

## II B. PROGRAMME AIMED AT TECHNOLOGICAL SELF RELIANCE

### 1. OBJECTIVES

The activity pertaining to Programme Aimed at Technological Self Reliance (PATSER) aims at catalyzing and supporting activities relating to technology absorption, adaptation and demonstration including capital goods development, involving industry and R&D organizations. The objectives of PATSER include:

- ☞ Supporting industry for technology absorption, development and demonstration.
- ☞ Building indigenous capabilities for development and commercialisation of contemporary products and processes of high impact.
- ☞ Involvement of national research organisations in joint projects with industry.

### 2. ACTIVITIES

The specific activities under PATSER are listed in the following paragraphs:

#### 2.1 Financial Support to Research, Development, Design and Engineering (RDDE) Projects of Industry

The Department provides on a selective basis partial financial support to research, development, design and engineering (RDDE) projects proposed by industry in the following areas:

- ☞ Development and demonstration of new or improved product and process technologies including those for specialised capital

goods, for both domestic and export markets.

- ☞ Absorption and up-gradation of imported technology.

The partial financial support by DSIR in the above areas primarily covers prototype development and pilot plant work, test and evaluation of products flowing from such R & D, user trials, etc. Bulk of the cost of the project is met from industry's resources.

The Department under PATSER Scheme has so far supported about 132 R&D projects of Industrial units. These projects cover products and processes in various important industries such as metallurgy, electricals, electronics, instrumentation, mechanical engineering, earth moving and industrial machinery, chemicals and explosives.

During the year, the progress of over 80 on-going projects of industries supported under PATSER were reviewed. About 20 responses from industrial units seeking further details about the scheme and indicating their technology development projects were received by the Department. Till December 2002, 14 project proposals recommended by the Technical Advisory Committee (TAC) of PATSER for partial financial support are being processed for financial approval. In addition, 20 proposals were evaluated for aspects such as their novelty, commercial potential, track record of executing agencies and collaborating agencies (wherever

associated). Based on this, 13 projects are being submitted for consideration of the Technical Advisory Committee to PATSER.

The highlights of various projects under PATSER Scheme and at various stages of completion are indicated in the following paragraphs during the year are as given below:

### 2.1.2 Completed Projects

*Bharat Earth Movers Ltd., Bangalore and Electronics Research & Development Centre (ER&DC), Thiruvananthapuram*

The project by Bharat Earth Movers Ltd., Bangalore and ER&DC, Thiruvananthapuram, on 'Development of Unified Electronic Controller for Off-Highway Dump Trucks' has been supported by DSIR with a financial support of Rs. 16.5 lakhs out of a total Project outlay of Rs. 33.6 lakhs. Prototypes have been developed.

*CBRI, Roorkee / CPRI, Bangalore*

All the activities in the project for development of various products such as tiles, bricks and other items based on marble waste of Rajasthan with DSIR support of Rs.11.5 lakhs undertaken by CBRI, Roorkee and CPRI, Bangalore have been completed. The Rajasthan Government. has shown considerable interest in the project.

*Dolphin International Cooperative Society Ltd., Vizianagaram*

The project by Dolphin Industrial Cooperative Society on

'Development of Glazing on Terracotta Clay Products' has been supported by DSIR with a financial support of Rs. 27 lakhs out of a total project outlay of Rs. 55.33 lakhs.

*Indchem Research and Development Laboratory (IRDL), Chennai and Semiconductor Complex (SCL), Chandigarh*

The joint project by IRDL, Chennai, and SCL, Chandigarh, on 'Development of MPEG-2 Decoder' has been supported by DSIR with a financial support of Rs. 70 lakhs out of a total project outlay of Rs. 185 lakhs.

*Instrument Research Associates Pvt. Ltd., Bangalore*

The project on 'Design and Development of prototype making of CNC controlled plastics switch board panel maker' was supported by DSIR with a financial support of Rs. 8 lakhs out of a total project outlay of Rs. 21.5 lakhs. The machine has been developed and all experimentation and trials have been carried out.

*Intra Industries, Pune*

The project by Intra Industries, Pune, on 'Development of 22.5 KVA Inverter for Railways' has been supported by DSIR with a financial support of Rs. 21.8 lakhs out of a total project outlay of Rs. 63 lakhs. The prototype has been developed.

