



HIGHLIGHTS OF COMPLETED TECHNOLOGY GRANTS (2013 – 2022)

June 2023

**Technology Developments and Innovations Division
National Science Foundation**

INTRODUCTION

Technology is central to economic growth and social welfare of a country. As such, it is very important to enhance opportunities for technology development and innovation for value creation. The Technology Grant Scheme, “Support for Technology Development (Tech-D)” is aiming at taking research outputs beyond laboratory scales by extending financial support to both state and non-state sector organizations to conduct projects that have potential for creating value. The scheme does not limit the support to those who are attached to an innovation eco-system. It is believed that the innovative capacity of different individuals is very much ignored and untapped. Therefore, many ideas generated in the minds of people cannot be utilized for wealth creation. Very often inventors need financial and sometimes technical support to convert their ideas into practice. Unless seeking support from financial institutions such inventors/technicians become helpless not being able to find required resources. The scheme supports such individuals too by opening the avenue to perform in the innovation gateway.






The objectives of this grant scheme are as follows;






- To promote Technology Driven Innovations (TDI) locally.
- To promote Market Driven Innovation (MDI) locally to meet current and emerging customer needs.
- To promote regionally and globally competitive innovations
- To contribute to enhance socio-economic development and welfare of people.

The scheme focusses on specific output-oriented projects in order to;






- Encourage universities and research institutes to conduct projects leading to technology driven innovations (TDI)/Market Driven Innovations (MDI), based on existing knowledge gained through basic and applied research.
- Strengthen capacity and capability of non-state sector companies (small, medium and large) to conduct activities directed to producing locally, regionally or globally competitive new materials, products or devices, installing new processes, systems and services, or to improving substantially those of already produced or installed and become active partners in the innovation process.
- Assist technologists/ technicians, inventors to develop prototypes/ processes which are of commercial use and have industrial potential.






NSF provides funds for Technology Development Grants for personnel who are capable in developing new technologies required for the country. Funds provided as Grants are public funds. Therefore, it is expected that Grantees are well aware on this and hence responsible for correct use of public funds to produce tangible outcomes which will contribute to national development of the country. It is required to commercialize the outcomes of the projects and therefore, obtaining commercialization IP for the findings are encouraged. Transferring of the new technology developed is also vital for the national development and therefore, transfer of the new technology is also required.







Project	Priority Area	Output
Grants completed in 2013		
<p>TG/2011/Tech-D/01 Development of diesel fuel pump test bench to exportable standard (Install an AC inverter for speed variation)</p> <p>Mr Sarath Uyanhewa Pamunuwa, Maharagama</p>	Engineering	<p>Exportable standard diesel fuel pump test bench was developed.</p> 
Grants completed in 2014		
<p>TG/2011/Tech-D/02 Improvement and field testing of a solar powered lift and carry type milking machine</p> <p>Dr KSP Amarathunga University of Peradeniya</p>	Engineering/ Renewable energy	<p>Solar powered lift and carry type milking machine was developed</p> 
<p>TG/2012/Tech-D/02 Scaling up the invention of spherical container for natural rubber latex industry</p> <p>Mr Sunil Gomes</p>	Engineering	<p>Spherical container was developed for natural rubber latex industry</p> 
<p>TG/2012/Tech-D/07 Assessment of socio-economic viability of simplified hydroponics to improve the household food production and to develop a strategy for commercialization</p> <p>Dr Susil Liyanaarachchi</p>	Agriculture	<p>Assessment of socio-economic viability of simplified hydroponics</p> 
<p>TG/2012/Tech-D/08 Introducing of an energy efficient and environmentally friendly new technology to produce coconut shell charcoal</p> <p>Eng. Banduni Premaratne</p>	Energy	<p>Energy efficient and environmentally friendly new technology was introduced to produce coconut shell charcoal</p> 






