II-C. TECHNOPRENEUR PROMOTION PROGRAMME (TePP)

1. PREAMBLE

Department of Scientific and Industrial Research (DSIR) under its Technology Development and Innovation Programme of TPDU Scheme operates the "Technopreneur Promotion Programme (TePP)". TePP along with its network partners provides grants support is provided to individual innovators having original ideas to convert them into working models, prototypes etc. The department has supported **fifty-six (56)** new projects during the period from January, 2011 to December, 2011. The details of the completed, on-going and approved projects supported under TePP during the current year under report are given in **Annexure-10**. The details of some of the completed projects are given below:

Indigenous Dialysis Device

Dr. Parikshit Bansal a Biochemist and a faculty member at NIPER, Chandigarh has developed a membrane device for carrying out laboratory dialysis, which is a worldwide technology breakthrough-elimination of threads, clamps, syringes and needles due to which sample loading and removal has been made remarkably simple. It is the first such device worldwide to offer 100% accessory- contamination- free processing and it is also first device worldwide to offer the largest volume processing range of 0.1-20 ml in a single unit. It permits sample volume monitoring without sample removal and enables multiple sample processing in parallel, without the need to remove the processed samples from each device one by one. It also has feature which enables sample storage within the device itself, thus ensuring speedy processing and also preventing losses during transfer. The product technology fully developed and device successfully tested in leading national and international labs and being marketed

by Excellion Innovations and Inventions Pvt. Ltd., India (www.wonderlyzer.com) under licensing agreement with the inventor. It is claimed that this is first any such device in its category from India and all other from US or Europe.

Novel plant tissue culture medium from bio-waste – Fly Ash

Dr. Kakoli Biswas – a plant biotechnologist has developed a novel plant cell culture media (as KFA and KFA plus) based on 'fly ash' in which the fly ash acts as a natural, low-cost, balanced source of macro and micronutrients. Fly Ash is the major waste of thermal power plants(TPP) and generated by the combustion of coal. Fly Ash is available free of cost. Product developed is an innovative product, developed for the first time at Global level. It has been compared to the existing Murashige and Skoog's(1962) medium (Hi Media, Mumbai, India) which is the most broadly used medium for plant tissue culture worldwide.

Portable Microscopic Slide Projector (Teaching Aid)

Shri Chandra Narayan Bairgya, a retired school teacher has developed a portable microscopic slide projector(teaching aid) , which is small and inexpensive. The proposed device may replace the conventional microscopes being currently used for

teaching. The portable microscopic slide projector(teaching aid) makes use of inexpensive and light-weight LEDs as the light source, a condenser with filter that acts as a diaphragm, a set of high power condensers, a set of high power compound lenses, a clip loaded holder for accommodating microscopic slides. The assembly is mounted on a detachable stand affording letter portability. The device affords multiple viewing from a standard set of slides, saving time of the teacher and leads to better group interactions. The novelty of the product lies in the indigenous utilization and assimilation of the known laws of optics for developing the device.

Self propelled three row potato seeding device for restricted land holdings

Shri Abdul Aziz , a science teacher, farmer and entrepreneur has developed a self propelled three row potato seeding device to perform the tasks of digging furrows at proper depths for planting

potatoes, planting the seed potatoes at the proper depth and providing soil cover for the protection and eventual germination of the seeds. The device comprises a Seed Hopper for accommodating seed potatoes, three Seed cups that distribute the seed potatoes along three rows, a diesel engine as the prime mover for self propulsion, a set of traction wheels at the front, a set of balance wheels at the rear, three sets of metallic wings for providing soil cover after the plantation of the seeds and three digging blades for providing the proper depth. Propulsion is provided by the diesel engine (5 HP – 12 HP) via a reduction gear box to the traction wheels. A part of the power provided to the traction wheels is fed back to rotate a shaft on which the seed cups are mounted. As the shaft rotates, the individual cups pick up the seed potatoes and distributes them along the three furrows.

Nimble carpet shearing machine

Shri Nandu Kumar Dongre an entrepreneur has developed an improved shearing path and design for shearing machine to ensure faster carpet finishing with less work load on carpet finisher as compared to traditional carpet shearing machine.

This Carpet Shearing machine may provide less drudgery to artisans and less time for carpet finishing. The machine also provides improved productivity and uniformity in quality, thereby enabling finishing of wool, silk, pashminas and cotton quality carpets. This energy-efficient and eco-friendly machine causes less stress to the workers and can be easily handled. It provides flexibility to finish hand-knotted Tibetan, Nepali and hand tufted type of carpet on the same machine.