*Mata Foundation, New Delhi and RRL, Thiruvananthapuram*

The project by MATA Foundation

and RRL Trivandrum on 'Integrated Pilot Demonstration Plant for Spice Processing' has been supported by DSIR with a financial support of Rs. 60 lakhs out of a total project outlay of Rs. 135.5 lakhs.

*National Research Development Corporation (NRDC), New Delhi and Aesthetic Technologies, Kolkata*

The joint project by National Research Development Corporation and Aesthetic Technologies on 'Interactive Multimedia for IPR Training' has been supported by DSIR with a financial support of Rs. 20 lakhs out of a total project outlay of Rs. 40 lakhs.

*Semiconductor Complex Ltd. (SCL), Chandigarh and Centre for Development of Advanced Computing (C-DAC), Pune*

The joint project of SCL, Chandigarh and C-DAC, Pune is for the development of 'ASIC (Application Specific Integrated Circuit) for Indian languages computing system GIST II and the related card' involving DSIR support of Rs. 30 lakhs out of total project cost of Rs. 50 lakhs. The ASIC has been fabricated at SCL.

*Semiconductor Complex Ltd. (SCL), Chandigarh and Electronics Research & Development Centre (ER&DC), Thiruvananthapuram*

The joint project by SCL, Chandigarh and ER&DC, Thiruvananthapuram, on 'Development of ASIC based STD-PCO has been supported by DSIR with a financial support of Rs. 32.5 lakhs

out of a total project outlay of Rs. 99.64 lakhs. The project has resulted in successful development and demonstration of FPGA (Field Programmable Gate Array) based STD-PCO machine. Technology Transfer activities have also been initiated by ER&DC.

*Shyam Telecom Ltd., Gurgaon*

The Project by Shyam Telecom Ltd., on 'Design and Development of Remote Energy Metering System (REMS)' has been supported by DSIR with a financial support of Rs. 54 lakhs out of a total Project outlay of Rs. 147.8 lakhs.

*Tamilnadu Zrai Ltd., Kancheepuram*

The project by Tamil Nadu Zari Ltd. on 'Establishment of a Technology Demonstration Facility for Super Fine Wire Drawing of Silver Alloy for ZARI Application' has been supported by DSIR with a financial support of Rs. 19 lakhs out of a total project outlay of Rs. 69.96 lakhs.

*Webel Mediatronics Ltd., Kolkata*

The project by Webel Electronics Ltd. on 'Development of Computerised Braille Transcription Systems for automatic and speeded transcription of English and Indic language texts' has been supported by DSIR with a financial support of Rs. 16 lakhs out of a total project outlay of Rs. 32 lakhs.

*Zen Technologies Ltd., Secunderabad*

The project by Zen Technologies Ltd., Secunderabad on 'Interactive

Small Arms Training Software - Intensive computer based training aid meant to help trainees to perfect advanced marksmanship skills including skills based on judgement and reflex' has been supported by DSIR with a financial support of Rs. 60 lakhs out of a total project outlay of Rs. 138.7 lakhs. Prototype developed.

### **2.1.2 Projects for which completion formalities are in process**

*Ardee Business Services Pvt. Ltd., Vishakhapatnam*

The project by Ardee business Services Pvt. Ltd., Vishakhapatnam, on 'RAMDARS-Coal dry Beneficial system' has been supported by DSIR with a financial support of Rs. 70 lakhs out of a total project outlay of Rs. 147.3 lakhs. Pilot plant has undergone extended testing at SCCL.

*Indus Natural Products Pvt. Ltd., Pune and National Chemical Laboratory, Pune*

This joint project of Indus Natural Products Pvt. Ltd., Pune and National Chemical Laboratory, Pune is for 'Development of Technology for L(+) Tartaric Acid, and Salts or Derivatives thereof, Pectin and Fruit Sugar from the Fruit of Tamarind' with DSIR support of Rs. 16.5 lakhs out of total project cost of Rs. 33 lakhs. The present project on tartaric acid is proposed to be manufactured from a totally new raw material tamarind. The process has been developed by NCL Laboratory, Pune and it has been scaled up to a pilot plant scale of 350 kg. raw material per batch basis by Indus

Natural Products Pvt. Ltd., Pune. Pilot plant trial activities have been completed. The firm submitted the completion report.

*Innovative Communications Systems Ltd., Hyderabad*

The project of Innovative Communication System Ltd., Hyderabad for "Development Voice Enabled Web" has been supported by DSIR with a financial support of Rs. 13.50 lakhs out of total project cost of Rs. 51.14 lakhs. Prototypes developed.

