	PID	Jan 01, 03-Jun 30, 03
129	Mr Mayank Kapoor	Lala Lajpat Rai Instt. of Engg. & Tech., Moga	MID	Jan 01, 03-Jun 30, 03
130	Ms Alka Agarwal	Kanya Gurukul Mahavidyala	DED	Jan 01, 03-Jun 30, 03
131	Ms Deepika	TIET, Patiala	DED	Jan 01, 03-Jun 30, 03
132	Ms Qaymat Sharma	TIET, Patiala	COD	Jan 01, 03-Jun 30, 03
133	Mr Gaurav Syal	TIET, Patiala	COD	Jan 01, 03-Jun 30, 03
134	Mr S P Singh	TIET, Patiala	PID	Jan 01, 03-Jun 30, 03
135	Ms Pritika	TIET, Patiala	S&C	Jan 01, 03-Jun 30, 03
136	Mr Sahilpreet Singh	TIET, Patiala	GSID	Jan 01, 03-Jun 30, 03
137	Ms Shelender	TIET, Patiala	MID	Jan 01, 03-Jun 30, 03
138	Mr Harsh Setia	TIET, Patiala	MSD	Jan 01, 03-Jun 30, 03
139	Ms Ruhani Malik	TIET, Patiala	MTF	Jan 01, 03-Jun 30, 03
140	Mr Robin Goel	TIET, Patiala	PID	Jan 01, 03-Jun 30, 03
141	Ms J K Oberoi	TIET, Patiala	MSD	Jan 02, 03-Jul 01, 03
142	Ms Vineeta	GNK Instt. of Tech. & Mgt. Studies, Y.Nagar	PID	Jan 02, 03-Jul 01, 03
143	Mr Ashwani Kumar	GND University, Amritsar	PID	Jan 03, 03-Jul 02, 03
144	Ms Preeti Singh	Sri Sukhmani Institute of Tech, Dera Bassi	Electrical	Jan 03, 03-Jul 02, 03
145	Mr Manjit Singh	GND University, Amritsar	MSD	Jan 03, 03-Jul 02, 03
146	Ms Monisha Sood	Lala Lajpat Rai Instt. of Engg. & Tech., Moga	GSID	Jan 06, 03-Jul 05, 03
147	Mr Deepak Maingi	NIT, Jalandhar	DED	Jan 07, 03-Jul 06, 03
148	Ms Bindu Bala	TIET, Patiala	MTF	Jan 07, 03-Jul 06, 03
149	Ms Mandeep Kaur	Instt. of Engg. & Tech., Bhaddal	PID	Jan 07, 03-Jul 06, 03
150	Mr Ankur Mehta	GND University, Amritsar	MID	Jan 08, 03-Jul 07, 03
151	Mr Shivam Garg	NIT, Jalandhar	MTF	Jan 09, 03-Jul 08, 03
152	Mr Nishant Verma	Lala Lajpat Rai Instt. of Engg. & Tech., Moga	PID	Jan 09, 03-Jul 08, 03
153	Ms Mudita Mangi	Malout Instt. of Engg. & Tech., Malout	BEND	Jan 09, 03-Jul 08, 03
154	Mr Paramjit Singh	Lajpat Rai Instt. of Engg. & Tech, Moga	ISTC	Jan 13, 03-Jul 12, 03
155	Mr Neeraj Kumar	Beant College of Engg. & Tech., Gurdaspur	PID	Jan 13, 03-Jul 12, 03
156	Mr Vikas Sharma	Guru Nanak Khalsa College, Karnal	PID	Jan 13, 03-Jul 12, 03
157	Ms Reshu Sehgal	Guru Nanak Khalsa College, Y. Nagar	DED	Jan 13, 03-Jul 12, 03
158	Ms Leena Singh	NIT, Kurukshetra	PID	Jan 13, 03-Jul 12, 03
159	Mr Gaurav Salwan	NIT, Jalandhar	ISTC	Jan 14, 03-Jul 13, 03
