



Ministry of Science, Technology and Research



**National Inventions Exhibition** 

Continued on page 03...

"To be a world renowned center of

excellence for research in fundamental studies"

SCIENCE AND TECHNOLOGY FORUM Immensely Successful

The Science and Technology for Society Forum Sri Lanka 2016 was held from 07 – 10 September. The inauguration of the Forum was held at Nelum Pokuna Theatre under the aegis of President Maithripala Sirisena and Prime Minister Ranil Wickremasinghe.

The main objective of this Forum was, parallel to the progress achieved by the science and technology field has internationally, fulfilling the necessary conditions for Sri Lanka to reach the same aims.

700 Doctors and Professors including Sri Lankan scientists and 100 overseas scientists participated in this Forum. More than 500 Undergraduates and school students participated in this Forum, held under the theme 'Harnessing Science, Technology and Innovation for Sustainable National Development.'

## 21<sup>st</sup> International Forestry and Environment Symposium at Kandalama



The 21st International Forestry and Environment Symposium organized by the Department of Forestry and Environment Science of the University

of Sri Jayewardenapura was launched on the 23rd of this month at "Kathikawa" Hall, Heritance, Kandalama. *Continued on page 03...* 



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Ministry of Science, Technology and Research

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f n Sri Lanka, there are only a few places where they engage in fundamental research. National Institute of Fundamental Studies located in Hanthana Hills, Kandy, is the only national institute which is established by an Act of Parliament to carry out scientific research to facilitate fundamental studies with an emphasis of basic research for national development and was well as for the advancement of science."

Every developed and developing country spends large amounts of money for scientific research as they consider that the research is the

front-runner of wellbeing and the development of their nations. Basically, there are two types of scientific research based on their objectives; applied and basic research. Applied research is used to find solutions for everyday problems cure illness and develop innovative technologies. Whereas basic research, also called pure research or fundamental research, is scientific research aimed to improve scientific theories for improved understanding or prediction of natural or other phenomena. As an example, Determination of the structure of DNA about 40 years back was a great achievement of fundamental research and developing genetic engineering technology is a product of applied research. In the past, many countries were keenly interested in applied research as governments wanted scientists to do research to get outcomes to develop the economy. Countries such as Japan, USA, Sweden and Australia have reached higher development goals as a result of concerning more on fundamental research.

#### **Benefits**

There are fringe benefits for a nation derived by doing fundamental research. Out of those,

 Gaining new knowledge Providing the foundation for an innovative economy for sustainable development • Providing opportunities for a large number of applied researches are more vital.

Fundamental



## Importance of Fundamental Research for the Jelopment of the Country research

gives a strong contribution to the development of a country. Well-developed countries such as USA AND Japan consider fundamental research as the catalyst to increase the production of the country. It is proven by the appearance of new knowledge gained by fundamental research in every product made by developed countries. There are socioeconomic benefits of doing fundamental research too. The new knowledge gained by engaging in fundamental research empowers other professions in the country and it motivates the younger generation to engage and practice doing fundamental research. It will ensure the creating of great scientists such as Newton and Einstein in the future

In many countries, there are pioneer institutes which are mandated to do fundamental research. Max Plank Institute of Germany, John Hopkins University and Harvard University in USA, Oxford University in the UK and Tokyo University of Japan are few of them. Most of the time, initiation of such institutes has been



the potential to be raised by doing fundamental research. Intellectual properties gained by doing fundamental research are very much valuable in international trade.

#### Start of NIFS

In Sri Lanka, there are only a few places where they engage in fundamental research. National Institute of Fundamental Studies located on Hantana Hills, Kandy, is the only research institute in Sri Lanka, which

has been established by an Act of Parliament to carryout fundamental research. It was establish in 1981 with the vision of being a renowned center of excellence for research in fundamental studies

World famous Sri Lankan scientist who worked at NASA, Prof. Cyril Ponnamperuma initiated establishing the National Institute of Fundamental Studies (then the Institute of Fundamental Studies). Prof. Cyril Ponnamperuma was the principal investigator of the analysis of soil samples which were brought to earth from Luna by Project Apollo.

