Wednesday, November 09, 2016

Daily News

Vidya

The Official Newspaper of the
Ministry of Science, Technology and Research

President awarding the "Best New Inventor" in the Schools Section G.A.N.W. Gangodawila of Mayurapada Vidyalaya, Narammala at "Sahasak Nimawum" 2016 Exhibition. Minister of Science, Technology and Research Susil Premajayantha and a large number of people participated in this occasion.

Signing of the Memorandum of Understanding on Science, Technology and Innovation Cooperation with Pakistan on 5th January 2016

Hope of Our Future Prosperity ...
Science , Technology & Research

Mission Building New Paths to Conquer World through Scientific Eye

SLINTEC Nanotechnology Incubation Center vested with the nation...

At the Presentation of National Quality Awards 2016...

Opening 'Vidatha' Resources Centre at Kahawatte

Science & Technology for Society Forum Sri Lanka 2016

'Sahasak Nimavum' 2016 Exhibition

After the present Government came into power, under the leadership and blessing of President Maithripala Sirisena and Prime Minister Ranil Wickremasinghe, the Ministry of Science, Technology and Research was entrusted to Minister Susil Premajayantha. This issue of 'Vidya' Newspaper highlights the mission carried out to uplift the fields of science, technology and research under the advise of the Minister, State Minister Lakshman Senevirathne, Ministry Secretary R. Wijialudchumi and the guidance of Heads of Affiliated Institutions. What is special about this is that, parallel to this, the one year's proud contemplation of 'Vidya' tri-lingual newspaper is also being held.

'Vidya' Newspaper Celebrates One Year

ANNIVERSARY CELEBRATIONS 1st ANNIVERSARY

'Vidya' Tri-lingual Newspaper launched by Ministry of Science, Technology and Research with The Associated Newspapers of Ceylon Limited (Lake House) on 14th October 2015 completes one year.

Ministry of Science, Technology and Research

To read Vidya as an e Paper visit www.dailynews.lk /vidya

Excellent Mission of Communication by "Vidya" newspapers

Lakshman Senevirathne – State Minister of Science, Technology and Research

A year has gone by "Vidya" the trilingual official newspaper of the Ministry of Science, Technology and Research. Being able to take the latest news and information of science, technology and research to readers through those is a significant victory.

The services of 'Vidya' in creating an interest about the activities of the sons and daughters of Mother Lanka and provide them with encouragement has to be valued greatly. A main benefit provided by this is being able to encourage reading, collecting information and analyzing information from schooldays as well as contribute to developing knowledge and skills needed for new inventions and manufacturing processes for future necessities.

In the world that is fast changing from day to day, science and technology is massively utilized for all production processes in industrialization, new inventions and all other sectors.

Locally also, that is a crying need. The main foundation has been laid in connection with the 12 institutions affiliated to the Ministry of Science, Technology and Research through 'Vidya' newspapers to create avenues for Sri Lanka's sustainable development.

I hope that 'Vidya' official newspapers could be utilized as an official media in social empowerment and uplift a citizen-based science culture as one of the main results approved at the recently held 'Science and Technology for Society Forum Sri Lanka 2016' and as an efficient methodology that can regulate information necessary to clarify simple and basic science applications in grassroots level and everyone in reaching for the sustainable development goals in science, technology and research sectors locally through the sustainable development goals recommended for years 2016-2030.

I add my felicitations for all the successes of your journey and best of wishes for future welfare.

I wish that the official newspaper 'Vidya,' that is distributed free of charge with Dinamina, Thinakaran and Daily News, will remain among us for a long time to come.

Sri Lanka fully developed country in Science & Technology by 2020

R. Wijialudchumi – Secretary - Ministry of Science, Technology and Research

● Speaking of the money allocated for 2016 for Ministry of Science, Technology and Research and programmes activated through that?

A sum of Rs. 896.07 million was allocated for our Ministry and Rs. 1354 million was allocated for institutions under our Ministry. Through those, seven projects have been launched through the Ministry. Out of those, the main project is taking technical knowledge to village level through 'Vidatha' Centers. This programme has been allocated Rs. 66.08 million. It is being operated through 266 Vidatha Centers established countrywide. Rs. 34 million has been allocated to disseminate science, especially take science among school children. Rs. 550 million has been allocated to build a medical manufacturing laboratory proposed by ITI and SLINTEC. Its construction work will begin next year. Furthermore, National Science Foundation has allocated Rs. 250 million to study non-communicable diseases such as cancer, diabetes and kidney diseases. Thus, allocated money is properly invested.

● What are the special programmes activated this year?

For the first time, an international forum named 'Science and Technology for Society Forum Sri Lanka 2016'. One of the major results of this Forum was that scientists and researchers have got the opportunity to uplift science technology in collaboration with scientists and researchers from overseas.

According to a concept of Prime Minister, a *Technocity* is scheduled to be constructed in Pitipana, Homagama. Land has been allocated. It is expected to uplift research, exploration, technology and commercialization radiating from one single area.

● How will be the financial allocations through 2017 budget and what are the programmes to be activated?

It is expected to introduce 13 projects in 2017. Out of these, four are scheduled to be carried out through the Ministry and the balance nine through affiliated institutions. Rs. 2994.38 million have been requested for these projects. With these, the total value of the operative projects will be Rs. 55,142 million. Other than those projects, Rs.700 million has been requested for three continuous projects. In total, Rs. 3694.38 million has been requested per year.

● Can you tell our readers what those projects are?

The Universities of Colombo, Peradeniya, Sri Jayawardhanapura, Ruhuna, Wayamba and Jaffna and institutions of NERD, SLINTEC and NISF institutions under the Ministry, in collaboration with Shivanathan Laboratory of the USA and making arrangements train students who have passed the G.C.E. (Advanced Level) Examination and interested in science in manufacturing solar panels locally. Asian Science and Technology Institute will be established with Japanese assistance to operate our technical programmes at international level with on-the-job training required for the current job market.