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<p>TG/2012/Tech-D/09 To grow the algae Spirulina to overcome malnutrition of children and pregnant & lactating mothers in villages in Sri Lanka</p> <p>Swayang wattedgedara Ltd.</p>	Food & Nutrition	<p>Algae Spirulina was produced to overcome malnutrition of children and pregnant & lactating mothers in villages in Sri Lanka</p> 
<p>TG/2012/Tech-D/11 Development of an Aloe vera (Aloe barbadensis Miller) incorporated ready-to-serve beverage</p> <p>Prof. Ayanthi N Navaratne University of Peradeniya</p>	Food & nutrition	<p>Development of an Aloe Vera drink</p> 
Grants completed in 2015		
<p>TG/2011/Tech-D/03 The three-dimensional coastal surveillance system</p> <p>Prof. ND Kodikara University of Colombo School of Computing</p>	Computer Engineering	<p>Three-dimensional coastal surveillance system was developed</p> 
<p>TG/2011/Tech-D/04 Develop an economical and reliable ammonia-water diffusion absorption refrigeration system (DARS) driven by waste heat for food transportation application in Sri Lanka</p> <p>Mr Nissanka Rajapaksa University of Moratuwa</p>	Engineering	<p>Ammonia-water diffusion absorption refrigeration system (DARS) was developed</p> 
<p>TG/2011/Start-Up/01 Manufacture and marketing of cost effective, environmentally friendly cooking stoves for domestic and commercial cooking purpose</p> <p>Mr Riyad Ismail</p>	Energy	<p>Cost effective and environmentally friendly cooking stoves were developed</p> 





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<p>TG/2012/Tech-D/03 Novel accessible technologies on touch screen devices (NAT-TD)</p> <p>Dr Sohan Dharmarajah</p>	<p>Computer Engineering</p>	<p>Novel accessible technologies were developed for touch screen devices (NAT-TD)</p> 
<p>TG/2012/Tech-D/05 Development of a cost effective, user friendly and efficient single dryer for different types of natural rubber</p> <p>Dr Susantha Siriwardena</p>	<p>Engineering</p>	<p>Cost effective, user friendly and efficient single dryer was developed for different types of natural rubber</p> 
<p>Grants completed in 2016</p>		
<p>TG/2012/Tech-D/01 Design and development of a multi-pass vibro-fluidized-bed dryer for black tea and desiccated coconut industry</p> <p>Prof. DAN Dharmasena University of Peradeniya</p>	<p>Engineering</p>	<p>Multi-pass vibro-fluidized-bed dryer was developed for black tea and desiccated coconut industry</p> 
<p>TG/2012/Tech-D/04 High performance lighter weight prosthetic foot based on hybrid nano material filled natural rubber nanocomposite</p> <p>Dr Upul Ratnayake Rubber Research Institute</p>	<p>Nano technology</p>	<p>High performance lighter weight prosthetic foot based on hybrid nano material filled natural rubber nanocomposite was developed</p> 
<p>TG/2012/Tech-D/10 iMoni 2.0: A Platform as a Service (Paas) to Provide Remote Monitoring of Residential and Industrial Facilities</p> <p>Prof. Dileeka Dias University of Moratuwa</p>	<p>AI</p>	






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<p>TG/2012/Start-up/01 Establishment of a business for manufacturing and marketing of an integrated solid-state fan controller for speed and time regulation</p> <p>Prof. K. K. Y. W. Perera</p>	<p>Engineering</p>	<p>Manufacturing and marketing of an integrated solid-state fan controller for speed and time regulation</p> 
<p>TG/2013/Tech-D/01 Scaling up, stability testing and product testing of urinary glucose strips</p> <p>Prof. C P D W Mathew University of Colombo</p>	<p>Health care equipment</p>	<p>Urinary glucose strips were developed</p> 
<p>TG/2013/Tech-D/04 Face ID - Computer based forensic facial reconstruction for Sri Lanka using 3D graphics</p> <p>Dr Anuja Dharmaratne University of Colombo</p>	<p>Computer Engineering</p>	<p>Computer based forensic facial reconstruction tool was developed using 3D graphics</p> 
<p>TG/2013/Tech-D/05 Design and fabrication of pilot- scale moulding machine for continuous production of dry rubber open cell products</p> <p>Samson International PLC</p>	<p>Engineering</p>	<p>Pilot- scale moulding machine was designed for the production of dry rubber open cell products</p> 
<p>TG/2013/Tech-D/07 Soldering robot system with AOI</p> <p>Mr Sameera Fonseka</p>	<p>AI</p>	<p>Soldering robot system was developed</p> 





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<p>TG/2013/Tech-D/09 Modification of all in one mathematics board</p> <p>Mr N.A. Azmeer Ahamed</p>	School equipment	<p>All in one mathematics board was modified</p> 
Grants completed in 2017		
<p>TG/2012/Tech-D/06 Further development, quality upgrade of nucleic acid extraction kits (Viral RNA and Human Genomic DNA) and recombinant enzymes for commercialization</p> <p>Prof. Ranil Dassanayake Ceygen Biotech. (Pvt.) Ltd.</p>	Molecular biology	<p>Nucleic acid extraction kits and recombinant enzymes were developed</p> 
<p>TG/2013/Tech-D/08 Wireless pad-based vehicle weigh system</p> <p>Mr Nalin Karunasinghe Dalugama, Kelaniya</p>	Engineering	<p>Wireless pad-based vehicle weigh system was developed</p> 
<p>TG/2014/Tech-D/01 Mass rearing of parasitoids and parasites of insect pests of cabbage for commercialization in Sri Lanka</p> <p>Dr M.T.M.D.R. Perera Department of Agriculture</p>	Agriculture	<p>Artificial diet formulations were developed for mass rearing of parasites to be released in cabbage field to evacuate cabbage pest</p> 
<p>TG/2014/Tech-D/03 Production of a safety helmet using coir fibers</p> <p>Soil Tech (Pvt) Ltd.</p>	Engineering	<p>Safety helmet was produced using coir fibers</p> 