#### **Fundamental** Studies in 15 fields

Generally, it takes much more time to show results of fundamental research, but the National Institute of Fundamental Studies

(NIFS) have shown very promising results which

led to the acquiring of 10 patent licenses for research findings. At present, NIFS is engaged in fundamental research in around 15 science disciplines which is led by Prof. Parakrama Karunarathne, Director of the Institute. Some of the fundamental studies have already shown very positive results and have gained the inter-



est of government and private sector. Fundamental studies led by NIFS led to the discovery the world's first biofilm fertilizer which is able to re-establish destroyed soil and biodiversity. Also biofilm increases the yields of cultivation thus it is a great support to farmers' economy.

#### Lot of Results

NIFS introduced Sri Lanka's first rhizobium inoculant bio fertilizer. By applying this bio fertilizer to legumes such as cow pea, bean, mung bean, and the amount of urea which is added to the field can be minimized by 50%. This reduction decreases soil destruction by chemical fertilizer and saves billions of Rupees which are spent for the import of urea.

NIFS scientists work on different aspects of environmental pollution. They found a way to convert environment pollutes to biochar thus reducing the garbage problem in urban areas of the country.





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#### Continued from page 02...

Fundamental research on renewable energy at NIFS has made a significant contribution towards developing low cost materials for solar cells, which leads to produce low cost solar cells in the country.

Li-lon rechargeable batteries are more crucial devices in modern technology of mobile electronic devices. NIFS fundamental research has been successful in developing Li-lon batteries locally by using Sri Lankan graphite. It reduces the cost of Li-lon batteries adding a higher value for local graphite. Deep theories of mathematics and physics are taken into the bunch of fundamental research at NIFS. Scientists of NIFS have been successfully able to make a direct link between the human brain and computer, called Brain-Computer Interface. It enables to control electronic devices by using human thoughts. In the near future, it will be used



with disabled people, thus they will be able to live freely by controlling equipment with their thoughts.

#### Exploring Living and Non-living Natural Resources

NIFS is engaged in exploring living and non-living natural resources to be used for human wellbeing. They have been able to find a new ingenious species of spiders, value-adding for natural graphite and conversion of Sri Lanka natural minerals into highly upgraded advanced materials such as highly purified graphite, surface modified graphite, grapheme and nano-carbon composites.

Also NIFS has successfully carried out the first ever geophysics survey of the Eppawala Phosphate Deposit. NIfS as a nationally important research body

in the country is focusing on fundamental research on health issues as well. Among

those commitments, invention of new technology to identify and define TB causing Mycobacteria, developing low cost nano water purifying systems, studying the relationship between CKDu and cyanotoxins and testing aquatic predators to control dengue are prominent.





#### Food Science and Nutrition

NIFS has accepted the challenge of eradicating malnutrition in the country, so scientists work on testing high protein diets by using spirulina, quantifying the antioxidant capacity of indigenous medicinal plants to treat non-communicable diseases such as heart disease and cancer.

The heart of every research institute is its research staff. NIFS have got a team of very talented researchers of genius level. Among them, two are Senior Research Professors, five are Research Professors, three are Senior Research Fellows, three are Research Fellows, two are Visiting Senior Research Professors and one is a Visiting Research Professor. Their excellence in fundamental research has been proved by their research careers.

#### **Specialty**

Another specialty of NIFS, Kandy, is serving as a training center for young scientists in the country. At present, about 40 postgraduate students work as Research Assistants of NIFS which helps the project leaders to carry out research projects while completing their degrees. Besides that, students who are interested in getting exposure in doing scientific research are working as volunteers in research projects of NIFS so they get an enormous opportunity to serve the country as great scientists in the future.

For the utmost contribution towards developing novel techniques and innovations, scientists of NIFS have been respected locally and internationally with numerous awards. Other than doing basic research in science, NIFS also serves as a center of exchanging scientific knowledge nationally and internationally. For that, NIFS holds national and international workshops, research symposia, forums and special lectures. Any individual who is interested can participate in those programmes.

