Industrial Technology Institute
(COMSAT Centre of Excellence)
Ministry of Technology & Research
SRI LANKA
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.
OBJECTIONS & 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.
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
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
# Human Resource

<table>
<thead>
<tr>
<th>Category</th>
<th>Distribution</th>
<th></th>
<th>Educational Background</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>**</td>
<td>PhD</td>
<td>MSc</td>
</tr>
<tr>
<td>Management</td>
<td>19</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Research Sciences</td>
<td>69</td>
<td>8</td>
<td>23</td>
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<tr>
<td>Research Engineers</td>
<td>16</td>
<td>--</td>
<td>3</td>
</tr>
<tr>
<td>Technical</td>
<td>98</td>
<td>--</td>
<td>4</td>
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<tr>
<td>Skilled</td>
<td>31</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Support</td>
<td>94</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>327</td>
<td>14</td>
<td>37</td>
</tr>
</tbody>
</table>

*Industrial technology institute*
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
Engineering Services Section
Herbal Technology Section

Industrial Technology Institute
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

Industrial Technology Institute
Gas Chromatography

Shimadzu GC-2010
Supelco wax capillary column
FID

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

Shimadzu GC-14B
Poropack/Carbowax pack column
FID

Industrial Technology Institute
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

Industrial Technology Institute
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
In Association with

Avant-Garde Urban Design Partnership

No. 19, Clifford Avenue, Colombo 03
Tel: 0115 - 660715, 0115 - 673407
Fax: 0112 - 564675
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
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
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 oleifora* 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)
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.
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.
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.
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 ITRG 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)

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tbody>
<tr>
<td>Government Grant - Recurrent</td>
<td>0</td>
<td>162</td>
<td>169</td>
<td>176.5</td>
</tr>
<tr>
<td>Government Grant - Capital</td>
<td>0</td>
<td>141</td>
<td>97.19</td>
<td>146.7</td>
</tr>
<tr>
<td>Income - Business Activities</td>
<td>22.7</td>
<td>135.8</td>
<td>159.34</td>
<td>207.53</td>
</tr>
<tr>
<td>Income - Other Activities</td>
<td>0</td>
<td>22.7</td>
<td>29.11</td>
<td>39.29</td>
</tr>
</tbody>
</table>

![Bar Chart]

**Source:**
- Revenue sources include Government Grants and Income from various activities.
- The chart illustrates the revenue distribution across different categories over the years 2010, 2011, and 2012.
Proposed New Organization Structure

CENTRAL INSTITUTE OF SCIENTIFIC AND INDUSTRIAL RESEARCH

CISIR

COLOMBO FACILITY

School of Science & Technology
Center of Excellence for Metrology
Center of Excellence for Environmental management & safety
Center of Excellence for Material Science & Technology

Science & Technology Business Centre

MALABE FACILITY

Central Management Unit
QAD HRD FIN SUPPLIES TRANSPORT MAINTENANCE STORES

Center of Excellence for Food Research, Technology & Safety
Center of Excellence for Natural Products research & Traditional Knowledge
Center of Excellence for Bio-medical Research, Molecular biology & Biotechnology
KASPER Technology

KASPER technology for Kitul tapping

New Treatment for Kitul Tapping

KASPER Kitul Products

Kitul Juice

750ml Bottle: Rs. 500
500ml Bottle: Rs. 250
250ml Jar: Rs. 190

Kitul Flower Honey

375g: Rs. 200

**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, filarisis, malaria, JE.
- Green technology – environmentally benign, a viable alternative for synthetics.
- Successfully commercialized to use in Sri Lanka.
- Value addition to local R&D out puts by local Scientists.
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), MIChemC, MIBiol, 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
- IChemC Silver Medal
- Talented Scientist Award

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