*Karnataka Hybrid Microdevices, Bangalore*

The project by M/s Karnataka Hybrid Microdevices, Bangalore on 'Innovative Microelectronic Packaging Technology for Automobile under Hood Applications' has been supported by DSIR with a financial support of Rs. 38 lakhs out of a total Project outlay of Rs. 101 lakhs. Pilot plant has been set up and prototypes of hybrid circuits have been developed and tested by Lucas-TVS.

*Mecpro Heavy Engg. Ltd., New Delhi*

The project by M/s Mecpro Heavy Engg. Ltd., on 'Efficient Extraction plant' has been supported by DSIR with a financial support of Rs. 35 lakhs out of a total Project outlay of Rs. 95 lakhs. The prototypes of equipments have been developed and have been installed in the plant. The performance testing & trials in the plant have been completed satisfactorily.

*Priya Bricks (P) Ltd., New Delhi*

The project by Priya Bricks (P) Ltd., on 'Development and Demonstration of Stiff Extrusion Technology for Extruding Solid, Perforated and Hollow Building Blocks' has been supported by DSIR with a financial support of Rs. 45 lakhs out of a total project outlay of Rs. 97.8 lakhs. The plant has been commissioned and different types of bricks have been produced in the automatic plant. The bricks produced in the plant have been tested at IIT, Delhi. The activities in the project have been completed satisfactorily.

*Praj Industries Ltd., Pune*

The project by Praj Industries Ltd., Pune on 'Development and Demonstration of BIOMAC - Mechanised Accelerated Biocomposting Technology' for treating, at pilot plant level, distillery effluents and for producing bio-compost material, has been supported by DSIR with a financial support of Rs. 49 lakhs out of a total project outlay of Rs. 117 lakhs. The pilot plant has been commissioned and performance trials have been completed successfully.

*Praj Industries Ltd., Pune*

The project by Praj Industries Ltd., Pune, on 'Development and Demonstration of Energy Efficient Drying Systems' has been supported by DSIR with a financial support of Rs. 24 lakhs out of a total Project outlay of Rs. 49.5 lakhs. The pilot plant of the ring dryer has been developed and various feed materials have been tested in the pilot plant to

establish parameters for efficient ring dryer system.

**2.1.3 Projects Nearing Completion***Ace Designers Pvt. Ltd., Bangalore*

The project by Ace Designers Pvt. Ltd., Bangalore on 'Development of P.C. based CNC Machining system' has been supported by DSIR with a financial support of Rs. 35 lakhs out of a total Project outlay of Rs. 99.13 lakhs. The PC based CNC system has been fitted on the lathe machine and trials are being undertaken. The project is nearing completion.

*Ashok Leyland Ltd., Chennai and Electronics Research Development Centre of India, Thiruvananthapuram*

The joint project of Ashok Leyland Ltd., Chennai and Electronics Research Development Centre of India, Thiruvananthapuram for 'Development of Hybrid Electric Vehicle With Vector Controlled Induction Motor for Propulsion' has been supported by DSIR with a financial support of Rs. 45 lakhs out of a total Project outlay of Rs. 134 lakhs. Prototypes have been developed and the company exhibited the Hybrid Electric Vehicle in the Auto Expo 2002 in Delhi.

*Atcom Technologies Ltd., Mumbai*

The project by Atcom Technologies Ltd., on 'Technology Development of Microbalance of 200gm Capacity With 1.0 mg Accuracy and High Dynamic Range' has been supported by DSIR with a financial support of Rs. 28.5 lakhs out of a total Project

outlay of Rs. 76.3 lakhs. Two prototypes have been developed and tested at NPL, New Delhi. A number of prototypes have been developed and tested for customers evaluation.

*Autopal Industries Ltd., Jaipur*

The project by Autopal Industries Ltd., Jaipur, on 'Development of Metal Halide Lamps Including ARC Tube And Electronic Control Gear' has been supported by DSIR with a financial support of Rs. 50 lakhs out of a total project outlay of Rs. 145 lakhs. Development of the ARC tube has already been achieved under the project.

*Bharat Earth Movers Ltd., Bangalore*

The project by Bharat Earth Movers Ltd., Bangalore on 'Development of Cast Crank Shafts' has been supported by DSIR with a financial support of Rs. 27 lakhs out of a total Project outlay of Rs. 67 lakhs. The prototype of the S.G. Iron Crank Shaft fitted in an Engine has completed all tests satisfactorily. The prototype of Austempered Ductile Iron (ADI) Crankshaft has been developed and tested for engine endurance test.