NIFS held South Asia's first science message service to the general public and annually holds a school science programme which train school students to engage in scientific research in the future. Applications for the school science programme are called from all island. NIFS is always devoted to do the best for the wellbeing of people in the country and for the advancement of science.

#### Pradeep Piyathilaka Communications and Media Officer NIFS

### "Sahasak Nimawum" ...

The "Sahasak Nimawum" Exhibition and Competition, the foremost exhibition showcasing the creative abilities of Sri Lankans organized by the Sri Lanka Inventors' Commission under the Ministry of Science, Technology and Research was held on the 22nd of this month amidst much pomp and glamour. Three hundred and five (305) inventions were produced for this exhibition under four categories Schools, Universities, Tertiary Education Institutions, and the General category representing commercialized inventions and general public covering 14 fields.

### Continued from page 01....

The inauguration ceremony

of "Sahasak Nimawum

2016 Exhibition and Com-

petition was held with the

participation of the Minister

of Science, Technology and

Research Susil Prema-

jayantha, State minister

Lakshman Senevirathne,

Ministry Secretaries and

other distinguished guests

## 21<sup>st</sup> International ...

Considered the oldest and most reputed Symposium on forestry and environmental science field in South Asia, the theme of this year's Symposium was "Meeting environmental challenges in developing economies."

Minister of Science, Technology and Research Susil Premajayantha participated in this Symposium as the Chief Guest representing President Maithripala Sirisena. The keynote addresses of the Symposium were delivered by Richard Vlosky, Professor in Forest Sector Business Development, School of Renewable Natural Resources, Louisiana State University, USA, David Newsome, Associate Professor in Environmental Science and Ecotourism, Murdoch University, Western Australia, Australia and Naohiro Goto, Associate Professor / Presidential Advisor (Promotion of University-Community Partnership,Department of Environmental and Life Sciences, Toyohashi University of Technology, Aichi, Japan.

Im

Scien

tific Advisor to the Prime Minister

the quest lecture.

of Malaysia and the Chairman of Bio-

Economy Corporation Malaysia delivered

Over 700 invitees participated in technical ses

sions. The final session on 10th of September

was reserved for further discussions on the way

forward to create a culture of science, technology

The Science and Technology for Society Forum Sri Lanka 2016 investigating science and technology from a new angle was held on the 07th of September at the Nelum Pokuna Mahinda Rajapaksa Theater, focusing the eves of the whole world on Sri Lanka. Local and overseas scientists, researchers, explorers who have won the world and scholars who are expecting to enter the science and technology field participated on 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 foundation for this Forum where local and overseas scientists met on one platform was laid at the annual Japanese STS Forum held at Kyoto, Japan, where the Sri Lankan Prime Minister delivered the keynote address.

#### Sri Lanka STS Forum - 2016

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.

#### Main objectives of the Forum · Reaching excellence in the field of science and

technology Reaching an independent and collective growth through the use of science, technology and inven-

tions Promoting high-tech industries in Sri Lanka Adding Sri Lankan industries into the global

value chain

2016 Sri Lanka STS Forum in Sri Lankan context Attention was paid on

The tasks of science and technology field in reach ing Sustainable Development Goals Citizen's science Skills development in

science field Technology and inventions Financing and investments in science and technology field Establishing a inventions platform for Sri

Lanka Nanotechnol-OQ/ 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.

#### Keynote Address by Prof. Michael Kelly The keynote address of the 2016 Sri Lanka

STS Forum was delivered by the Professor of echnology of the Cambridge University of the United Kingdom Prof. Michael Kelly. Over 1200 invitees were in attendance at this ceremony. The technical sessions on 08th September were held under the aegis of the Prime Minister. The keynote address of these sessions was delivered by the former Minister of Finance and former Minister of Science and Technology of Japan, the Chairman of the Japan STS Forum that supplied the initiative to

hold such a STS Forum in Sri Lanka, K ji Omi. Professor Tan Sri Dato' Seri Dr. Abdul Hamid, who