A Bio Technology Park and a Health Science Research Center will be established. Unique are the crude oil and petroleum exploration special projects under ITI.

Our objective is to uplift Sri Lanka to the position of a country advanced in science and technology by 2020.

● How does 'Vidya' newspaper completing one year influence advancement of the Ministry?

Science and technology programmes including development projects operating under our Ministry are taken to the general public through 'Vidya" trilingual newspaper that is being published in collaboration with Lake House. Through this, admiration has been created for our Ministry, affiliated institutions and science and technology subject among not only students but also the general public. So, we are thankful to Lake House for giving us this opportunity. Furthermore, steps are being taken to this programme forward.

Marlin Marikkar
***Picture* – Sudam Gunasinghe**

To Uplift New Inventions

Rs. 1000 Million from Coming Budget

Minister of Science, Technology and Research Susil Premajayantha

Last year, at the ceremony of presenting Presidential Awards for New Inventors, the President made two basic statements. One is proclaiming A Day for new inventions and the other is that those inventions should be uplifted to commercial level and manufacture level nationally and internationally and the necessary financial and technical assistance should be provided to turn them into goods and services.

Accordingly, we have activated both those processes, said Minister of Science, Technology and Research Susil Premajayantha at the Award Ceremony for Inventors held on the 26th of last month. Further expressing his views, the Minister said that the day designated as New Inventions Day is the birthday of world renowned Engineer Kulasinghe, the first Chairman of the New Inventions Commission of Sri Lanka.

Speaking further, the Minister said, "A sum of Rs. 1000 million has been allocated for these activities from next year's budget. Accordingly, we are getting the ability to grant the necessary financial facilities for new inventors from the beginning of the year. So, at present, we are working to carry out both ideas of the President.

We have provided a place for new inventors to exhibit their new inventions and with facilities to gather and discuss about their various projects with internet facilities, enabling them to get an understanding about new inventions of the other countries of the world, a long-standing request of them, from Borella area. Furthermore, as per another of their requests, we have made arrangements to provide them with a unique identity card symbolically today and for the first time we also issued a new stamp to mark New Inventions Day.

Accordingly, in the midst of all these facilities being provided, steps are being taken to create new inventions within a very short time and provide the products and services necessary for the country and, going beyond that, to navigate the overseas market.

As far as I know, the true development of a country depends on the victories achieved in science, technology and new inventions. Sri Lanka is a country with a proud historic heritage. It is said that the world's oldest hospital had been established in our country. Furthermore, several astounding engineering works such as irrigation works and construction of Stupas had been operating in our country.

But, due to our country being administered by various foreign nations, a background where many things such as new inventions were blocked was created. Under those conditions, as replacement items for the items we needed were imported from those countries.

But, at present, that condition has changed and an environment conducive to take all these endeavours forward has been created in the country.

Accordingly, our Ministry is utilizing Nanotechnology and Bio technology to take science and technology forward. Today, a Technical University has been lunched with all facilities to achieve that. At present, both State and private sector has been provided facilities to conduct research and experimental work at that University.

Without stopping there, we have directed or attention towards Robotics in widespread use at present.

We have launched discussions with Japan, the country leading the world in Robotics, and Cuba, with a view to developing a cure for cancer using Bio technology and arrangements are being made to bring those technologies to this country.

At present, the Texas Medical Center of Houston, the USA, is a place where high level research on heart disease in being conducted. We have planned knowledge exchange programmes to send our people there and to get those people to come over here to obtain the required knowledge. Because of these incidents, I think that our new inventors will be able to invent new, up-and-coming inventions in the coming three years.

The Minister further said that, at an occasion such as the present when this Government, under the leadership of the President, is carrying out these activities step by step, a New Inventions Day has been declared and winners in the four categories school, university, professional and civil public are selected and their new inventions are being awarded to take this country forward.

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Asanga Prasad Weerapura
Pictures – Dulip Nayanapriya

Standardization and Systems Certification

Sri Lanka Standards Institution (SLSI), which is the National Standards Body of Sri Lanka was established by the Act No. 38 of 1964 and amended by the Amended Act No. 6 of 1984. The primary purpose of the Institution is to promote standardization in all sectors of the economy to uplift the quality of life of the nation. SLSI is the sole body in the country that represents Sri Lanka at the International Organization for Standardization.

Primary objective of the SLSI is to formulate National Standards. However SLSI has taken steps to implement such standards among manufacturing and service sector organizations, school and university students and general public by operating internationally accepted certification schemes, conducting awareness programme / training programmes workshops etc.

National standards relating to products, commodities, materials and processes are formulated following internationally accepted principles, particularly in line with the provisions given under Annex 3 of WTO/ TBT Agreement. The Institution also takes action to promote use of these standards by the Industry to gain benefits associated with standardization.

By implementing the products certification scheme, the products that are manufactured in compliance with Sri Lanka Standards in a consistent manner are recognized by allowing affixing the SLS mark on the product. This helps consumers to identify products that meet standards and help to uplift the quality of products available in the market.

Quality Certification

Systems certification schemes against different world recognized Management Systems are becoming a necessity for Sri Lankan Industries to carry out business in the competitive global markets. To cater to this need of the industry and trade, the Institution operates Certification Schemes covering ISO 9001 based Quality Systems, ISO 14000 based Environmental Management Systems and ISO 22000 based HACCP Food Safety Systems, OHSAS 18001 Occupational Health and Safety Management Systems, ISO 50001 Energy Management Systems, SLS 1432 based Super Market Management Systems Certification, SLS 1324 based Organic Certification and GMP Good Manufacturing Practices.