*Bilt Chemicals Ltd., Secunderabad*

The project by BILT Chemicals Ltd., on 'Development of Technology for Tetra Bromo Bisphenol-A (TBBA) on a Pilot Plant Level' has been supported by DSIR with a financial support of Rs. 350 lakhs out of a project outlay of Rs. 1447 lakhs. ICT, Hyderabad has been collaborating in the project. The

Trials at the Pilot plant at Ankleshwar have been completed. The trials at the pilot plant at Karwar have been carried out. The project is in advanced stages.

*Fluidtherm Technology Pvt. Ltd., Chennai*

The project by Fluidtherm Technology Pvt. Ltd., Chennai on 'Developing a Novel Heat Treatment Furnace' has been supported by DSIR with a financial support of Rs. 50 lakhs out of a total project outlay of Rs. 149.3 lakhs.

*I B P Co. Ltd., Gurgaon*

The project by IBP, Gurgaon (with the assistance of CMRI, Dhanbad) on 'Development of Heat Resistant Explosives' has been supported by DSIR with a financial support of Rs. 18.5 lakhs out of a total Project outlay of Rs. 65.4 lakhs. Field trial of Heat Resistant Explosive has been completed at 80° C and 100° C. The project is in advanced stages.

*Lifecare Innovations Pvt. Ltd., New Delhi*

The project by Lifecare Innovations Pvt. Ltd., New Delhi, on 'Scale-up Process Development of Liposomal Amphotericin – B, Awareness programme and Clinical Performance Trials' has been supported by DSIR with a financial support of Rs. 50 lakhs out of a total Project outlay of Rs.149.76 lakhs.

*Maharashtra State Seeds Corporation Ltd., Akola*

The project by Maharashtra State

Seeds Corporation Ltd. on 'Development and Testing of Mini Dry HCl Gas Cotton Seed Delinting Plant.' has been supported by DSIR with a financial support of Rs. 31 lakhs out of a total project outlay of Rs. 93 lakhs.

*Sankar Sealing Systems (P) Ltd., Chennai*

The project by Sankar Sealing Systems (P) Ltd., Chennai, on 'Development and Indigenising of Asbestos Free Cylinder Head Gaskets for TATA Indica Diesel Cars' has been supported by DSIR with a financial support of Rs. 27 lakhs out of a total Project outlay of Rs. 69.7 lakhs.

*Southern Petrochemical Industries Corporation Ltd., (SPIC), Chennai and Indian Institute Of Chemical Technology (IICT), Hyderabad*

The joint project by SPIC, Chennai and IICT, Hyderabad on 'Development of Process of Manufacture of Pyrazinamide' has been supported by DSIR with a financial support of Rs. 219.5 lakhs out of a total project outlay of Rs. 520 lakhs for treating tuberculosis.

*Turbotech Precision Engineering Pvt. Ltd., Bangalore, National Aerospace Laboratories, Bangalore*

The joint project being executed by Turbotech Precision Engineering Pvt. Ltd., Bangalore in collaboration with NAL, Bangalore is for the development of Low Cost Gas Turbine (LCGT) generator set of 500 KW power class, with multi fuel capability (biogas, piped natural gas

and diesel fuel) involving DSIR support of Rs. 87.37 lakhs out of total project of Rs.361 lakhs. The prototype of Low-cost Gas Turbine System has undergone no-load test successfully. The LCGT system has also undergone satisfactorily all testing & trials at full load at Turbo tech's Turbine Testing Centre, Nelamangla.

*T C M Ltd., Bangalore*

The project by TCM Ltd., Bangalore on 'Development of Carbon-dioxide Route for the Manufacture of Barium Carbonate' has been supported by DSIR with a financial support of Rs. 30 lakhs out of a total project outlay of Rs. 140 lakhs.

*United Telecoms Ltd., Bangalore*

The project by United Telecoms Ltd., Bangalore on 'Design & Development of ADSL (Asymmetric Digital Subscriber Line)' has been supported by DSIR with a financial support of Rs. 55 lakhs out of a total project outlay of Rs. 127 lakhs. The prototype has been developed.