Vidya

#### Citizen Science

tion. With the objective of encouraging the Sri Lankan science technology and inventions field for participatory sustainable development and establishment of quality infrastructure facilities, top-level

several meaningful lectures. Other than the five group sessions, 21 break-up sessions were also held

Science, technology and inventions for Sustainable Development Goals

and inventions after the Colombo Resolu-· Research and inventions environmental system Emerging technologies Nanotechnology The main lectures and short presentations helped to broadly establish interrelationships between Sri Lankan scientists, the Sri Lankan industry field and Government Agencies

Major results of the Forum scientists from 23 countries delivered Colombo Resolution

> A strategic operation unifying science, technology and inventions for Sri Lanka's sustainable development

The following objectives are expected to be fulfilled for that.

ing glass for solar panels and healing cancer with robotics. New laboratories have to be constructed to achieve this. Furthermore, a programme to We are ready to initiate

future.

this Forum?

Has the foremost objective of holding the Science and Technology for Society Forum Sri Lanka 2016 been achieved

successfully? It was successful beyond our expectations. We received praise from scientists from overseas and this country. They are inquiring as to how the next step of this Forum will be organized. Having such an interest among scientists is the best example of the success of this Forum. Everybody's opinion of the inauguration sessions and hospitality services of this Forum is that they being at internation level is another instance of further uplifting Sri Lanka.

#### What was the participation of Sri Lankan scientists at this Forum and how was it of assistance in fostering cordiality among those scientists?

Sri Lankan scientists presently in the country and Sri Lankan scientists living abroad with overseas scientists are keen on taking the knowledge gleaned at this Forum to the world as well as exchanging ideas. A time scale of three years has been allocated for that. Especially a month's time has been given to plan projects of utilizing science and technology for the service of the society related to the six key areas such as biotechnology, robotics and digital health. Within a month the scientists representing these key areas will take the necessary steps to

Inclusion of science, technology

and inventions with strategic devel-

Giving new life to existing sci-

opment goals agenda

Nurturing higher technologies, national develop-

ment and combining Technology Drivers with Test

· Developing international cooperation's, and bilat-

eral research and enhancing science diplomacy

· Enhancing a science culture based on citizens

• Attracting a new generation of multinational in-

The complete Forum was added to the Internet

with the objective of taking all this information to

Researchers and undergraduates from Universities

ticipated in the sessions held at Waters

located in various locations in the country par-

vestors to invest in Sri Lanka's science, technology

ence, technology and inventions system

**Beds** 

and inventions field

interested parties.

results of this Forum to this country in collaboration with State and private sectors. submit three-year plans to me. That was the foremost objective of holding this Forum. Accordingly, what are the

Promoting high-tech industries in Sri Lanka Adding Sri Lankan industries to the global value

chain With the objective of achieving these goals, the social tasks of the science and technology field relevant to Sustainable Development Goals was discussed at length at this Forum. Discussions were also held on exploring opportunities in the science and technology field and avoiding the obstacles in using science and technology in solving the problems of the Sri Lanka society. Furthermore, what is so special here that this Forum paved the way for high profile open intellectual discussion among Sri Lankan scientists, overseas scientists, and Sri Lankan scientists living overseas. This will provide the ability of coming to an agreement about the problems raised in the use of applications and their uses in this country

Pramitha Randali Pabasara

5

launch research and train resource personbecome essential

sessions it was said that nine

scientists from the University of Houston

For example, the necessity of very ad-

will take steps to work in those fields in the

vanced laboratories has arisen to broaden the technical facilities necessary for a hos-

pital and properly conduct those research-

es. It is confident that even those fields will

be enhanced through our scientists taking

steps to provide their knowledge to them. How was the stimulation relevant to the

school and university students through

tions. It should be specially mentioned here

that we had got only two scholarships from

the European Organization for Nuclear Re-search (CERN) situated in Geneva. But,

the number of scholarships was increased

to four as a result of this Forum. Further-

more, it was a great victory being able to

increase the number of scholarships we

I will be participating in the STS Forum

in Japan. Even through that we will get

an opportunity to take our science and

technology field to broader horizons in the

future. We the Ministry and scientists are

ready to work with the special contribu-

tions we are getting from UNESCO and

international relations to contribute the

had from Sakura of Japan from 10 to 100.

subject of science and technology in

This is very important for future general

In the

sections expected to be enhanced in the field of science and technology?