Process optimization and production of novel probiotic consortium (Synshrimp) for eco-friendly Shrimp farming

Shri S. Sujith, a researcher cum scientist has developed a novel Synshrimp probiotic formulation by using marine bacterial endosymbionts, which reduces the possible risk of probiotic bacteria transfer as shrimp pathogens. Synshrimp formulation can be orally administered to the shrimp at a rate of 8g/kg of feed. The major benefits of the probiotics increased the survival rate without affecting the growth rate of the shrimp.

2. OTHER ACTIVITIES

2.1 To expand the reach of TePP among common mass, thirty-four (34) TePP Outreach Centres have been set up by DSIR. These are located at Sponsored Research and Industrial Consultancy (SRIC), IIT Kharagpur (W.B.); Society for Innovation and Entrepreneurship (SINE), IIT Bombay; ERDC-Hartron, Ambala Cantt. (Haryana); Acharya Nagarjuna University, Guntur (A.P.); Technopark, Trivandrum (Kerala); Foundation for Innovation & Technology Transfer (FITT), IIT Delhi; Shri Siddhartha Institute of Technology (SSIT), Tumkur (Karnataka); Science & Technology Entrepreneurs' Park (STEP)-National Institute of Technology (NIT), Surathkal (Karnataka); TREC-STEP, Trichy (T.N.); JSSATE-STEP, NOIDA (U.P.); PSG-STEP, Coimbatore (T.N.); Vellore Institute of Technology-Technology Business Incubator (VIT-TBI), Vellore (T.N.); Central Glass Ceramics Research Institute (CGCRI), Kolkata (W.B.); Institute Industry Partnership (IIP) Cell, IT-BHU, Varanasi (U.P.); SIDBI Innovation & Incubation Centre (SIIC), IIT Kanpur, Kanpur (U.P.); Intellectual Property Rights (IPR) Cell, IIT Roorkee (Uttrakhand) ; College of Technology & Engineering, Udaipur (Rajasthan); National Institute of Technology (NIT) , Silchar (Assam); Institute of Himalayan Bio-resources Technology (IHBT), Palampur (H.P.); Central Mechanical Engineering Research Institute (CMERI), Durgapur (W.B.); Central Scientific Instruments Organisation (CSIO), Chandiharh; National Environmental Engineering Research Institute (NEERI), Nagpur (Maharashtra); Shri Padmavati Mahila Vishwavidyalayam (SPMVV), Tirupati

(A.P.); International Crop Research Institute for Semi-Arid Tropics (ICRISAT), Hyderabad (A.P.), Central Electronics Engineering Research Institute (CEERI), Pilani (Rajasthan); NEIST, Jorhat; TBI-e-Health, Bangalore (Karnataka); Chhattisgarh Swami Vivekanand Technical University (CSVTU), Bhilai (Chhattisgarh); Technology Business Incubator- University of Madras (TBI-UoM), Chennai; University Science Instrumentation Centre(USIC), University of Kashmir, Srinagar; Venture Centre (Entrepreneurship Development Centre), NCL, Pune; National Design Business Incubator(NDBI), National Institute of Design (NID), Ahmedabad; ICICI Knowledge Park, Hyderabad; Uttarakhand State Council for Science & Technology(UCOST), Dehradun.

2.2 A number of other activities organised/ participated by TePP during the year to sensitize academia, disseminate information on TePP to the larger mass of the populace network partners and impact generation among common masses:

- TePP innovators participated in Pride of India Science Exhibition (98th Session of ISC-2011) at SRM University, Chennai [3rd – 7th January, 2011].
- Participation of TePP with E-Cell and Techkriti-11, IIT Kanpur [February 17-20, 2011].
- Participation of TePP in NAVONMESH 2011 – a business plan competition organised by Shailesh J. Mehta School of Management, Indian Institute of Technology Bombay [October 15, 2011].
- TePP innovators participated in TechEx 2011 at Coimbatore [November 25-27, 2011].
- Participation of TePP in Annual Global Conference on Entrepreneurship and Technology Innovation (AGCETI) 2011 at IIT Bombay [December 1-3, 2011].
- TUC network has further been expanded. During the current year two new TUCs are being created at KIIT University, Bhubaneswar and Amity University Uttar Pradesh, NOIDA.

2.3 To diffuse the activities of TePP to a larger mass, an Annual Calendar consisting of profiles of TePP Outreach Centres is under print.