



Industrial Technology Institute

(COMSAT Centre of Excellence)

Ministry of Technology & Research

SRI LANKA

Introduction

Industrial Technology Institute

[formerly Ceylon Institute of Scientific & Industrial Research (CISIR)]

Multidisciplinary R & D institute by its mandate

Established in 1955 under the Parliament Act no 15 of 1955 (CISIR Act) in order to support the Industrial Development in the country.

Since 1998 the Institute is functioning under the Science & Technology Development Act No 11 of 1994.

OBJECTIVES & FUNCTIONS

The major objectives of the institute are multidisciplinary Scientific & Industrial research and technology transfer for rapid industrial development in the country

Functions : - to support industry by-

1. *Undertaking on contract, testing, investigation and research, for improving product quality, technical processes and methods used in industry, and for discovering new processes and methods to be used in industry;*
2. *Providing technical services and consultancies; and engaging in activities connected with technology transfers, the adaptation of technologies and the development of new technologies*

OBJECTIVES & FUNCTIONS

3. *to conduct research with a view to accelerating industrial technology development;*
4. *to collect, process and disseminate useful technical information, in particular on “shelf technology” with a view to accelerating industrial development;*
5. *to undertake training of persons in areas related to the experience of the Technology Institute;*
6. *to undertake or to collaborate in the survey and monitoring of environmental pollution and to recommend remedial measures to mitigate such pollution;*
7. *to co-operate with government departments and institutions, universities, technical colleges and other bodies in demand driven research to promote industrial technology development*