Quality assurance of identified imported items is another method used by SLSI to implement the standards. At present, 123 items that are imported to the country are ensured to meet the Sri Lanka Standards before they are released to the market by means of a number of mechanisms.

Providing laboratory facilities for product testing and instrument calibration SLSI is paving the way for industrialists to assure their products' conformity with the required quality standards. Testing facility which is vital in trading to assess product quality is provided on food, chemicals, material, microbiology, electrical and textile fields.

Similarly, to assure correct measurements, industrial calibration service is provided in length and angle, mass, temperature, pressure, force and torque and volume areas.

In order to impart knowledge on standardization and related fields to the industry personnel from top management to shop floor workers, SLSI conducts more than 100 training programmes throughout the year. Education of consumers including schoolchildren on standardization and quality related areas is another important activity carried out by the Institution.

Through above activities SLSI

- facilitates internal and external trade
- helps increasing productivity and maximize the utilization of resources
- enhances international competitiveness of products and services
- helps safeguard the interests of consumers
- helps to achieve socio-economic development.

T.G. Gamini Dharmawardana
Director General / CEO
Sri Lanka Standards Institution

World Science Day 2016

Schools Programme organized by the National Science Foundation

Established by UNESCO in 2001, World Science Day for Peace and Development is celebrated worldwide on 10th November each year. It offers an opportunity to demonstrate to the wider public why science is relevant to their daily lives and to engage them in debate on related issues. The aim is to ensure that citizens are kept informed of developments in science, while underscoring the role scientists play in broadening our understanding of the remarkable, fragile planet we call home and in making our societies more sustainable.

The National Science Foundation (NFS) is the focal point of celebrating the World Science Day in Sri Lanka.

The World Science Day Schools Programme was started by NSF in 2004 with the objective of popularizing of science among the schoolchildren and teachers, and organized this event annually with the participation of schoolchildren all over the country and conducted under different themes. For the 12th time, the World Science Day Schools Programme is scheduled to be held on Thursday, 10th November 2016 at the Main Hall, BMICH. The theme of this year's programme is "Science for Healthy Living."

Minister of Science, Technology and Research Susil Premajayantha will be the Chief Guest of this programme. Prof. Narada Warnasuriya, Senior Professor of Paediatrics, Faculty of Medicine, General Sir John Kothalawala Defense University will deliver the keynote speech on "Science for Healthy Living."

The expected number of participants is 1500, including schoolchildren, teachers representing the School Science Societies from the schools located all over the country, scientists, Ministry officials, media personnel and award winners of the following competitions organized by the NSF targeting the World Science Day Schools Programme.

- **Inter School Science Society Competition –** This is organized among the School Science Societies registered with the NSF (at present, there are 812 School Science Societies registered with the NSF). Five competitions namely, Short Science Drama, Role Play of Scientists, Viridu Poems, Digital Story Telling and Manual poster Competitions are organized under the same theme of the World Science Day Schools Programme, among the schoolchildren of the registered schools.

A competition for the NSF Award for Teachers in Promoting Science also organized among the science teachers of the registered schools.

- **Star Rating of the School Science Societies registered with the NSF –** Science Societies are evaluated based on their performance and Star winning schools will be selected. The best five schools are selected every year and the winners are awarded "Five Stars."

- **Science Research Projects Competition (SRPC) and the Sri Lanka Science & Engineering Fair (SLSEF) –** This is organized among the schoolchildren who are in Grades 9 -13. Top 10 winners of the SRPC organized by the NSF are entitled to participate in the SLSEF organized by four stakeholders namely the NSF, Institute of Engineers of Sri Lanka, Intel Pvt Ltd Sri Lanka and the Ministry of Education.

- **Digital Story Telling Competition for University Science Societies –** This is conducted among the University Undergraduates of the University Science Societies registered with the NSF. Currently, there are 47 Science Societies registered with the NSF.

- **Prof. M.T.M. Jiffry Memorial Award for Popularization of Science –** This Award is open to the public.

All the winners of the above competitions will be felicitated at the World Science Day 2016 Schools Programme and arrangements will be made to award them plaques, certificates and cash awards.

Winners (first place) of the short science drama, role play and viridu poems competitions will be given an opportunity to display their performances at the above programme.

The Special Issue of the Vidurava Magazine published by the NSF under the same theme of the World Science Day will be distributed among the participants of the above Schools Programme.

Facilitating Research & Development
National Research Council

The National Research Council (NRC) was founded in 1999 and formally established in year 2007, as a special agency by the President, under Article 33 of the Constitution, to assist the Government in science and technology towards a vibrant science and technological community. On 27th of July 2016, the NRC was established as a statutory body by the Act No. 11 of the Parliament of Sri Lanka.

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President's Awards

President's Awards for Scientific Publication are considered as the nation's most prestigious awards for research publication for Sri Lankan scientists with an indigenous institutional affiliation. Recognition of scientific merit based on publication in SCI journals is the main objective of NRC with regard to this programme and the award ceremony will be held every year with the presence of the President of Sri Lanka. As a nation we should be proud to see that there has been almost a three-fold increase in indexed scientific publication by our scientists from 1999 to date.

Successful Project of Private Public Partnership Programme

Respiratory diseases are becoming more common in Sri Lanka and nasal drug delivery is the most efficient therapy identified so far. Nasally delivered drugs own a larger space in Sri Lankan health expenditure but almost 100% of such drugs were imported. Prof. Anil Goonathilake and his team at University of Sri Jayewardenepura and LINA Manufacturing (Pvt) Ltd initiated the local production of nasally delivered drugs, with the support of Public Private Partnership Programme of NRC. The first product range is for treatment of asthma and they have been low-cost products compared to imported products, showing a promising potential of commercialization.

Sri Lankan Mark in Galactic Exploration
Arthur C. Clarke Institute for Modern Technologies

Herewith are some excellent inventions of Arthur C. Clarke Institute for Modern Technologies.