Attention has been given to technologies that can be of close service to the general public such as gene technology, matching medicines, usBlack Holes are various places in space that do not allow light to escape. Most often when a star dies, its gravity is collected in a small space creating Black Holes. As light does not escape from Black Holes, they cannot be observed through the naked eye. Telescopes equipped with special equipment are used to observe them. Through them the specialized behavior of stars situated close to Black Holes can be observed.

Black Holes can exist in many sizes. Scientists believe that the smallest Black Holes can be the size of an atom. But, the power accumulated in them is immense. It is said that the variety of Black Holes named "Stellar" can be about 20 times larger than the sun. Scientists believe that a large number of such Black Holes exist in the galaxy where the earth is located. The largest Black Holes are named Super Massive Black Holes. They are about a million stars in size. According to the deductions

of scientists, such Black

star

The refrigerator is a piece of specialized equipment in a home. If there is an understanding of the condition of a refrigerator when selecting a refrigerator for home, space exists for a correct choice instead of going for the most expensive of most modern refrigerator. Other than the quality and long life of foodstuffs refrigerated, it is very important to consider the electricity consumption of the refrigerator. Wasting energy inefficiently is a waste of money and is disadvantageous at national level. Refrigerator Laboratory

This laboratory can test three refrigerators of 250 W capacity at one time. The temperature range of this laboratory is  $7^{\circ}$ -  $45^{\circ}$  C (± 0.3° C)

Selecting a Refrigerator

Holes exist in the middle of every galaxy. Scientists believe that Black Holes were created at the birth of the universe. "Stellar" Black Holes are created with the breakdown of the

and the relative humidity is 7°-90° (± 3%). The wind speed is 0.25 m/s (with a temperature variance of 1° c/m). These tests are carried out under the SLSI 1230:2003 parameters issued by the Sri Lanka Standards Institute approved by the Sri Lanka Electricity Board.

## The below mentioned five tests are carried out in this laboratory.

### 1. Testing the temperature of the refrigerator

In this test, it is tested whether the relevant temperature is maintained throughout the refrigerator.

#### 2. Energy Consumption

Here, the efficiency of refrigerator (Kwh/m3) is measured for a unit capacity of the refrigerator.

#### 3. Time taken to reach the relevant temperature

Here, the time taken from the switching on of the refrigerator to reach the relevant temperature is measured.

#### 4. Ice making test

Here, the time taken to turn the water in the refrigerator to ice is measured.

#### 5. Test of water droplets forming on the outside surface of the refrigerator

Here, the forming of water droplets on the outside surface of the refrigerator is measured and the temperature insulation of the refrigerator is measured through this test.

Eng. Roshani Costa National Engineering Research and Development Center core. The explosion thus caused is called a 'Supernova' condition. Even though Black Holes cannot be observed through the naked eye, the effects caused by heavy gravity on stars and gases around them can be observed using modern technology. When stars travel near Black Holes, a high-powered light invisible to the naked eye is emitted and their specialized behaviour can be observed through telescopes stationed in space.

Many people are facing a dilemma whether the destruction of earth will be caused by a Black Hole. Black holes do not travel through the universe destroying stars and planets. Earth will not be destroyed by a Black Hole as not a single Black Hole is situated near the galaxy where the earth is located. Even is a Black Hole of the size of the sun is created in the position of the sun, the earth will not be drawn into it. As it has gravity

equal to the sun, all planetary bodies centering on the sun in the solar system will be orbiting the Black Hole. Furthermore, as the sun is not a very large star, a Black Hole will never be created in it.

NASA constantly monitors Black Holes through space telescopes and satellites. This will help in finding answers for many questions about the birth of the universe.