VISION & MISSION

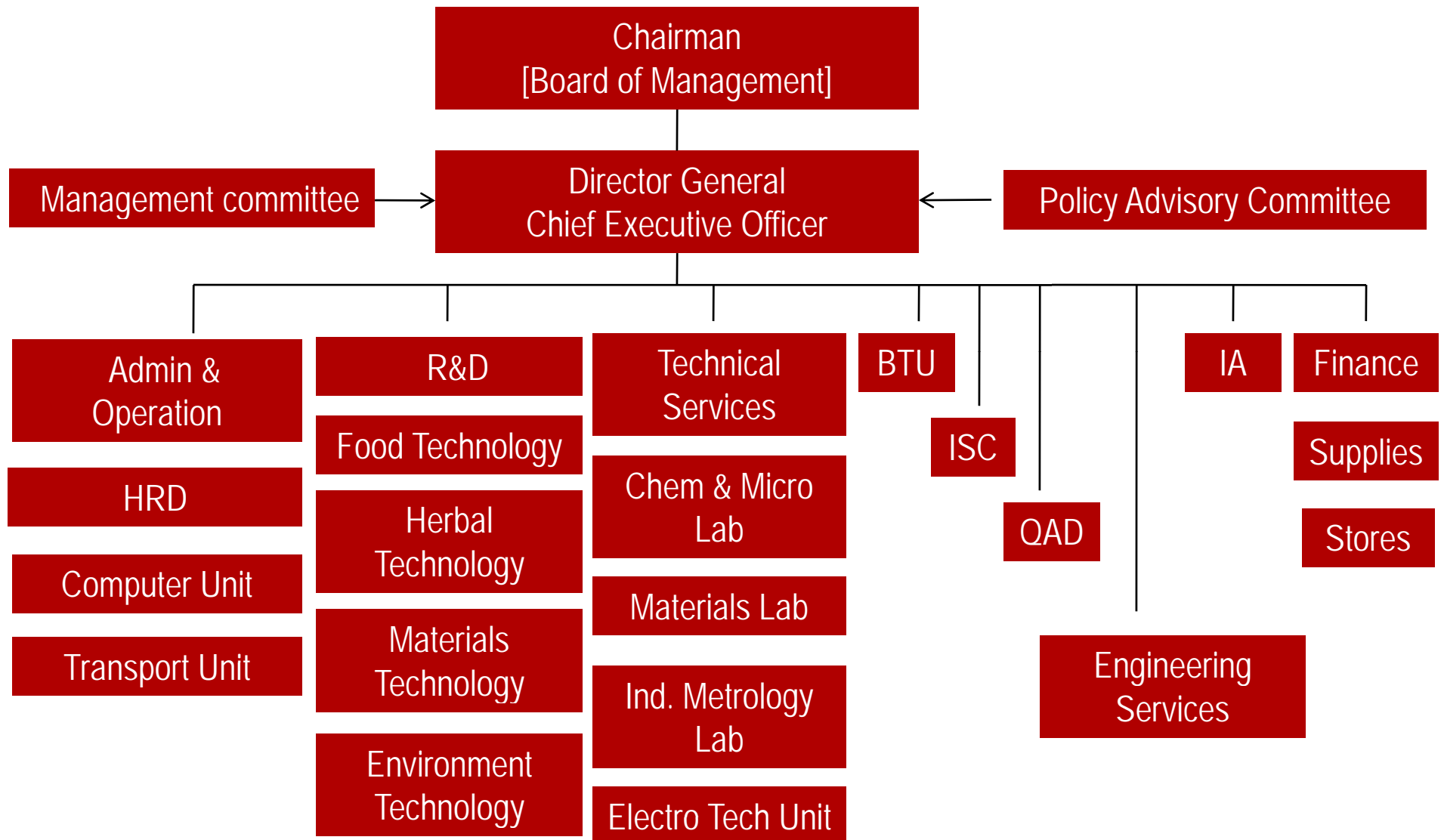
Vision

To be a centre of excellence in Scientific & Industrial Research for national development

Mission

To conduct innovative R&D and provide internationally competitive Technical services to accelerate industrial development for the benefit of the people of Sri Lanka

Organization Structure



Human Resource

Category		Distribution	Educational Background				
			PhD	MSc MPhil MBA	Bachelor's Degree	Diplomas	Other
Management		19	6	7	2	1	1
Research	Scientists	69	8	23	34	--	--
	Engineers	16	--	3	12	1	--
Technical		98	--	4	18	33	20
Skilled		31	--	--	2	-	-
Support		94	-	-	8	6	6
Total		327	14	37	79	40	27

ITI Thrust Areas and Competencies

Thrust Areas

- **R & D for technology commercialization**
- **Internationally competitive Technological Services**
- **Research for society - Health, Nutrition, Environment**
- **Human Capacity and Infrastructure Development**

Competencies

- **R & D in Food, Herbal, Materials, Environment**
- **Internationally recognized accredited testing/calibration**
 - **High quality analytical/measurement facility in core areas**
 - **Chemical metrology services traceable to SI Units**
- **Strategic S&T information required by industry**