#### **2.1.4 Projects under Progress**

*Anirox Pigments Limited, Kolkatta*

The project of Anirox Pigments Limited, Calcutta (works at Dhanbad) is for 'Development of Stable Oil in Water Ink Emulsion, Based upon Water Reducible Nigrosine Dyes for Ink Jet Computer Printers' with a DSIR support of Rs. 50.00 lakhs out of a total project cost of Rs.147.00 lakhs. The firm at present is engaged in the production of Nigrosine Dye which finds many

applications, one of which is in ink industry.

*Anu's Laboratories Ltd., Hyderabad*

The project by Anu's Laboratories Ltd., Hyderabad on 'Development of Process for manufacturing of 1-Bromo 3-Chloro Propane (BCP) and 1,3-Dibromo Propane (DBP) in Pilot Plant' has been supported by DSIR with a financial support of Rs. 64 lakhs out of a total Project outlay of Rs.130 lakhs.

*Atcom Technologies Ltd., Mumbai*

The project by Atcom Technologies Ltd., on 'Development of Load cells' has been supported by DSIR with a financial support of Rs. 68 lakhs out of a total project outlay of Rs. 149 lakhs. The prototypes of different types of load cells have been developed and are under testing at NPL. The dead weight machine for testing accuracy of the load cells has been developed by NPL, New Delhi and supplied to Atcom Technologies Ltd. Prototypes of few load are being send to International organisations for certification.

*Bharat Heavy Electricals Ltd., Bangalore*

The project by Bharat Heavy Electricals Ltd., Bangalore on 'Development of ASIC Based Energy Meter' has been supported by DSIR with a financial support of Rs. 23 lakhs out of a total project outlay of Rs. 46 lakhs.

*Bharat Pumps and Compressors Ltd., Allahabad*

The project by Bharat Pumps And Compressors Ltd., on 'Development of Twin Casing Fly Ash Slurry Pump' has been supported by DSIR with a financial support of Rs. 25 lakhs out of a total project outlay of Rs. 60 lakhs. The material specimens have been sent to IIT, Delhi for testing and design has been frozen.

*Bharavi Laboratories Pvt. Ltd., Bangalore*

The project by Bharavi Laboratories Pvt. Ltd., Bangalore, on 'Development of Novel Resins for use in Solid Phase Organic Synthesis and Combinatorial Chemistry' has been supported by DSIR with a financial support of Rs.20.45 lakhs out of a total project outlay of Rs.66.05 lakhs.

*Canpex India, Pune*

The Project by Canpex India, Pune on 'Setting Up of Pilot Plant For Production of 1T/day High Purity (72-80%) Calcium Cyanamide' has been supported by DSIR with a financial support of Rs. 35 lakhs out of a total project outlay of Rs. 120.74 lakhs. Due to explosion in the factory; the progress of the project is delayed.

*Castron Technologies Ltd., Dhanbad*

The project by Castron Technologies Ltd., Calcutta on 'Development of Indigenous Technology for Phenanthrene and 9:10 Phenanthrenequinone' in collaboration with Central Fuel Research Institute (CFRI), Dhanbad has been supported



by DSIR with a financial support of Rs. 35 lakhs out of a total project outlay of Rs. 77 lakhs.

*Central Electronics Ltd, Sahibabad*

The project by Central Electronics Ltd., Sahibabad on 'Development of Digital Axle Counter' has been supported by DSIR with a financial support of Rs. 70 lakhs out of a total Project outlay of Rs. 146 lakhs. The 2 x 2 digital axle counter has been fabricated, tested and one prototype which has been installed between Delhi Mathura route, is functioning well. The prototype of 2 x 2 and 2 x 3 digital axle counter are under development.

*Carbon Resources Pvt. Ltd., Giridih, Jharkhand*

The project of Carbon Resources Pvt. Ltd., Giridih, Jharkhand is for 'Development of Technology for State of the Art Coal Tar Pitch and Carbon Paste' with a DSIR support of Rs.37.00 lakhs out of a total project cost of Rs.86.00 lakhs. Coal Tar Pitch is used in steel plants, aluminum plants, refractories, etc. while carbon paste is used as an electrode in aluminum industries, ferro alloys and other alloys industries. The objective of the pilot plant is to generate the data for optimisation of parameters like resistivity, plasticity, conductivity, temperature, ratio, calcined petroleum coke and coal tar pitch, etc, for having better performance. The development of better quality product will ultimately reduce the resistivity of carbon electrode resulting in savings of electricity

since the user industries are heavily dependent on electricity.