(1) Space Technology Applications for Agricultural Drought Monitoring and Early Warning

Drought is one of the largest disasters in the country in terms of the number of people affected with direct impact to food and water security. Recent years witnessed severe drought events and had significant impact on annual Gross Domestic Product (GDP): in year 2012 over 11% of the total 390,000 hectares of Yala rice cultivation was destroyed.

Therefore, it is necessary to have a national drought monitoring system, which will finally contribute to build the resilience of the nation to disasters. The above project was undertaken as part of Sri Lanka's selection by the United Nations Economic & Social Commission for Asia and the Pacific (UNESCAP) as the first Pilot Country for implementation of the 5 Year Action Plan (2012 – 2017) formulated by UNESCAP for developing the capacity of the countries in the region to use space technology applications for Sustainable Development and Disaster Risk Reduction and also the country was selected as one of the Pilot Countries for implementation of the Space Technology based Drought Monitoring and Early Warning mechanism.

(2) Nano Satellite Mission

Nano satellites provide much of the performance of a conventional satellite for a fraction of the cost. Nano satellites were built in a standard format known as a CubeSat, a 10 cm (4 inch) cube weighing 1-10 Kg. Some nano satellites comprise more than one cube. The Institute is planning to conduct this project with the technical support from a leading aerospace university in the world and partnering with several key universities in Sri Lanka.

Initiating this endeavour, a kickoff workshop on "Development of Sri Lanka's first ever Nano satellite" was organized on 18th and 19th of August 2016 with foreign technical expertise.

(3) Automated Electrical Hospital Bed

The automated hospital bed is a very useful hospital item, especially when caring for elderly immobilized persons. However, the majority of the State-run hospitals in the country are equipped with only a few automated hospital beds due to their high cost. To address this need gap the Arthur C. Clarke Institute for Modern Technologies has taken steps to design a low cost automated hospital bed.

The Institute developed this product in collaboration with one of the leading medical equipment and accessories suppliers in the country and that company will act as manufacturing and marketing collaborator of the ACCIMT.

With One Year's Pride
Scientific Retrospect

Today, the whole universe is a village and we are its villagers. We observe the world through scientific eyes and we are travelling fast on our way. Today, if something happens without science or technology, it will surely be something incredible. Science and technology has bonded with us to that extent. As the human needs and necessities have grown more and more complex, the field of research is closer to us than ever before. In 2015, the Associated Newspapers of Ceylon Limited was selected as the official print media communicator of the Ministry of Science, Technology and Research for the dissemination of new inventions and methodologies and their application to the development process of the country. The 'Vidya' trilingual newspaper that is issued with Dinamina, Thinakaran and Daily News is proudly commemorating its first anniversary.

The Ministry of Science, Technology and Research, collaborating with the Associated Newspapers of Ceylon Limited, took steps to launch trilingual newspapers broadening the scope of its communication space. The official newspapers of the Ministry launched concurrently with the commemoration of International Standards Day, communicated a mass of information about the steps taken for the advancement of the fields of science, technology and research by the Ministry and its affiliated institutions through the year. Vidya newspaper entered the annals of history addressing the Sri Lankan reader in three languages Sinhala, Tamil and English with Dinamina, Thinakaran and Daily News. This was an ideal communications media that has reached readers the world over through e-newspapers broadening the knowledge of readers in the various strata of society from schoolchildren through covering the locally held exhibitions, symposia and fora. Comprehensive information about institutions such as Sri Lanka Standards Institution, NERD Centre, Industrial Technology Institute, National Science Foundation, Sri Lanka Institute of Nanotechnology (Pvt) Ltd., Arthur C Clark Institution for Modern Technologies, National Institute of Fundamental Studies and Network of Vidhatha Centers flowed to the reading public through these newspapers. As these newspapers are published in three languages Sinhala, Tamil and English, any reader can access these newspapers with ease because a special layout system has been introduced for them, unique to these newspapers; the 'Hybrid' newspaper. "Vidya" newspapers are distributed with national newspapers Dinamina, Thinakaran and Daily News and can be accessed through internet e-paper with video facilities.

This will be the best nursery for student community who is always involved in computer technology to find scientific information while getting their knowledge updated. These newspapers provide a great backing to fill the communications vacuum in technical and research fields as there is sufficient space in them to include those products and their manufacture covering any new idea of that product or to analyze the research background a particular service.

Furthermore, instead of the usual meaningless ideas and time-wasting boasts printed and broadcast in some media, important information about science, technology and research findings essential for country's development and the tasks carried out by the Ministry were published in these. Space is also open to necessities of day-to-day life and scientific problems. There are only two months to the start of a fresh year. In retrospect, it becomes apparent that the pride of "Vidya" newspapers is that is has socitalized many important information necessary for the advancement of Sri Lankan society. Our respect for all time goes to the Chairman, Board of Directors and all Corporate Officials of Lake House and we are gratefully thanking the Minister of Science and Technology, the State Minister, the Ministry Secretary, Heads of Affiliated Institutions and all others who assisted in this journey of success!

We would like to bestow our honour and gratitude to Additional Secretary (Technology and Research Development) H.M.B.C. Herath, Director (Science and Research Development), P.M. Dharmatilake, Director (Technology Development and International Relations) Himali W.K. Athaudage, Director (Planning) Nazeema Ahamed, Media Secretary Mahesh Samarasekera, Dhammika Rathnayake and B.H. Ishara Sudarshanie of the Technology and Research Development Division and all officials of the Ministry who are continuously dedicated to all tasks of "Vidya."

We are also grateful to the unflagging dedication of the Managing Editor of the Lake House Government Relations Department Samantha Karunasekera and his team.