160	Mr Avijeet Singh	NIT, Jalandhar	ISTC	Jan 14, 03-Jul 13, 03
161	Ms Nishu Bansal	Instt. of Engg. & Tech., Bhaddal	APD	Jan 14, 03-Jul 13, 03
162	Ms Shikha Dhir	Sri Sukhmani Instt. of Engg. & Tech, Dera Bassi	PID	Jan 15, 03-Jul 14, 03
163	Ms M Angurala	NIT, Jalandhar	PID	Jan 15, 03-Jul 14, 03
164	Mr M Mahajan	NIT, Jalandhar	COD	Jan 15, 03-Jul 14, 03
165	Mr M Yasin	NIT, Jalandhar	AEID	Jan 15, 03-Jul 14, 03
166	Ms Jaspreet Kaur	NIT, Jalandhar	COD	Jan 15, 03-Jul 14, 03
167	Ms Neeru Sharma	Instt. of Engg. & Tech., Bhaddal	ISTC	Jan 15, 03-Jul 14, 03
168	Mr Tarun Khungar	Instt. of Engg. & Tech, Bhaddal	APD	Jan 16, 03-Jul 15, 03
169	Ms Nirja Mogoch	NIT, Jalandhar	DED	Jan 16, 03-Jul 15, 03
170	Ms Hina Wallia	Punjabi University, Patiala	PID	Jan 16, 03-Jul 15, 03
171	Ms Nidhi Dhingra	GN Khalsa College, Yamuna Nagar	PID	Jan 16, 03-Jul 15, 03
172	Ms Manvinder Kaur	Instt. of Engg. & Tech., Bhaddal	MID	Jan 17, 03-Jul 16, 03
173	Ms Shaifali Gupta	Instt. of Engg. & Tech, Bhaddal	BEND	Jan 17, 03-Jul 16, 03
174	Ms Priyanka Gupta	Instt. of Engg. & Tech., Bhaddal	MFD	Jan 17, 03-Jul 16, 03
175	Ms Gurpreet Kaur	NIT, Jalandhar	PID	Jan 20, 03-Jul 19, 03
176	Ms Sneha Singla	NIT, Jalandhar	PID	Jan 20, 03-Jul 19, 03
177	Ms Nirmal Kaur	Punjabi University, Patiala	PID	Jan 20, 03-Jul 19, 03
178	Mr Manmeet Singh	Lala Lajpat Rai Instt. of Engg. & Tech, Moga	BEND	Jan 20, 03-Jul 19, 03
179	Ms Roopan Aulakh	NIT, Jalandhar	MID	Jan 20, 03-Jul 19, 03
180	Ms Pooja Singla	Punjabi University, Patiala	PID	Jan 20, 03-Jul 19, 03
181	Ms G K Mann	Punjab College of IT, Patiala	GSID	Jan 21, 03-Jul 20, 03
182	Mr Karan Rana	NIT, Jalandhar	BEND	Jan 15, 03-Jul 14, 03
183	Ms Subarna Roy	Guru Ghasidas University, Bilaspur	APD	Jan 27, 03-Jul 26, 03
184	Ms Ranjeet Kaur	NIT, Kurukshetra	PID	Jan 27, 03-Jul 26, 03
185	Mr S K Saini	NIT, Kurukshetra	AOPD	Jan 27, 03-Jul 26, 03
186	Ms Nidhi Batra	Malout Instt. of Engg. & Tech., Malout	BEND	Jan 28, 03-Jul 27, 03
187	Mr Baljeet Singh	GND University, Amritsar	MID	Jan 29, 03-Jul 28, 03
188	Ms Parveen Kaur	Punjab College of Information & Tech, Patiala	ISTC	Feb 03, 03-Aug 02, 03
189	Ms Mamta	Malout Instt. of Engg. & Tech., Malout	GSID	Mar 17, 03-Sep 16, 03