> Amitha Galappaththi Akmeemana

# Black Holes in



Dr. Bandula Wijay of universal acclaim accepting his credentials from Minister of Science, Technology and Research Susil Premjayantha

# A post of Brand Ambassador Monor Free Presi pala Siris

**D**r. Bandual Wijay was appointed as an International Ambassador in the field of science, technology and inventions on voluntary basis to further broaden the science education of Sri Lanka turn Sri Lanka into a center of scientific inventions

Development of Science and Technology Grassroots Level

and work with the Ministry of Science, Technology and Research and the National Science Foundation.

Dr. Bandula Wijay, an expatriate born in Sri Lanka with several patents for a series of inventions for heart patients, is living in Houston, USA. President Maithripala Sirisena appointhim as a Brand Ambassador. The credentials of the new post were presented to him by Minister of Science, Technology and Research Susil Premjayantha on behalf of President Maithripala Sirisena when he visited

the high level

Political Forum to be held in

New York from

11 - 20 July at

New York, he further said.

Scientific findings free to everyone

Furthermore, the

proposal of the Euro-

Sri Lanka to attend the

International Science and Technology Forum on Science and Technology for Society on 19<sup>th</sup> of September.

Wednesday September 28 2016



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The foundation of the progress of science, technology and inventions is imperative during the coming 15 years to achieve all Sustainable Development Goals (SDGs). SDGs extend to a number of fields from eradication of poverty to food security, energy, water and sanitation and climate change, said the General Secretary of the United Nations Organization Ban Ki Moon at a high profile Forum consisting of business leaders and inventors organized by the United Nations Head Office at New York.

"The major challenge here is connecting science, technology and progress of inventions with grass roots level sustainable development and as the objective of all activities is eliminating that gap, all of you should overcome decisive challenges," he further said. A synopsis of his address at the Forum is given below.

The objective of this Forum called by the President of the Economic and Social Council (ECOSOC) is, providing a partnership of prosperity ensuring a life of honour for everybody in a clean and healthy earth. Even though SDG 17 was named as including the advent of science and technology with inventions to sustainable development, science, technology and inventions should not be limited only to SDG 17. That is the main basic of activating all SDGs. Furthermore, science, technology and inventions have to be directed to psychological and attitudinal inventions without being limited to new technologies and software.

Introducing new strategies

It is also essential to consider questioning assumptions, re-thinking of established systems and methodologies and introducing new strategies.

The General Secretary also said that the Multinational Companies Forum for gathering and encouraging new ideas, scaling and finding methodologies to conform to fast tracked development will be activated annually till the year 2030.

In this way, the activities of the United Nations Organizations will take a new path. A proprietary participation and active address should be contributed by all strata of the society. In this way, in the coming 15 years, sustainable development can be made a global reality. Sustainable development is development deserted by none is the meaning of the meaning of the 2030 Agenda Pledge and it has been noted in the agenda as the theme selected for pean Economic Commission that everybody should be allowed to use free of charge the scientific findings of State Institutions has been confirmed. That is considered as the democratization of science. If we are able to make use of this present condition to the maximum for developing nations such as Sri Lanka, we should be able to utilize not only the local growth of science, technology and inventions but also international knowledge and developments to eradicate the grass roots level poverty of the Sri Lankan community.

#### Benefits to the lower stratum of society

According to the message of the General Secretary, we and every strata of society should work together speedily to bring to world's attention the programmes such as technical, agro-technical, health, hygiene and educational, instructional, educational, and technical transfers giving the benefits of science to the lower stratum of the society presently activated to give to them the knowledge of science, technology and inventions and to operate them in a more developed, timely and efficient manner. The best time for that is now.

From Internet information

## Using aluminum cookware

luminum is a very good thermal Aconductor. Vessels made from aluminum heats very quickly. Accordingly, aluminum vessels greatly reduce the cooking time. Furthermore, aluminum vessels are low in cost. So, aluminum vessels play a major role among the vessels used for cooking in the kitchen. Even though many people use aluminum vessels for cooking purposes because of their abovementioned qualities, aluminum is a metal that should be never used for cooking. Although aluminum vessels are used because of their low cost and the objective of saving gas in cooking, the health problems caused by this practice are very serious.