"Vidya" newspapers are forever prepared to carry out their communications tasks without fail in any endeavour of the Ministry to fashion the future of science, technology and research fields of the country. We convey our best wishes for 'Vidya" newspapers' second year that begins today!

Pramitha Randali Pabasara
W.A. Nisansala Kumari

'Vidya' – Year's Mission
Attractively took Science and Technology to Society

H.M.B.C. Herath
Additional Secretary
(Technology and Research Development)
Ministry of Science,Technology & Research

Today, at any important occasion discussions are held locally or globally, science and technology has become the main topic. From the days of yore it has become the main factor of development. We have been entrusted with the main responsibility in the socio-economic development process of the country. Here, we carry out new inventions in various sectors of the field of science and bringing them forward practically. But, the most important factor in its success and the subject field is knowledge and proper communication.

Furthermore, in talking of the subject field, increasing the attractiveness and understanding is very important to attract youth to science and technology. Producing knowledge findings simply and attractively is very important for the true value of research.

We need a high quality media for that. The start of that media was launched on 14th October 2015 by the Ministry of Science, Technology and Research in collaboration with Lake House. The launch of that media was the bestowing of 'Vidya' trilingual newspaper on the society. Through that, for a period of almost a year, we have successfully and continuously proceeded on that journey we began. During all this time, we were able to achieve the peoplization we expected very accurately.

Here, we should especially value the assistance we got from the Minister of Science, Technology and Research Susil Premajayantha, the Secretary of the Ministry and other officials. Now, we have to go forward on the journey we began, getting fresher and fresher with each step.

Specially, scientists should carry out research projects suiting social necessities. That is what we should give to the society.

SCIENCE AND TECHNOLOGY FOR SOCIETY FORUM SRI LANKA 2016

The Science and Technology for Society Forum Sri Lanka 2016 was held recently at Nelum Pokuna Mahinda Rajapakse Theater, Colombo, recently. Local and overseas scientists who have won in the international arena, researchers, explorers and scholars hoping to embark on science and technology field participated in this occasion.

Several local and overseas scientists invited by the Minister of Science, Technology and Research Susil Premajayantha and State Minister Lakshman Seneviratne according to the advice of President Maithripala Sirisena and Prime Minister Ranil Wickremasinghe participated in this occasion.

The second day of the Forum was dedicated to technical sessions held at the Waters Edge Hotel. The theme of these technical sessions was "Harnessing Science Technology and Innovation for Sustainable Development."

The assistance to this Forum convened by the Ministry of Science, Technology and Research of the Government of Sri Lanka for the first time with the objective of promoting superior technology for the industrial field of Sri Lanka and infrastructure development projects was supplied by the UK India Education Research Initiative (UKIERI) and the Japan – Sri Lanka Invention Platform (J-SLIP). The assistance for technical sessions was supplied by JAICA, WIPO, GTZ and Thomson Reuters.

In Sri Lankan context, at the 2016 Sri Lanka STS Forum, attention was paid on the tasks of science and technology field in reaching Sustainable Development Goals, Citizen's science, Skills development in science field, Technology and inventions, Financing and investments in science and technology field, Establishing an inventions platform for Sri Lanka and Nanotechnology.

Other than the programme of the day of inauguration, five group sessions, 21 break-up sessions and four discussions between scientists and the industry field were held. The 2016 Sri Lanka STS Forum successfully concluded with the Colombo Resolution on incorporating Science Technology and Innovation for the development of the country.

This Forum was of utmost importance to the future generations. It is very special that, as a a result of this Forum, the number of scholarships Sri Lanka is getting from the CERN Laboratory of Geneva was increased from two to four.

Another victory we were able to achieve at this Forum was increasing the number of scholarships we were getting from Sakura of Japan to 100 scholarships from 10.

NERD

Vidya

1st ANNIVERSARY CELEBRATIONS

Aquatic Weeder for Drainage Canals

This project of developing an Aquatic Weeder for drainage canals was proposed by the Department of Irrigation. The objective of this project was to clean up the weeds grown in drainage canals in Southern Province. In Southern Province these are hundreds of kilometers of canals which are meant to drain the floods to the pump inlets which pump them into the river. At present dredges which are set on the floaters are used to remove weeds in these canals which block the water flow. This is a very costly and time consuming process. The NERD Center, acting on a request from the Department of Irrigation launched a project to develop an aquatic weeder with the objectives of speeding up the weeding and lessening the costs.

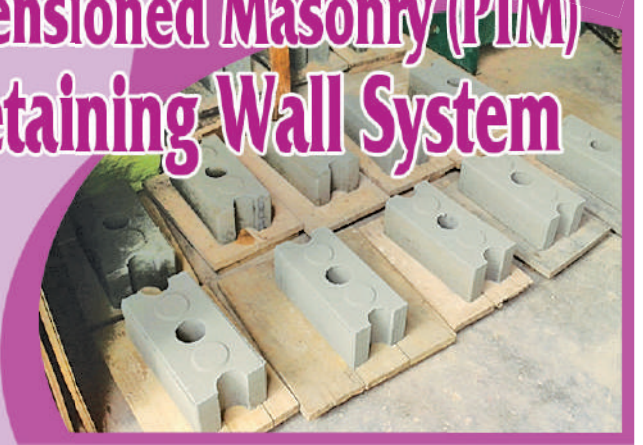
The proposed weeder is a simple machine developed by using the engine / gearbox of existing two wheelers, and with simple alterations this could be moved on land. The proposed machine is still in the mode of field testing.

Could be made locally for about Rs. 1,000,000/-. Cost of a Japanese machine of the similar capacity will be around Rs. 10,000,000/-.

Eng. Kapila Peiris
Eng. E B U C Kumara
National Engineering Research and Development Centre

Field testing of Aquatic Weeder

Post –Tensioned Masonry (PTM) Retaining Wall System



During development of lands one main challenge is to create a difference in ground elevation. This can often be done by creating slopes, but due to reasons such as limitation of land etc., maintaining a safe slope is not possible. Then the construction of a retaining wall is necessary.