**Trainees From Vocational Institutes**

190	Mr Sanjeev	Jan Shikshan Sansthan, Sec. 38, Chandigarh	Ref. & A/C	Jun 04, 02-Jun 03, 03
191	Mr Vishal Saini	Jan Shikshan Sansthan, Sec. 38, Chandigarh	Ref. & A/C	Jun 04, 02-Jun 03, 03
192	Mr Gagandeep Sharma	Jan Shikshan Sansthan, Sec. 38, Chandigarh	Ref. & A/C	Jun 04, 02-Jun 03, 03
193	Mr Yadvinder Singh	Jan Shikshan Sansthan, Sec. 38, Chandigarh	Ref. & A/C	Jun 04, 02-Jun 03, 03
194	Mr Pamit Thakur	Jan Shikshan Sansthan, Sec. 38, Chandigarh	Electrical	Jun 04, 02-Jun 03, 03
195	Mr Sudhir Kumar	Jan Shikshan Sansthan, Sec. 38, Chandigarh	Electrical	Jun 04, 02-Jun 03, 03
196	Mr Ajay Gupta	Jan Shikshan Sansthan, Sec. 38, Chandigarh	Electrical	Jun 04, 02-Jun 03, 03
197	Mr Pradeep Sharma	Jan Shikshan Sansthan, Sec. 38, Chandigarh	Electrical	Jun 04, 02-Jun 03, 03
198	Mr Jaspal Singh	Jan Shikshan Sansthan, Sec. 38, Chandigarh	Ref. & A/C	Jan 22, 03-Jan 21, 04

**Technical Apprenticeship for Diploma Holders**

199	Mr Sanjeev Lakhnawal	284-A, Sector 30-A, Chandigarh	CMW	Jun 12, 02-Jun 11, 03
200	Mr Jagdeep Singh	3364, Sector 27-D, Chandigarh	CMW	Jul 16, 02-Jul 15, 03
201	Ms Anupama	721/9, Sector 26, Chandigarh	MEID	Jul 22, 02-Jul 21, 03
202	Mr B D Singh	409, Ward-1, Surjit Nagar, Morinda	SMC	Jul 22, 02-Jul 21, 03
203	Ms Richa Chandla	3464, Sector 40-D, Chandigarh	PID	Jul 26, 02-Jul 25, 03
204	Ms Ishmeet	3160-A, Sector 15, Chandigarh	MID	Jul 30, 02-Jul 29, 03
205	Mr K C Dhiman	97, Vill. Lahora, Mullanpur, Chandigarh	S&C	Aug 01, 02-Jul 31, 03
206	Mr Parveen Kaushik	3277, Sector 45-D, Chandigarh	S&C	Aug 01, 02-Jul 31, 03
207	Ms Rajia	961, Near Mata Raj Kaur Gurdwara, Manimajra	MID	Aug 01, 02-Jul 31, 03
208	Ms Puneet Kaur	81, Phase-I, SAS Nagar, Mohali	MSD	Aug 12, 02-Aug 11, 03
209	Ms Navdeep Tiwana	2351/4, Manimajra, Chandigarh	SMC	Aug 12, 02-Aug 11, 03
210	Ms Megha Chhabra	756/10, Near Anaj Mandi, Dera Bassi	SMC	Aug 12, 02-Aug 11, 03
211	Ms Rimpi Arora	B-17, CSIO Campus, Sector 30, Chandigarh	SMC	Aug 12, 02-Aug 11, 03
212	Ms Deepti Madan	206, Sector 23-A, Chandigarh	PID	Aug 12, 02-Aug 11, 03
213	Mr Sandeep Singh	224, Ward No.4, Mundi Kharar, Kharar	MTF	Aug 13, 02-Aug 12, 03
214	Ms Rajvinder Kaur	3573, Sector 35-D, Chandigarh	APD	Aug 16, 02-Aug 15, 03
215	Mr Neeraj	1152-A, Sector 41-B, Chandigarh	CMW	Aug 16, 02-Aug 15, 03
216	Ms Nisha Goyal	2400, Sector 24-C, Chandigarh	MFD	Aug 20, 02-Aug 19, 03
217	Mr Raj Kumar	1028, Sector 28-B, Chandigarh	CMW	Aug 22, 02-Aug 21, 03
218	Mr Jaswinder Singh	B-16, Type-2, Sector 38-A, Chandigarh	CMW	Aug 23, 02-Aug 22, 03
219	Mr Jaswinder Singh	1336A, Sector 41-B, Chandigarh	S&C	Aug 27, 02-Aug 26, 03
220	Ms Nancy Sharma	1158, Sector 46-B, Chandigarh	MSD	Aug 27, 02-Aug 26, 03
221	Mr Gagan Deep	2837, Sector 22-C, Chandigarh	AEID	Aug 28, 02-Aug 27, 03
222	Mr Baljeet	4552, Maloya Colony, Chandigarh	DED	Sep 02, 02-Sep 01, 03
223	Ms Rajandeep Kaur	4/5, Central Poultry Breeding Farm, Chandigarh	Electrical	Sep 05, 02-Sep 04, 03
224	Ms Harpreet Kaur	C-13, Sugar Mill Nakoda, Jalandhar	AEID	Sep 03, 02-Sep 02, 03
225	Ms Navroop	3067, Sector 71, Mohali	MFD	Sep 02, 02-Sep 01, 03
226	Mr Iqbal Singh	3864, Sector 22-D, Chandigarh	Electrical	Sep 04, 02-Sep 03, 03
227	Mr S Nadminity	2846, Sector 66, Mohali	CMW	Sep 02, 02-Sep 01, 03
228	Mr Maninder Singh	HL-138, Phase-2, Mohali	Electrical	Sep 09, 02-Sep 08, 03
229	Ms Poonam Dautoo	4/5, Central Poultry Breeding Farm, Chd.	Electrical	Sep 09, 02-Sep 08, 03
230	Ms Renu	3427, Sector 40-D, Chandigarh	COD	Sep 12, 02-Sep 11, 03
231	Ms Monica Singla	TTTTI, Sector 26, Chandigarh	PID	Sep 17, 02-Mar 16, 03
232	Mr Ved Pal	640, Ramdarbar, Chandigarh	AOPD	Sep 17, 02-Sep 16, 03
233	Mr Gurdeep Singh	VPO Barsalpur, Distt. Ropar	COD	Sep 13, 02-Sep 12, 03
234	Ms Poonam Gupta	445, W.No.12, Sodianwali Colony, Kurali	GSID	Sep 25, 02-Sep 24, 03
235	Mr Nipun Sharma	233, Lahora Khuda Colony, Chandigarh	CMW	Oct 08, 02- Oct 07, 03
236	Mr Parvinder Singh	3274, Sector 41-D, Chandigarh	MTF	Oct 18, 02- Oct 17, 03
237	Ms Mohinder Kaur	205, Sector 7, Chandigarh	ISTC	Oct 21, 02- Oct 20, 03
238	Mr Mandeep Singh	4560, EWS Types, Maloya, Chandigarh	CMW	Oct 21, 02- Oct 20, 03
239	Ms Rajni	PK Govt. ITI Staff Colony, Gurdaspur	Library	Nov 20, 02-Nov 19, 03
240	Mr Sital Singh	586-A, Sector 46-A, Chandigarh	CMW	Dec 18, 02-Dec 17, 03
241	Mr Daya Shankar	1894, Phase-II, Ram Darbar	ISTC	Jan 30, 03- Jan 29, 04
242	Mr Ashok Kumar	2781, Sector 66, Mohali	GSID	Mar 07, 03-Mar 06, 04