ITI Facility

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Technical
Services
Division



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Eng. Service

Administration





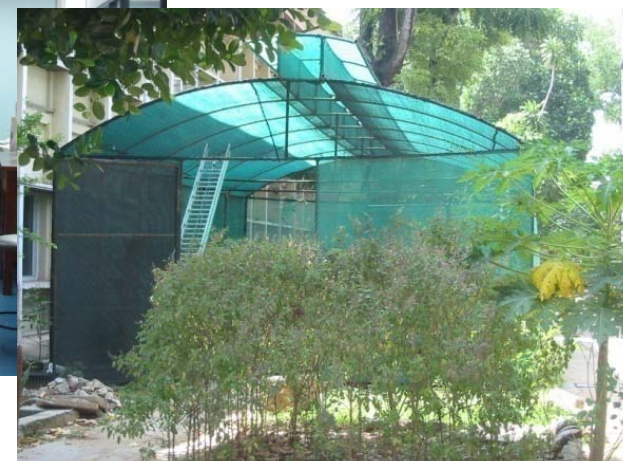
Food Technology Section



Engineering Services Section

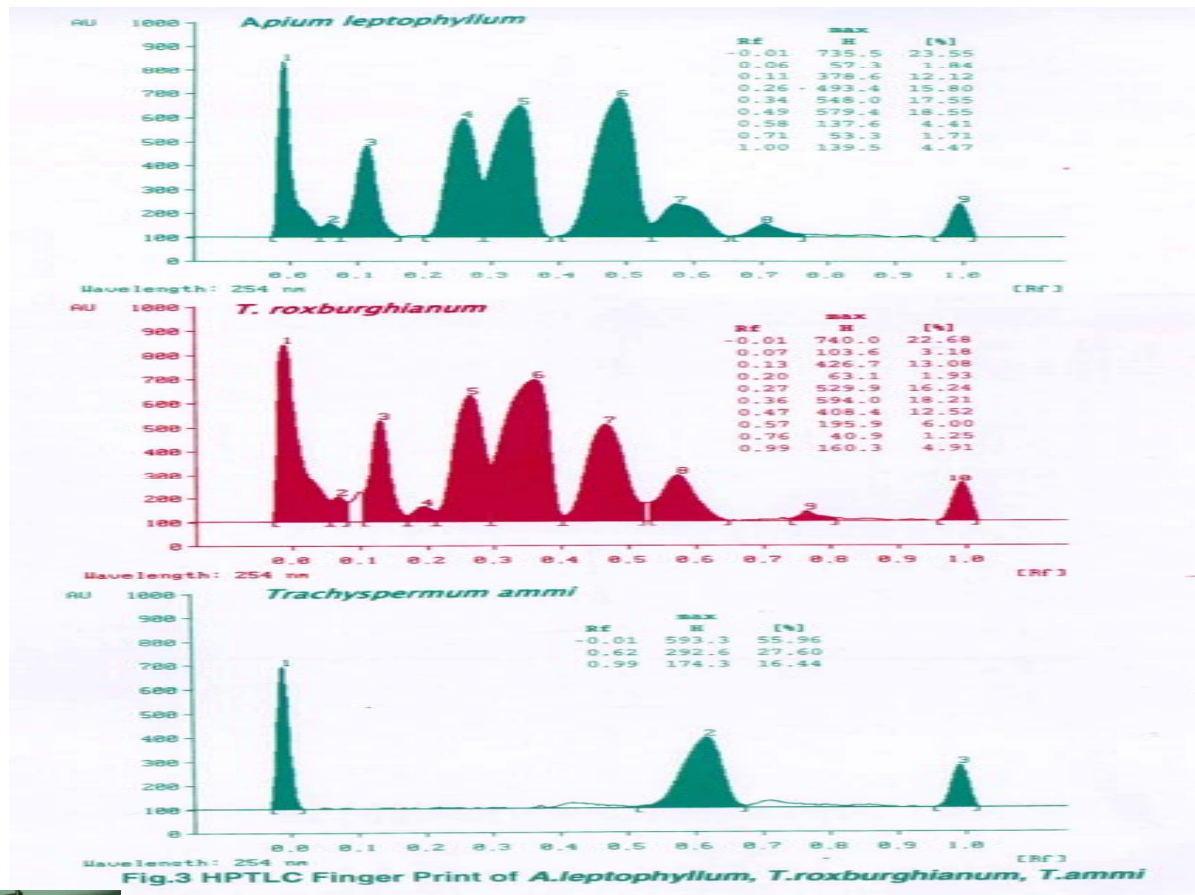
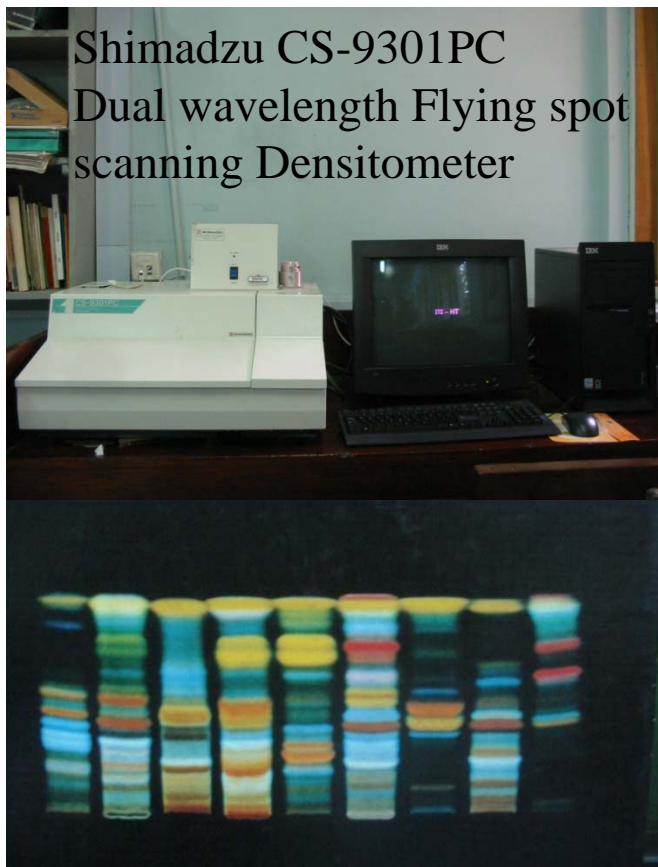