*Elkay Chemicals Pvt. Ltd., Pune*

The project of Elkay Chemicals Pvt. Ltd., Pune is for 'Development of Next Generation Amino Silicon based on hydrosilation technology' with a DSIR support of Rs.30.00 lakhs out of a total project cost of Rs.83.00 lakhs. The hydrosilation process avoids import of silicones - a prohibited costly material. The formulations of amino silicones find applications in textile finishing, personal hygiene, etc. The company has informed to have developed a better route for the production of the product and is carrying out experiment at lower scale. After perfecting at lower scale they will go for the proposed pilot plant.

*Farcom Cable Systems (P) Ltd., Bangalore*

The project by Farcom Cable Systems (P) Ltd., Bangalore on 'Development of Flame Retardant Low Smoke Material For Wires and Cables for Shorting Applications' has been supported by DSIR with a financial support of Rs. 50 lakhs out of a total project outlay of Rs. 104.5 lakhs.

*Gland Pharma Ltd., Hyderabad*

The project by Gland Pharma Ltd., Hyderabad on 'Pilot Scale Manufacture of Hyaluronic Acid Formulations' has been supported by DSIR with a financial support of Rs. 46 lakhs out of a total project outlay of Rs.139.05 lakhs.

*General Exports & Credits Ltd., New Delhi And Dalmiya Centre For Biotechnology (DCBT), Coimbatore*

The project by General Exports & Credits, New Delhi, in collaboration with Dalmiya Centre for Biotechnology, Coimbatore, and Indian Institute of Chemical Technology, Hyderabad, on 'Development of Azadirachtin-A Technical from Neem Seeds Kernels and its Formulations' has been supported by DSIR with a financial support of Rs. 65 lakhs out of a total project outlay of Rs. 248.97 lakhs. IICT, Hyderabad has been entrusted with the task of designing and engineering of the pilot plant. The company has informed that the demand of Azadirachtin-A has come down in the world market. Due to demand shrinkage the company has requested for reduction in size of the pilot plant which is being examined.

*Mata Foundation, New Delhi & CFTRI, Mysore*

The project of Mata Foundation and CFTRI, Mysore on integrated pilot demonstration plant for fruit processing has been supported by DSIR with a financial support of Rs. 100 lakhs out of total project cost of Rs. 319.79 lakhs.

*Mak Controls and Systems (P) Ltd., Coimbatore*

The project by Mak Controls and Systems (P) Ltd., Coimbatore, on 'Design, Development and Trial and Testing of Mak World Tracker' has been supported by DSIR with a financial support of Rs. 92 lakhs out

of a total project outlay of Rs. 253.88 lakhs.

*Natco Pharma Ltd., Secunderabad*

The project by Natco Pharma Ltd., Secunderabad, on 'Development of pilot level anaerobic reactor to pharmaceutical waste' in collaboration with Indian Institute of Chemical Technology (IICT), Hyderabad has been supported by DSIR with a financial support of Rs. 30 lakhs out of a total project outlay of Rs. 98 lakhs.

*National Aluminium Company Ltd., (NALCO), Bhubaneswar*

The project by NALCO, Bhubaneswar on 'Recovery of Gallium from Sodium Aluminate Liquor' has been jointly supported by DSIR along DST, DRDO and NRDC. The support by DSIR is Rs. 217 lakhs out of a total project outlay of Rs. 1277 lakhs. The project is in progress. Designs of the plant have been completed and pollution clearance is awaited before starting civil works.

*Organic Coatings Limited, Mumbai*

The project for '(i) Water-based flexo inks used for absorbent stock (craft paper) and coated stock (art paper, etc.); and (ii) UV radiation curing inks used for coated stock and non-absorbent substrates such as PVC, Polyester, etc.' has been taken up by M/s Organic Coatings Ltd., Mumbai with a DSIR support of Rs.25.00 lakhs. The total project cost is Rs.91.585 lakhs. The flexo inks will be used in packaging materials, composite films, aluminum foils,

plastic and paper labels, wall covers, envelopes decoration materials and other specialized papers. Similarly, radiation curing inks are energy efficient as well as improves the life of specialty paper product such as currency notes, etc. .

*Orient Software Pvt. Ltd., Bangalore and Indian Institute of Science, Bangalore*

The project by Orient Software Pvt. Ltd., Bangalore in collaboration with Indian Institute of Science, Bangalore on 'Development of system for aiding in the intelligent computer aided design for casting' was supported by DSIR with a financial support of Rs. 25 lakhs out of a total project outlay of Rs. 53.68 lakhs.