**Graduate Apprenticeship for Degree Holders**

243	Ms Ruchi Luthra	121, Sector 48-A, Chandigarh	MEID	Oct 16, 02-Oct 15, 03
244	Mr Sukhwinder Singh	1507-H-1, Ranjit Nagar, Kharar	MLD	Nov 13, 02-Nov 12, 03
245	Mr Harpreet Singh	Vill. Mamupur, Teh. Kharar, Ropar	MEID	Nov 13, 02-Nov 12, 03
246	Ms Itinder Munick	5171, Modern Housing Complex, Manimajra	AEID	Dec 03, 02-Dec 02, 03
247	Mr Amit Taneja	887, Sector 16, Panchkula	GSID	Dec 27, 02-Dec 26, 03
248	Mr Rajeev Kumar	Near Hill View Pub. School, Sirmour, HP	SMC	Dec 30, 02-Dec 29, 03

**CSIO Scientists Honoured****Dr MA Shamshi, Scientist 'G'**

Awarded prestigious "13<sup>th</sup> IETE - Hari Ramji Toshniwal Gold Medal" for the year 2001 for his outstanding contribution in the area of research, design and development of advanced instrumentation. The award consists of a Gold Medal and a Citation. Dr Shamshi has designed and produced Intelligent Instruments and Digital Data Telemetry Networks for 'Natural Disaster Mitigation'.