Herbal Technology Section



HPTLC-Densitometry

Shimadzu CS-9301PC
Dual wavelength Flying spot
scanning Densitometer



Scanning range: 200-700nm
UV range 200-370nm – Deuterium lamp
Visible range 370-700nm – Halogen lamp
Fluorescence – Xenon lamp

Gas Chromatography



Shimadzu GC-2010

Supelco wax capillary column

FID

- Auto-injection / Re-processing / Data-storage



Shimadzu GC- 14B

Poropack/Carbowax pack column

FID

HPLC



Pump : LC-10ADvp / Waters 510 & 501

Detector: UV-Vis SPD-10AV

Fluorescence RF-10AXL



System controller : SCL-10Avp

Pump (2Nos): LC-10ADvp

Degasser: DGU-14A

Detector: Diode array SPD-M10Avp

Freeze drying / Phase contrast optics



Bio-activity testing Lab

High-throughput spectrometer



Bioreactor



PCR



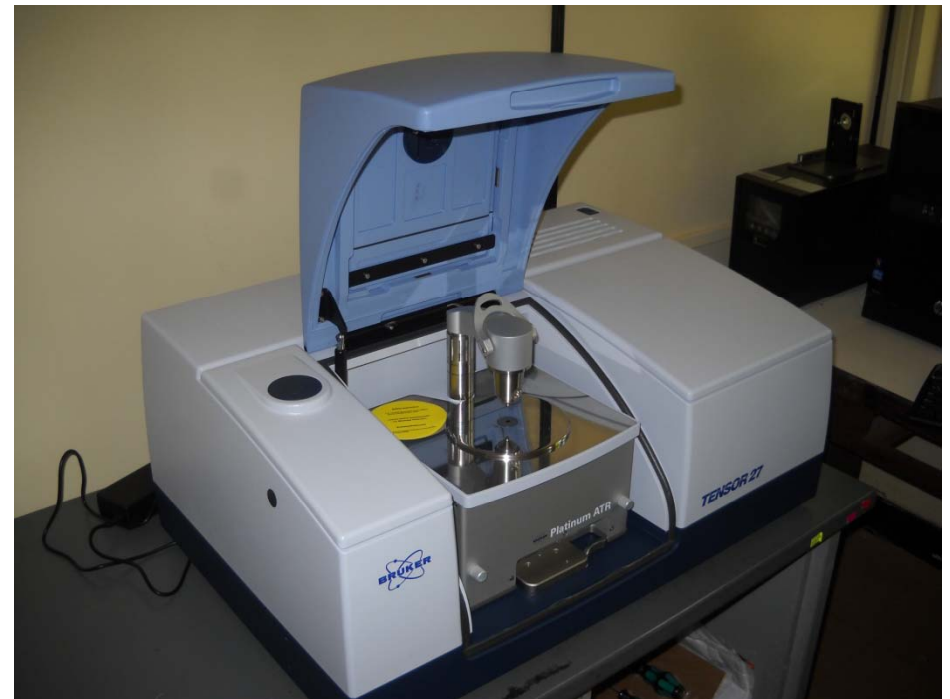
Refrigerated centrifuge



CO₂ incubator



Materials Technology Section



CENTRE FOR TECHNICAL EXCELLENCE IN CERAMICS



Excellence in Service to the Sri Lankan Ceramic Industry



Centre for Technical Excellence in Ceramics

Industrial Technology Institute, 363, Bauddhaloka Mawatha, Colombo 07. Tel: +94-11-2689950 Fax: +94-11-2379850



INFORMATION SERVICES CENTRE

Science & Technology Information Provider

Open to Public: 8.30 a.m. - 4.15 p.m. Week days

8.30 a.m. - 12.30 p.m. Saturdays

Industrial Technology Institute

363, Baudhaloka Mawatha, Colombo 07.











FIRST FLOOR PLAN OF BIO TECHNOLOGY CENTRE





FLOOR PLAN OF ADMINISTRATION COM



In Association with



Avant- Garde- Urban Design Partnership

No. 19, Clifford Avenue, colombo 03
Tel : 0115 - 660715, 0115 - 673407
Fax : 0112 - 564675

Achievements 2012 – 2013 : R & D

Technologies Transferred

- Instant rice
- Kothalahimbutu (low Glycemic index) biscuits
- Dry and wet feed formula for “Sea bass”
- Bt for Mosquito control
- Automatic Rain Gauge
- Omega 3 enrich chicken eggs