#### Active metal

Aluminum is a very active metal, easily entering chemical reactions. It reacts with acids very actively and creates new compounds. If you are cooking acidic food in an aluminum vessel, the vessel reacts with the acid in the food during cooking and creates new compounds,

National Workshop on Separation A Techniques in Natural Product Research was held at the National Institute of Fundamental Studies (NIFS), Kandy, from 19th to 23rd of this month. The main objective of this national workshop was training young scientists on methodologies to

extract and separate the bio-active compounds in indigenous medicinal plants. It

which are

thor

is expected to enhance medicines useful to humans through the hidden bio-active properties of medicinal plants used traditionally from oughly mixed with food during the cooking process. Aluminum compounds thus mixed with food ends up in your body. Aluminum is not a metal essential to our body. Large amounts of aluminum entering the body are very dangerous. It can cause many health problems.

#### **Reacts fast**

Aluminum Hydroxide manufactured by aluminum reacting fast with acids is very harmful to the human body. As food items such as lime juice, lemon juice, tomatoes and vinegar react very fast with aluminum, it is very dangerous to cook such foods in aluminum vessels. But, as generally you

mix

something acidic such as lime, tomatoes and vinegar to any food you cook, it enters into oxidation reactions with aluminum. High temperatures used in cooking acts as a catalyst for

these reactions.

Harmful to health

Aluminum entering the body directly affects your nervous system. Today, aluminum has been identified as one of the main causes of loss of memory or Alzheimer's disease. Other than that, aluminum causes diseases in the stomach and the gastrointestinal tract. Though your kidneys have the ability of filtering and removing about 99% of aluminum you ingest, it is different in people suffering from kidney



diseases. Due to these reasons, from the year 2007, aluminum has been identified as a major poisonous ingredient in the USA and consumers duly warned. Most countries including Germany, Belgium and the United Kingdom has banned production and sale of aluminum cooking vessels.

Source: Literature

Y.G.L. Dilrukshi Science and Technology Officer Ministry of Science, Technology and Research

Asia's first science message service, releases a message disseminating very useful and



# 1000th Science SMS

attractive information related to physics, chemistry, biology and astrology every Tuesday, Wednesday and Thursday of the week to the subscribers via SMS, Facebook, Twitter, Google Plus and Google Groups in both Sinhala and English. Every Friday a question on science in day-to-day life is sent and the winner of the year is selected from subscribers who send the correct answer. A large number of students, teachers and science lovers

are already reaping the benefits of this service. Furthermore, the 'Vidunena Hawula" Science SMS Service (OSCEM) competed under the e-Learning and Education category in the e-Swabhimani Congress in 2014 and achieved victory. The Director if the National Institute of Fundamental Studies, Kandy, Prof. Parakrama Karunarathne, Ministry Secretary R. R. Wijialudchumi and Additional Directors participated in this ceremony.

a long time back through this training.

National Workshop on Separation Techniques in

Natural Product Research

The Keynote Speaker of this national workshop was Hon. Prof. Vijaya Kumar and the Chief Guest was Hon. Prof. Yoshinori Fujimoto of Tokyo Institute of Technology, Tokyo, Japan. This workshop was organized by the Natural Products Research Group of the NIFS, headed by NIFS **Research Professor** Lalith Jayasinghe and Professor Savitri Kumar.

he ceremony of sending the 1000<sup>th</sup> science SMS of the "Vidunena Hawula" Science SMS service was held on 31st of August under the aegis of the

Minister for Science, Technology and Research Susil Premjayantha at the Ministry Auditorium at Battaramulla. The "Vidu Nena Hawula" science message service is conducted by the Science Education and Dissemination Unit (SEDU) of the National Institute of Fundamental Studies in Kandy, operating under the Ministry of Science, Technology and Research. This service is provided free of charge, with the aim of improving science literacy and scientific temperament of Sri Lankans. This service, launched in 2012 as South

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