**Dr MSN Srinivas, Scientist 'EII' and Mr VML Narasimham, Emeritus Scientist**

The Gian Chand Memorial Foundation conferred "Scientist of the Year Award" jointly upon Dr MSN Srinivas and Mr VML Narasimham of CSIO, during the 13<sup>th</sup> Gian Chand Jain Memorial Lecture held at Ambala on 22<sup>nd</sup> October, 2002. The award was given to the scientists for their contribution in developing "Head Up Display for Light Combat Aircraft (LCA)". It was presented by Dr R Chidambaram, Principal Scientific Advisor to the Government of India.

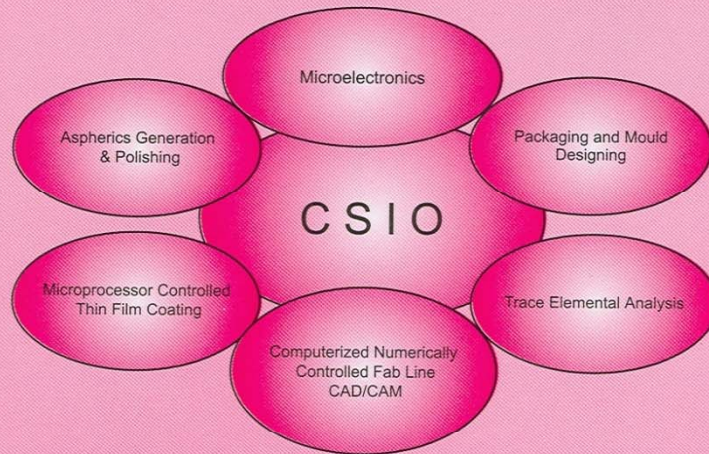
**Mr PS Malhotra, Scientist 'G'**

Bharat Jyoti Award for "Enriching Human Life and Outstanding Attainments" and a Certificate of Excellence for Meritorious Services was conferred on Mr PS Malhotra, Scientist G, Medical Linac Division, CSIO on 26<sup>th</sup> October 2002.

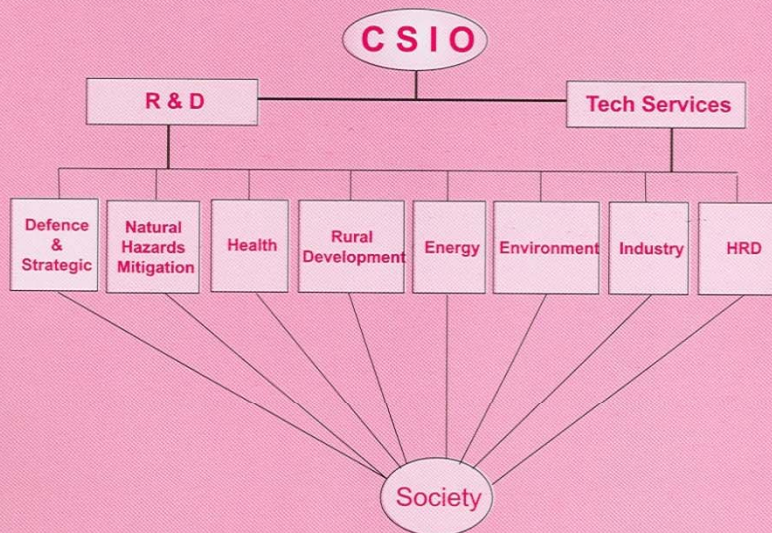
**Mr RN Sengupta, Scientist 'F'**

Dr Myung Se Kims Award of "Excellence in Hyperthermic Oncology" for the year 2002 was conferred on Mr RN Sengupta for his singular contribution in the development of RF Hyperthermia and presentation of a research paper "Design of an Asymmetrical Intracavitary Capacitive Applicator based RF Hyperthermia & Thermal Mapping". The award was presented during the conference on Hyperthermic Oncology and Medicine, organized by Indian Association of Hyperthermic Oncology at Mumbai, during April 5-6, 2003.





**ULTRA MODERN INFRASTRUCTURAL FACILITIES**



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