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<p>TG/2014/Tech-D/05 Fault detection, isolation restoration using a multi agent-based distribution automation system</p> <p>Dr K.T.M.U. Hemapala University of Moratuwa</p>	<p>Computer Engineering</p>	<p>Multi agent-based distribution automation system was developed</p> 
<p>TG/2014/Tech-D/06 Capsule Formulation and Development of Spirulina Blue Green Algae</p> <p>SAP Enterprise (Pvt) Ltd.</p>	<p>Food & Agriculture</p>	
<p>TG/2015/Tech-D/02 An Improvement of Available Paddle Thresher</p> <p>Dr UA Kapila Siri Udawela</p>	<p>Agriculture</p>	
<p>TG/2015/Tech-D/06 Development of an efficient coconut de-husking machine for industry</p> <p>Mr K.M.S. Bandara</p>	<p>Agriculture</p>	<p>Coconut de-husking machine was developed</p> 
<p>TG/2015/Tech-D/07 Design and construction of remotely operated under water vehicle (ROV)</p> <p>Mr P.G. Tharange De Alwis</p>	<p>Engineering</p>	<p>Remotely operated under water vehicle (ROV) was designed</p> 
<p>TG/2015/Tech-D/09 Collecting, washing and recycling of waste polythene to be reused</p> <p>Mr Damith Nishantha</p>	<p>Waste management</p>	<p>Waste polythene was recycled</p> 

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Grants completed in 2018		
<p>TG/2013/Tech-D/02 Enhance English language learning through m-learning in different learning communities</p> <p>Dr KP Hewagamage University of Colombo</p>	Computer Engineering	<p>A software was developed to enhance English language learning through m-learning in different learning communities</p> 
<p>TG/2014/Tech-D/02 Real time translation of Sinhala to Sign Language</p> <p>Prof. R.G.N. Meegama University of Sri Jayewardenepura</p>	AI	<p>3D Avatar was designed for real time translation of Sinhala to Sign Language</p> 
<p>TG/2014/Tech-D/07 Scaling up production of microbial inoculants for composting of rice straw and promote its use in rice cropping systems</p> <p>Prof. R.M.C.P. Rajapaksha University of Peradeniya</p>	Agriculture	<p>Microbial inoculants were produced for composting of rice straw</p> 
<p>TG/2015/Tech-D/01 Scaling up, stability testing and product testing of blood glucose strips</p> <p>Dr Maduka de Lanerolle University of Colombo</p>	Health	<p>Blood glucose strips were developed</p> 
<p>TG/2015/Tech-D/04 Design and development of the new product, "Student Response System" for classroom/audience</p> <p>Prof. Kanthi KAS Yapa University of Ruhuna</p>	Engineering	<p>Student Response System (Clicker) was developed</p> 

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<p>TG/2015/Tech-D/10 Off the shelf, dash board mounted sleepiness and drowsiness detect device for automobile for 7 500 LKR</p> <p>Mr S.P.C. Ashok Kumara</p>	<p>Automobile spare parts</p>	<p>Sleepiness and drowsiness detect device was developed</p> 
<p>TG/2016/Tech-D/01 Cloud based software and hardware platform for early detection of kidney diseases and severe stages of dengue by non-invasive monitoring of endothelial function</p> <p>Mr Isuru Rajakaruna</p>	<p>AI</p>	<p>Cloud based software and hardware platform for early detection of kidney diseases and severe stages of dengue by non-invasive monitoring of endothelial function was developed</p> 
<p>TG/2017/Tech-D/01 e-Health KIOSK</p> <p>Mr Ajith Indikadulla</p>	<p>Computer Engineering</p>	<p>-Health KIOSKs were developed for hospitals</p> 
<p>Grants completed in 2019</p>		
<p>TG/2013/Tech-D/11 Medical device development for commercialization</p> <p>Dr Nuwan Dayananda, University of Moratuwa</p>	<p>Health care equipment</p>	<p>Developed a marketable Pulse Oximeter and ECG Module with abnormality detector for patient monitor. These two items would be commercialized through Premium International Pharmaceutical (Pvt) Ltd. and the above company was registered at the Medical Supplies Division of the Ministry of Health</p> 