Achievements 2012 – 2013 : R & D

Technologies developed / awaiting transfer / other

- Red clay crockery
- Absorbent sanitary wear from agricultural waste
- Graphene from graphite
- Audio signal based automatic street lamp controlling system
- Value addition to rice
- A nutritional database of 44 local rice varieties
- Range of rice based products - noodles, extruded cereals, nutri-bars and 50% rice bread.
- A nursery and a plantation with Bamboo species
- Red clay based floor tiles & shock resistant cookware

Achievements 2012 – 2013 : R & D

Technologies developed / awaiting transfer / other

- Cultivation protocols for *Munronia pinnata* (Binkohomba)
- *Bacillus thuringiensis* formulation for cabbage & vegetable pests
- *Bt* strains to control Coleopteran pests (root grubs) attacking roots of vegetables and fruits
- Cosmetic formulations -Skin ointment, Face pack
- Patchouli- based deodorant spray, air freshener, after-shave lotion, mosquito repellent liquid vaporizer
- *Moringa oleifera* tea, capsule & anti-aging cream
- Mango jam & orange marmalade using tamarind seed pectin.
- Grape- lacto tonic drink – fruit based fermented drink
- Low cost clay filter for removal of fluoride contaminated water

Achievements 2012-2013 – Services

Testing Services

- Over 40,000 test services during the 2 year period
- Developed several new test methods.

Services to the Community

- ☐ Low level technologies through Vidatha/Diva Neguma
- ☐ Efarms – Cost-effective solution for real time information transfer from ITI to farmers/rural MSMEs.
- ☐ Survey of *Trihalomethanes* (THMs) in Public Water Supply (NSF funded)
- ☐ Low cost clay filter for removal of fluoride contaminated water (Pilot scale trials)
- ☐ Low cost clay filter for removal of heavy metals (arsenic etc) contaminated water

Achievements 2012-2013 – Services

Technological Services

- EIA for Industrial Zones (Horana, Puttalam etc.); EIA for Industries (Geocycle-Holcim, LABSA plant at Mathugama)
- Onboard noise/vibration measurements for newly built ships and high speed gun boats
- Repairing VIKING unit of M9 Locomotive for the Sri Lanka Railway
- Developed noise maps for industries and Bandaranayke international Airport and high ways in order to digitize the noise distribution and provide noise mitigation solutions for the industries (Star packaging (Pvt) Ltd, EX pack (Pvt) Ltd, Perimal glass (Pvt)Ltd, Lanka Tiles (Pvt) Ltd etc) in order to control the noise pollution
- Environmental monitoring/mitigation services for Highway Projects, Power projects, Harbours (Southern Highway, Outer circular road, Galle Port)

International / National events held / - 2013

World Congress on Pharmaceutical Science & Chemical Technology

16th – 18th December 2013 at Sri Lanka Foundation Institute, Colombo. Inauguration was held at Hotel Galadari, Colombo on the 16th December 2013. Over 100 participants from India, Malaysia, France and Kenya participated along with 40 local participants. There were 14 plenary lectures, 80 oral presentations and 40 poster presentation at the Congress.



International / National events held / - 2013

Study Tour on ISO 17025 Quality Management Systems for Scientist

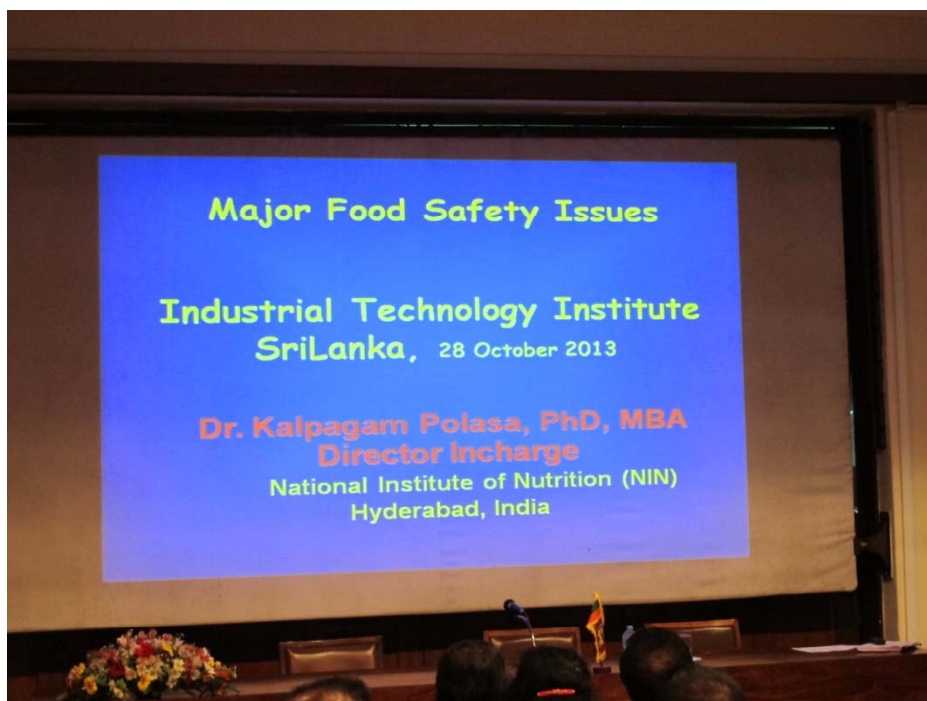
- UNIDO sponsored study tour on ISO 17025 Quality Management Systems for Scientist was held from 18th – 29th March 2013 at ITI. Seven Quality Managers and Microbiologists from Pakistan participated on the training. The programme specifically focused on providing hands on experience on implementation of laboratory quality management system in conformity to ISO 17025:2005 standard for testing laboratories.