*PSG Industrial Institute, Coimbatore*

The project by PSG Industrial Institute, Coimbatore, on 'Development of Frequency Converter/Controller and High Frequency Submersible Motor Pump Sets For Irrigation' has been supported by DSIR with a financial support of Rs. 6 lakhs out of a total project outlay of Rs. 13 lakhs. The motor for this pump has been specifically designed, fabricated and tested at full load. The pump and controller has been designed and developed. The trials and modifications are in progress. This project is likely to create a good demand in the agricultural sector.

*Parag Fans And Cooling Systems Ltd., Dewas*

The Project by Parag Fans and

Cooling Systems Ltd., on 'Development of Energy Efficient Fan System' has been supported by DSIR with a financial support of Rs. 28 lakhs out of a total Project outlay of Rs. 72 lakhs. The prototype fans of 1400 and 1600 mm sizes have been designed and fabricated using the FRP. Both the fans have been tested on the conventional fan systems. The fabrication of 1400 mm fan system has been completed and tested in-house and fabrication of 1600 mm fan is in progress.

*Punjab Agro Industries Corporation, Chandigarh*

The project by Punjab Agro Industries Corporation, Chandigarh, on 'Setting up a pilot plant for production of Cellulose Silica Lignin and Protein Rich Food for Human Consumption from Rice Straw' has been supported by DSIR with a financial support of Rs. 100 lakhs out of a total project outlay of Rs. 210 lakhs.

*Pennwalt India Ltd, Mumbai*

The project by Pennwalt India Ltd, Mumbai, on 'Coating of chemical process equipment with fluoropolymers and other high performance powders' has been supported by DSIR with a financial support of Rs. 20 lakhs out of a total project outlay of Rs. 67.05 lakhs..

*Priya Klay (P) Ltd., New Delhi*

The project by Priya Klay (P) Ltd., New Delhi on 'Development of Technology and equipment for production of Large Diameter Stoneware / Vitrified Clay pipes' has

been supported by DSIR with a financial support of Rs. 60 lakhs out of a total project outlay of Rs.148 lakhs.

*Rishabh Instruments (P) Ltd., Nasik*

The project by Rishabh Instruments (P) Ltd., Nasik for Design, Development and Manufacturing of 5  $\frac{3}{4}$  and 6  $\frac{3}{4}$  digit multimeters has been supported by DSIR with a financial support of Rs. 55 lakhs and a total project cost of Rs.135.70 lakhs

*S B Electro-Mechanicals (P) Ltd., Pune*

The project by S B Electro-Mechanicals (P) Ltd., Pune on 'Development to Complete the RADAR Level Gauging Systems' has been supported by DSIR with a financial support of Rs. 16.49lakhs out of a total project outlay of Rs. 34.62 lakhs.

*Semiconductor Complex Ltd. (SCL), Chandigarh and Bharati Telecom Ltd. (BTL), New Delhi*

The project by SCL, Chandigarh and BTL, New Delhi, on 'Development of Technology For Production of Single Chip Telephone ICs and Telephone Instruments Based on Single Chip Telephone ICs' has been supported by DSIR with a financial support of Rs. 35 lakhs out of a total project outlay of Rs. 89 lakhs.

*Semiconductor Complex Ltd. (SCL), Chandigarh And S M Electronics &*

*Services Ltd., New Delhi (now known as SM Telesys Ltd.)*

The project by SCL Chandigarh and SMES Ltd., New Delhi, on 'Development of Bilingual Pager based on ASIC' has been supported by DSIR with a financial support of Rs. 40 lakhs out of a total project outlay of Rs. 94.9 lakhs.

*Semiconductor Complex Ltd. (SCL), Chandigarh And Shree Pacetronix Ltd., Indore*

The project by SCL, Chandigarh and Shree Pacetronix Ltd., Indore, on 'Design & Development of Indigenous Pacemaker Based on Single Chip and The Programming Unit' has been supported by DSIR with a financial support of Rs. 40 lakhs out of a total project outlay of Rs. 90 lakhs.

*S M Creative Electronics Ltd., Gurgaon*

The project by SM Creative Electronics Ltd., Gurgaon on 'Development of Miniature DC/DC Converter for Line Cards' has been supported by DSIR with a financial support of Rs. 10 lakhs out of a total project outlay of Rs. 28.6 lakhs.