A retaining wall is a structure designed and constructed to resist the lateral pressure of soil when there is a desired change in ground elevation.

Post –Tensioned Masonry (PTM) retaining wall system consists of masonry blocks compressed by post-tensioning after construction. These blocks are manufactured by the hydraulic block making machines developed by National Engineering Research and Development Centre of Sri Lanka (NERDC).

The Post –Tensioned Masonry (PTM) retaining wall system can be used as an economical alternative to the traditional methods of retaining wall construction. This masonry retaining wall eliminates the labor expensive works such as reinforcement and form work. Advantages such as over 30% cost saving with all traditional retaining wall systems and aesthetic appearance are expected at the completion of this retaining wall system.

This project is an ongoing research project at NERDC and ready for commercialization from January 2017

Eng. W.W.P.K.Perera
Project Engineer
A.D.A.R. Premawansa
Principle Research Engineer
National Engineering Research and Development Centre

SLINTEC starts expansion of Nanotechnology and Science Park with Green House

Sri Lanka Institute of Nanotechnology (Pvt.) Ltd., (SLINTEC), with collaborations with China had started construction a state of the art Green House of 10,000 sq.ft. The constructions are scheduled to be completed in November this year. Once completed, the Green House will demonstrate new technologies in agriculture giving more emphasis to hydroponics and aeroponics. This will give new lights to methods of cultivating fruits and vegetables with no or minimum agrochemicals. It will also boost the horticulture industry.

"SLINTEC – Working for State and Private Sector Research Projects"

Technology Incubation Centre (TIC)

The Technology Incubation Centre (TIC), first and only future initiative of Sri Lanka to provide a nurturing environment to technology based business ideas to prosper and become viable contributors to our community and economy. It is the place for technology based business, innovations and developments which maximizes the chances of success under "one roof concept" managed by SLINTEC. TIC brings academia and industry closer to each other by providing a platform to commercialize their research, projects and other technology based business ideas.

TIC, covering 18,000 sq.ft., together with open space for pilot projects and office spaces, was opened for business on 22 of September 2016 by Prime Minister Ranil Wickramasinghe.

Research for Government

SLINTEC is involved in both public and private sector research initiatives. SLINTEC currently is conducting three major projects on behalf of the Government in the areas of Material Science.

The synthetic chemistry programme is to create Active Pharmaceutical Ingredients (API) to Pharmaceutical Industry in Sri Lanka. As the current pharmaceutical Industry in Sri Lanka only deals with medications at present, the new programme is looking at producing APIs in Sri Lanka to compete in the international market in terms of quality.

Private Sector Research

The private sector investment programme is to encourage the young companies to look at new technologies in science. Currently SLINTEC is engaged with over 10 clients by looking at their project proposals.

Helpline for Exporters

SLINTEC has developed a Programme with Export Development Board to advice the exporters who need expert advice on developing their products. A science clinic is conducted once a week at the Export Development Board. From there Exporters can get solutions for their technical problems relating to Science and Engineering.

NEW ACCREDITATION SCHEMES IMPLEMENTED BY SLAB

Accredited Compliance Assessment Reports have been made mandatory for taking technical decisions, by Cabinet Paper No. 16/0074/716/003.

As the basic programme, a 'Meeting of National Regulatory Bodies' was held on 01st September. The objective here is creating a platform for all regulators to identify the present demand according to the country's industries and requirements of the international market, reviewing existing rules and regulations and introducing new regulations.

GHG VALIDATION AND VERIFICATION

Accreditation of Green House Gas (GHG) Validation and Verification Bodies is based on ISO/IEC 14065 - Greenhouse gases- Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition.

SLAB has started an accreditation programme for GHG validation and/or verification bodies in 2015 and has already accredited two GHG validation/verification bodies. SLAB is a PAC MLA partner for GHG validation & verification. And the only accreditation body which accredits GHG validation and verification in the South Asia.

INFORMATION SYSTEM SECURITY MANAGEMENT (ISMS)

This system certification is based on ISO/IEC 27001:2005– Information technology -- Security techniques -- Information security management systems -- Requirements.

INFORMATION TECHNOLOGY SERVICE MANAGEMENT (ITSM)

This system certification is based on ISO/IEC 20000-1:2011 Information technology - Service management - Part 1: Service management system requirements.

SLAB is ready to provide accreditation based on ISO/IEC 17021to the above System certification schemes.

GOOD LABORATORY PRACTICE (GLP)

This scheme is based on OECD Principles of Good Laboratory Practice (GLP) which set the quality standards for the organization and management of test facilities and for performing and reporting studies related to the safety of chemical substances and preparations.

SLAB is ready to provide accreditation based on OECD Principles of GLP.

TEXTILE EXCHANGE

This is an independent scheme ensures that all of the work that is done towards sustainability in the textile industry is genuine and leads to real and meaningful change. Textile exchange includes a series of standards:

i. The Content Claim Standard (CCS) is a chain of custody standard that provides companies with a tool to verify that one or more specific input materials are in a final product.

ii. The Organic Content Standard (OCS) relies on third-party verification to verify a final product contains the accurate amount of a given organically grown material.

iii. The Recycled Claim Standard (RCS) is a chain of custody standard to track recycled raw materials through the supply chain.

iv. The Global Recycled Standard (GRS) is a holistic certification for products with recycled content.

Industrial Technology Institute
Armed With Technology

Chronic Kidney Disease

Chronic kidney disease is a major crisis faced in Sri Lanka mainly in the North Central Province. As the kidneys of those patients are not functioning, kidney dialysis has to be carried out frequently to purify the blood using kidney dialysis solutions.