International / National events held / - 2013

Seminar on Food Safety

A seminar on **Food Safety** was organized by the office of AD/RD in collaboration with US Embassy, Colombo on 28th October 2013 at the Main Auditorium, ITI. Dr. Miss. Kalpagam Polasa, Director – In charge and Head of Food & Drug Toxicology Research Centre, National Institute of Nutrition, Hyderabad, India graced the occasion as the Resource Person.



International / National events held / - 2013

Annual Research Symposium 2013

Annual Research Symposium 2013, under the theme “**Advancing Scientific Industrial Research through Innovative Research & Development**” was held from 23rd – 24th October, 2013 at BMICH, Colombo. Honorable Patali Champika Ranawaka, Minister of Technology & Research graced the occasion as the Chief Guest and Prof. Dr. M. Iqbal Choudhary as the Guest of Honour. Two parallel Technical Sessions were held at the Institute where 39 technical papers were presented.





COMSAT Events participated - 2013

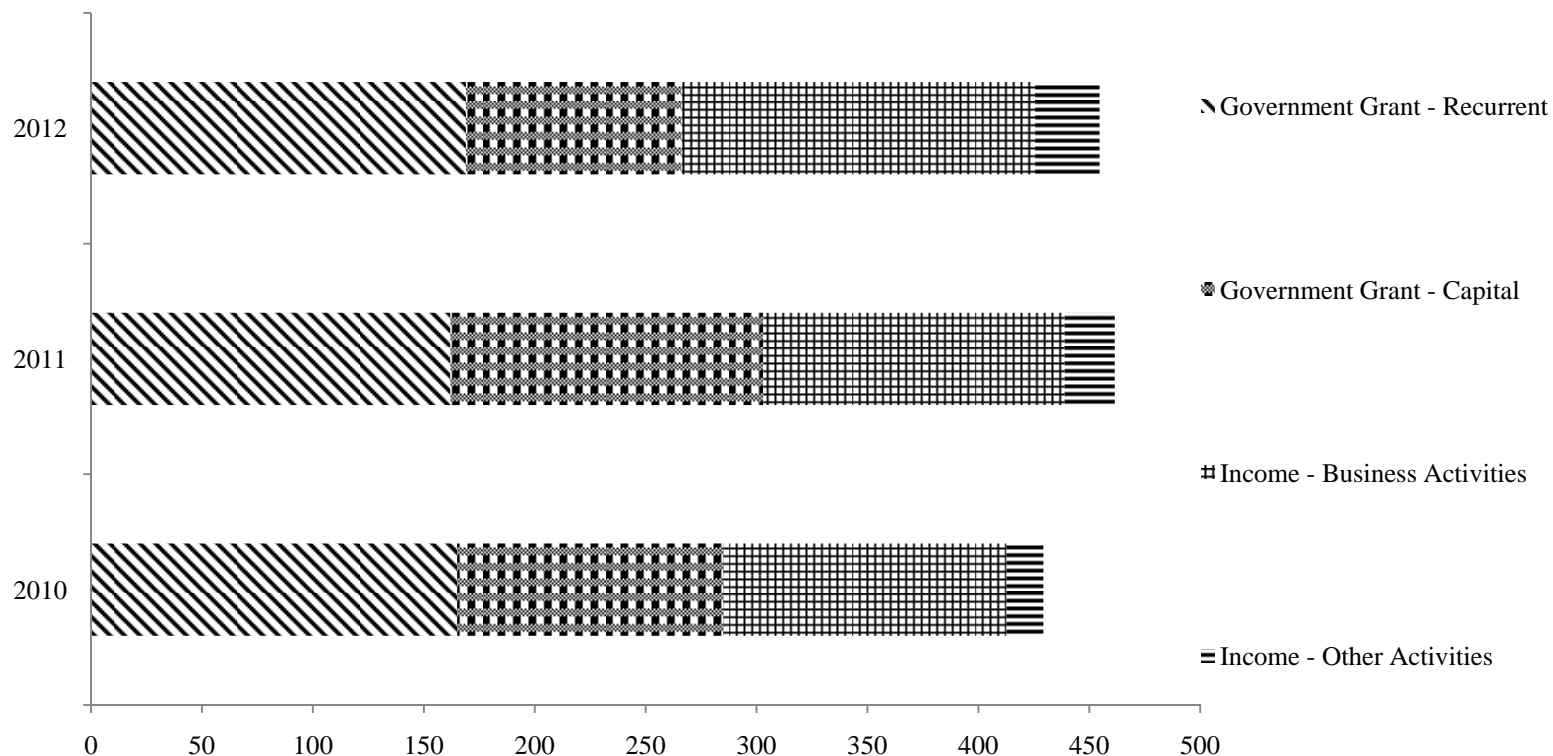
- COMSAT – 2nd ITRG meeting climate change, Beijing, China, 21st July 2013
(Workshop on climate change and Environmental Protection 14-23 July 2014)
- COMSAT – 3rd ITRGs meeting climate change, COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan, 22 January 2014 (Workshop on Asian Monsoon and climate change, 20-22 Jan 2014, Hotel Serena, Islamabad)