*SPIC Ltd., (Pharmaceutical Division), Chennai and CECRI, Karaikudi*

The Joint project by SPIC Ltd., Pharmaceutical Division, Chennai and Central Electrochemical Research Institute (CECRI), Karaikudi 'Development of Technology for 3-Chloromethyl-D3-Cephams Ester from Pen GK' has

been supported by DSIR with a financial support of Rs. 66 lakhs out of a total project outlay of Rs. 149.45 lakhs.

*Steel Strips Wheels Ltd., Chandigarh*

The project by Steel Strips Wheels Ltd., Chandigarh on 'Technology Development and Demonstration of Automotive Wheel Rims Through Modified Manufacturing Process' has been supported by DSIR with a financial support of Rs. 50 lakhs out of a total project outlay of Rs.130.60 lakhs.

*Trident Industries Ltd., Noida*

The project by M/s Trident Industries for Development of optical pickup for CD mechanism has been supported by DSIR with a financial support of Rs. 40 lakhs out of total project cost of Rs. 128 lakhs.

*Transasia Biomedicals Ltd., Mumbai*

The project by Transasia Biomedicals Ltd., Mumbai, on 'Development of Fully Automatic High Speed Blood Chemistry Analyser, Model XL-100' has been supported by DSIR with a financial support of Rs. 90 lakhs out of a total project outlay of Rs. 226 lakhs.

*United Telecoms Ltd., Bangalore*

The project of United telecom Ltd., Bangalore for "Development of ATM Access Multiplexer" has been supported by DSIR with a financial support of Rs. 40.50 lakhs out of total project cost of Rs. 134.90 lakhs.

## 2.2 Customs Duty Exemption Certificate

In pursuance to Customs Notification No.50/96 Customs dated July 23, 1996 for Customs Duty Exemption on components, consumables, equipments etc. used in R&D projects supported by Government, 4 Customs Duty Exemption certificates for nearly Rs.60 lakhs worth of components and consumables under 3 technology development projects supported under PATSER scheme of DSIR have been issued.

## 2.3 Technopreneur Promotion Programme (TePP)

The "Technopreneur Promotion Programme" (TePP) is an initiative, jointly operated by DSIR under its PATSER Scheme of TPDU programme and DST under its Home Grown Technology Programme (HGPT) of TIFAC, to tap the vast innovative potential of the citizens of India. Under the initiative, financial support is provided to individual innovators having original ideas to convert them into working models, prototypes, etc. It is expected that 10 projects would be supported during the whole financial year 2002-2003.

## 2.4 Others

The DSIR participated in a number of exhibitions to showcase the strengths and capabilities of R&D projects supported under PATSER and TePP scheme. These include:

- ☞ "Kashmir Vision" at Srinagar (J&K) from 20<sup>th</sup> – 23<sup>rd</sup> June, 2002.

- ☞ “North East Vision 2010” at Guwahati (Assam) from 12<sup>th</sup> – 15<sup>th</sup> December 2002.
- ☞ “Science Expo 2003” at Bangalore University, Bangalore from 3<sup>rd</sup> – 7<sup>th</sup> January 2003
- ☞ “Chem Tech World Expo 2003” at Goregaon, Mumbai from 22<sup>nd</sup> – 26<sup>th</sup> January 2003 (Tentative)
- ☞ “Technovation 2003” at Pragati Maidan, New Delhi from 5<sup>th</sup> – 8<sup>th</sup> February 2003 (Tentative)

The basic aim of these exhibitions was to diffuse and disseminate various information of DSIR activities among concerned scientific groups. Apart from PATSER supported companies, a number of innovators supported under TePP Scheme exhibited their achievements with the help of prototypes / models, charts, etc. during the exhibition held at Bangalore and New Delhi.

## 2.5 Expected Outputs and Benefits

The completed technology development projects supported under PATSER Scheme have resulted in significant technological and commercial returns to the industries concerned such as cost reduction, higher quality, improved products and processes as well as foreign exchange savings, while building up the R&D capabilities of the industrial units. The on going projects are expected to result in high commercial / societal impact and will lead to commercialisation and utilisation of ‘state of the art’ technologies. There have been useful interactions and linkages with other concerned Government departments, National Research Organisations and users during evaluation, approval and implementation of various projects supported under PATSER scheme.