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<p>TG/2014/Tech-D/04 Scaling up Studies of Developing Intelligent Textiles by Introducing Several intelligent Functionalities to Cotton and polyester- Cotton Textiles and Integrating Flow Process to Local Textile Industries for Value addition in garment products</p> <p>Prof. R.M.G. Rajapaksha University of Peradeniya</p>	<p>Nano technology and textile</p>	<p>Nanoparticle incorporated smart textiles with antimicrobial properties</p> 
<p>TG/2016/Tech-D/07 Development of a new screen-printing machine</p> <p>Mr Shantha Kumara</p>	<p>Engineering</p>	<p>Screen-printing machine</p> 
<p>TG/2016/Tech-D/08 Manufacturing of compost blocks using invasive freshwater plants and introduce to the market</p> <p>Mr T.M. Nihal Dharmasiri</p>	<p>Agriculture</p>	<p>Production of compost blocks</p> 
<p>TG/2017/Tech-D/04 Miniature low powered and low cost workstation with embedded patient management software (PMS) for specialized clinics- Eg. Central Leprosy Clinic at National Hospital of Sri Lanka</p> <p>Dr Gayan Yasantha</p>	<p>Computer Engineering</p>	<p>low powered and low cost workstation with embedded patient management for Leprosy Clinic</p> 
<p>TG/2017/Tech-D/08 System for Driving Behaviour Analysis</p> <p>Mr Nilan Mihindukulasooriya</p>	<p>Computer engineering</p>	<p>School van tracking system</p> 

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<p>TG/2015/Tech-D/03 Development of a Control System for Trough Withering</p> <p>Dr W.S. Botheju</p>	Agriculture	<p>Development of control system for trough withering using real time withering simulation mathematical model to reduce electricity consumption.</p> 
<p>TG/2016/Tech-D/06 Development and introduce a low cost highly nutritious beverage from whey protein a by-product of cheese factory</p> <p>Mr Sunil Rodrigo Lilly Cheese (Pvt) Ltd</p>	Food and Nutrition	<p>Whey protein rich beverage- apple flavoured and blue berry flavoured in 200 ml bottles and cans</p> 
<p>TG/2017/Tech-D/02 Technology transfer: Vacuum Assisted Resin Transfer Moulding Process for Sri Lanka Boat Building Sector</p> <p>Dr Udayanga Galappaththi, University of Ruhuna</p>	Engineering	<p>Vacuum assisted resin transfer mould (VARTM) technique is developing to manufacture boats in Sri Lanka using VARTM</p> 
Grants completed in 2021		
<p>TG/2016/Tech-D/04 Development of the Truck- Trailer Combination Vehicle to Suit the Road network of Sri Lanka</p> <p>Mr S.K. Seneviratne</p>	Engineering	<p>The first prototype of the truck-trailer combination vehicle has been developed. The project is to further develop existing prototype has further developed by a combination of sensor detection system to overcome the technical and non-technical problems encountered during test trials.</p> 

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<p>TG/2017/Tech-D/03 Development of a Fermentation Chamber to Improve Porous- Crumb Structure of Rice related- leavened food products prepared from composite flour</p> <p>Prof. N.M.M.G.S.B. Navaratne</p>	Food & nutrition	<p>Development of a fermentation chamber was developed. (Controllable temperature and pressure)</p> 
<p>TG/2016/Tech-D/02 Synthesis and Commercialization of Value-Added Products from Sri Lankan Dolomite Lime</p> <p>Dr D.G.G.P. Karunaratne University of Peradeniya</p>	Minerals	<p>Materials were synthesized Sri Lankan dolomite such as gloves, cables, etc.. and their properties are tested.</p> 
Grants completed in 2022		
<p>TG/2016/Tech-D/05 Introduce Most Effective and Efficient Colour and Clarity Enhancement methods for Semi Precious Gem Minerals Found in Gem gravel Beds in Sri Lanka</p> <p>Mr Tilak Dharmarathna</p>	Minerals	<p>This project aims to test the applicability of various types of colour and clarity enhancement methods, such as heat treatment, oiling, waxing, diffusion, coating, dyeing, bleaching, impregnation and glass filling methods, in Sri Lankan context with a view to select the best suited method and to establish required infrastructure to adapt same for the value addition to non-gem quality gem minerals within Sri Lanka.</p> 