Institute represented by : Principal Research Engineer Keerthi Fonseka



Operating Revenue (Rs.'000)

	2011	2012	2013
Government Grant - Recurrent	162	169	176.5
Government Grant - Capital	141	97.19	146.7
Income - Business Activities	135.8	159.34	207.53
Income - Other Activities	22.7	29.11	39.29



Proposed New Organization Structure

CENTRAL INSTITUTE OF SCIENTIFIC AND INDUTSTRIAL RESEARCH

CISIR

COLOMBO FACILITY

School of
Science &
Technology

Center of
Excellence
for
Metrology

Science &
Technology
Business
Centre

Center of
Excellence
for
Chemical
Analysis &
Safety

Center of
Excellence for
Environmental
management &
safety

Center of
Excellence
for Material
Science &
Technology

Central
Management
Unit

QAD
HRD
FIN
SUPPLIES
TRANSPORT
MAINTENANCE
STORES

MALABE FACILITY

Center of
Excellence
for Food
Research, Te
chnology &
Safety

Center of
Excellence for
Natural
Products
research &
Traditional
Knowledge

Center of
Excellence for
Bio-medical
Research
, Molecular
biology &
Biotechnology

KASPER Technology







Bacillus thuringiensis israelensis



- Indigenous strain of bacterium, *Bacillus thuringiensis israelensis*.
- Proven technology and a viable option for mosquito control in Sri Lanka especially dengue control, filariasis, malaria, JE.
- Green technology – environmentally benign, a viable alternative for synthetics.
- Successfully commercialized to use in Sri Lanka.
- Novel venture in biotechnology-based industries in Sri Lanka
- Value addition to local R&D outputs by local Scientists



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Electro Technology Unit

Audio signal based street lamp controller



Automatic weather station



Timer based street lamp controller



THANK YOU

Management Team



Dr. G.A.S. Premakumara

BSc, PhD, Dip(Psy), MChemC, MBiol, CChem, CBiol, FIBiol
Director/CEO

Years of Service: 16 Yrs

Publications & Communications: 170 Patents: 2

Fellowships : UNESCO-ICSU Fellowship
ICCBS Visiting Research Fellowship
STA – Post doctoral Fellowship
JSPS – Invitation Fellowship

Awards: Presidential Award
National S&T award
ICChemC Silver Medal
Talented Scientist Award

Other: Research Projects – 22
PhD students – 7
MSc students - 8