Presently the dialysis solutions are imported at a high cost. M.N.A. Mubarak, Principal Research Officer and Technical Assistant, A.A.N.U. Amarasinghe developed low cost dialysis solutions which showed very positive and better results than the imported solutions in clinical trials carried out at Kandy Teaching Hospital and are now ready for commercialization.

Solar reactor for purification of agrochemical contaminated industrial water

Agrochemical industries generate wastewater contaminated with agrochemicals which needs to be properly treated before it is released to the environment. The industrialists currently use chemical treatment methods using chemicals to decontaminate wastewater.

The new treatment technology, a photo catalytic reactor that uses sun light for decontamination was developed at ITI. This cheap, environment friendly technology could also be used in domestic water supply to purify water. The pilot scale studies are to be carried out before commercialization.

The research was carried out by Dr. I.R.M. Kodagoda along with Research Scientist K.S.P. Karunadasa, Research Engineer W.R.L. Wijesekera, Technical Assistants H.D.D.P. Gunasekera Kohobange and H.A.M.I.T. Hettiarachchi.

Control of fruit flies

Fruit flies cause damages and cause heavy post harvest losses. A team of researchers, led by Dr. R.M. Dharmadasa at ITI carried out pilot scale trials on a natural pest control product; a pare-pheromone from local varieties of Ocinum sanctum L. for the management of fruit and melon flies. This pest control formulation uses natural compounds and it is free from many adverse effects on nature usually posed by synthetic pest control agents. Research work was done in collaboration with CIC and the Department of Agriculture. The technology was transferred to CIC.

Development of modified KASPER

KASPER is a formula used in kitul tapping industry to enhance the sap secretion. The use of KASPER gave a new lease of life to dying kitul industry. Drs Pathmasiri Ranasinghe, Sirimal Premakumara, Sudarshana Somasiri and Technical Assistant Ushan Chanaka developed the KASPER formulation for kitul. The research was continued to modify KASPER, expanding the application for coconut tapping which gave promising results in coconut sap secretion. The new formulation is ready for technology transfer.

Bio Wax Formation

An edible bio wax formulation which can extend the storage life and delay the ripening of mangoes was developed by a team of ITI researchers. All the ingredients of Bio Wax are of food grade and the research team used the bio-activity of natural compounds to ensure the protection of mangoes from fungi and other spoilage causing microbes.

Using Edible Wax for the control of post harvest losses of mangoes is highly economical and it costs 50 cents to Rs. 1/- per mango. The inventors are waiting for patent rights and the approval from the Department of Agriculture on safety for use.

The team was led by Drs. Shanthi Wilson and Ilmi Hewajulige and Nisala Gunasekera and Shiranthi Perera are other team members.

ITI Research Symposium

Second Biannual Research Symposium of ITI was held on 16th and 17th of November 2015. Inauguration ceremony was held at the Committee Room B of BMICH and the Chief Guest was Minister of Science, Technology and Research Susil Premajayantha. Dr. Imtinan Elahi Qureshi, Executive Director of COMSATS was the Guest of Honour while W.A. Wijewardena delivered the keynote address. Achievement Awards were presented to the ITI staff members who excel in research and post graduate studies. Technical Sessions were held at ITI and the researchers of ITI presented their research findings to the scientific community.

Biochar from Municipal Solid Waste

Pyrolysis produces biochar, which is a stable carbon material produced under no or less oxygen condition. At present, a growing number of countries in the world are moving towards achieving Sustainable Development Goals (SDGs) in which pyrolysis seems to be a valuable option in managing municipal solid waste (MSW) than incineration, which demands a lot of energy and composting which is not the total solution. In economic point of view, biodegradable MSW may be pyrolyzed to generate electricity and generate biochar as a by-product, where it can be reused as a soil conditioner / amendment / fertilizer and at the same time as an economically viable alternative to activated carbon and simultaneously, biochar reduces Green House Gas (GHGs) emission and remediates various pollutants including carcinogenic organic pollutants and heavy metal contaminants from municipal solid waste dumpsites.

Open dumpsites act as the final depository of most industrial, construction and municipal wastes in Sri Lanka. As a result of accelerated urbanization, waste generation per capita is being increased. For instance, municipal waste generation in Sri Lanka is projected to be 1.0 kg / capita / day by 2025, which is 0.8kg / capita / day at present. On the other hand, distance between residential areas and landfills are gradually being decreased due to the expansion of the urban boundaries. Hence, it needs careful management rather than open haphazard dumping.

Dr. M.S. Vithanage
Senior Research Fellow
National Institute of Fundamental Studies

National Research and Development Framework
Catering to National Needs

Recognizing the important role played by Research and Development (R & D) activities in the development of a country's economy and in enhancing the living standards of its people, the National Science and Technology Commission (NASTEC) has developed a National Research and Development Framework (NRDF) for Sri Lanka to harness the potential of R & D activities in national development. NASTEC is an advisory body to the Government on S & T policies, plans and strategies. The NRDF was prepared with the collaboration with the Ministry of Science, Technology and Research and with the participation of a large number of scientists, academics and other relevant stockholders.

The NRDF, which was approved by the Cabinet of Ministers in May 2016, has identified 10 areas to focus on for improving the quality of life of people and enhancing economic development of the country. These areas are; i) Water, ii) Food, Agriculture and Nutrition, iii) Health, iv) Shelter, v) Environment, vi) Energy, vii) Mineral Resources, viii) Textile & Apparel Industry, ix) Software and Knowledge Services and x) Basic Sciences, Emerging Technologies and Indigenous Knowledge.

Issues that affect the quality of life and slow down the economic progress of the country have been identified under each area. Some of the issues identified are; absence of measures in meeting drinking water demand, insufficient attention on food safety and risk assessment, increasing levels of non-communicable diseases such as diabetes and hypertension, environment and climate change related disasters, inadequate measures in prevention of prevention of industrial and industrial pollution and urban solid waste management, high dependency on imported fossil fuel in the transport sector lack of measures in product development using available mineral resources, increasing labour cost and high water and energy use in the textile and apparel industry, insufficient labour force, lack of relevant policies and lack of knowledge on emerging trends in ICT.

R & D is needed to solve these issues and appropriate mechanisms to fulfill the R & D needs have been identified under ten major intervention fields; i) policy formulation, ii) Pure and applied research, iii) Promotion of innovation, iv) Application of Nanotechnology, v) Application of Biotechnology, vi) Application of indigenous knowledge, vii) Testing, standardization, accreditation and assurance of Intellectual Property Rights, viii) Capacity building, xi) Application of Information Communication Technology and x) Science popularization and awareness creation.

The NRDF has identified more than 450 interventions under these 10 intervention fields.

NASTEC expects that our scientists will develop detailed research projects based on this framework. Science administrators and policy makers can also use this framework as a guideline in disbursing funds for R & D, developing action plans, formulating policies and also in decision making.

The interventions proposed, if properly implemented will contribute to; solving the major issues discussed above, increasing living standards of people in our country and enhancing its economic development. In the long run this will take the country towards sustainable development, while becoming a scientifically and technologically advanced nation.

The NRDF was presented to the President by NASTEC.

Asha Pitadeniya
Senior Scientist
National Science and Technology Commission

1st ANNIVERSARY CELEBRATIONS

Sri Lanka Planetarium

The Sri Lanka Planetarium conducted some main activities within the year 2016 to achieve their main objective, popularizing Astronomy all over the country. Among them planetarium presentations, outdoor programmes and Astro-IT classes take the pride of place.

Highlights of Planetarium Presentations

173,906 spectators visited us in the period of January 01, 2016 to September 30, 2016. So we are happy to say that we already achieved our targets for 2016. Apart from the general planetarium presentations, special planetarium shows are conducted for differently-abled students to encourage them to enjoy their lives by getting them out of their restricted boundaries.

Night Sky Observation Camps

According to normal scenario the night sky observation camps are held at schools for students. In this year considering public demand the night sky observation camps for the general public are held at the Planetarium premises and interactive activities are accomplished with them.

Astro –IT Classes

One hundred and fifty (150) school children (Grade 6 – Grade 10) registered for the annually conducted "Astro- IT" course in the year 2016. Especially in the mid of this year, the Sri Lanka Planetarium started a new programme called "Astro-Kids" for children in between Grade 5 and preschool.

Plans for next year (2017)

The digital full dome film database will be expanded by adding more films in various areas on astronomy and space science to provide a better service to a large number of astronomy interested public in the country.

To improve the consciousness of children about different areas of astronomy and space science, paper articles will be written for children's newspapers every month without restricting to paper articles to be written for special situations only.

The Sri Lanka Planetarium's website will be modified in a user friendly and attractive manner. Then a better service can be provided to astronomy knowledge seekers by sharing knowledge and new evidences. It will facilitate the dissemination of information.

Astronomy and science related workshops for school students and teachers will be held every three months and astronomy related activities will be conducted by collaborating with astronomy societies in schools.

Sri Lanka Inventors' Commission

Main activities for 2017

Upgrading of "Sahasak Nimewum National Exhibition" to an International Exhibition

Presently, the "Sahasak Nimewum Exhibition" is held annually on the scale of national level. From the year 2017 onwards it will be upgraded to an international inventions exhibition with the participation of inventors from other countries.

Establishment of a Patent Support Division for SLIC in parallel to the TISC Centre

This will be a great support for inventors to draft their patent applications and carry out patent search. The inventors will be funded to apply for local patent as well as PCT filing / US patent filing by this division.

Innovation Accelerator Fund

The Innovation Accelerator Fund will be implemented to provide grants in large scale for inventions commercialization and research commercialization for the researches which the outcome would be an innovation.

Celebration of National Inventors' Day with more inventors' promotional activities

The celebration of National Inventor's Day will be implemented with more activities to attract general public in making of inventions and popularize inventions and innovations.

Vidya
The Official Newspaper of the Ministry of Science, Technology and Research

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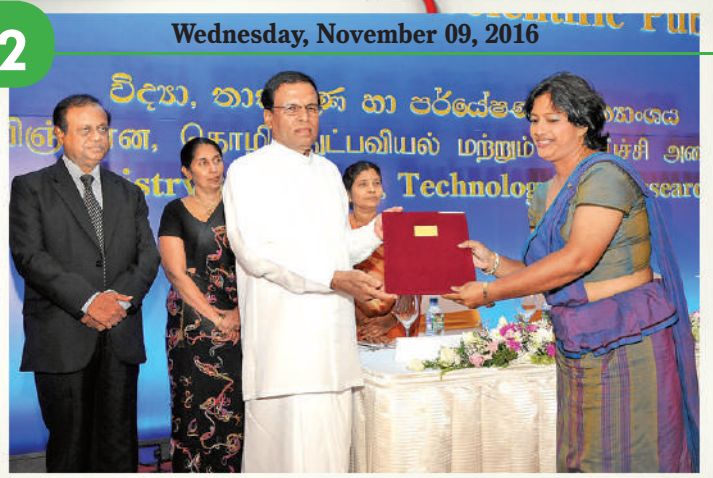

Research Awards Ceremony 2016 - National Research Council

President addressing " Science and Technology for Society Forum - 2016 "

Launching the Annual Research Vision of National Institute of Fundamental Studies…

STS Forum 2016

World Science Day Exhibition

Vidhatha 'Haritha Kadamandiya'

Launching 8th commemoration of Sri Arthur C. Clarke…

Award Ceremony felicitating New Inventors

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