



Ministry of Science Technology & Research

Industrial Technology Institute Colombo Sri Lanka



Driving the Nation through Technology
Industrial Technology Institute

5/18/201
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Introduction

- ❖ Center of Excellence of COMSATS ●
- ❖ Government owned multidisciplinary R&D institute with a 63 years old history situated in heart of Colombo ●
- ❖ Modern Research and Development Complex in suburb of Colombo, Malabe ●
- ❖ Two major divisions; R & D and Technical Services ●
- ❖ Total staff of 303; 71 are Research Scientists/Engineers; 18 PhD holders ●
- ❖ Laboratories are equipped with state-of-the art instruments ●

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Introduction

Industrial Technology Institute, formerly known as Ceylon Institute of Scientific & Industrial Research (CISIR) is a multidisciplinary R & D institute operating under Ministry of Science, Technology & Research.

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.

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

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THE VISION, MISSION AND OBJECTIVES

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

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OBJECTIVES & FUNCTIONS

The objects and functions of the ITI as specified in the Science & Technology Act No. 11 of 1994 that came into effect on 01 April 1998 are as follows.

The Technology Institute shall be demand-driven.

The object of the Technology Institute shall be to elevate the level of Technology in Sri Lanka to the level required for rapid industrialization

Functions shall be: - to support industry by-

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OBJECTIVES & FUNCTIONS

- 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;*

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OBJECTIVES & FUNCTIONS

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

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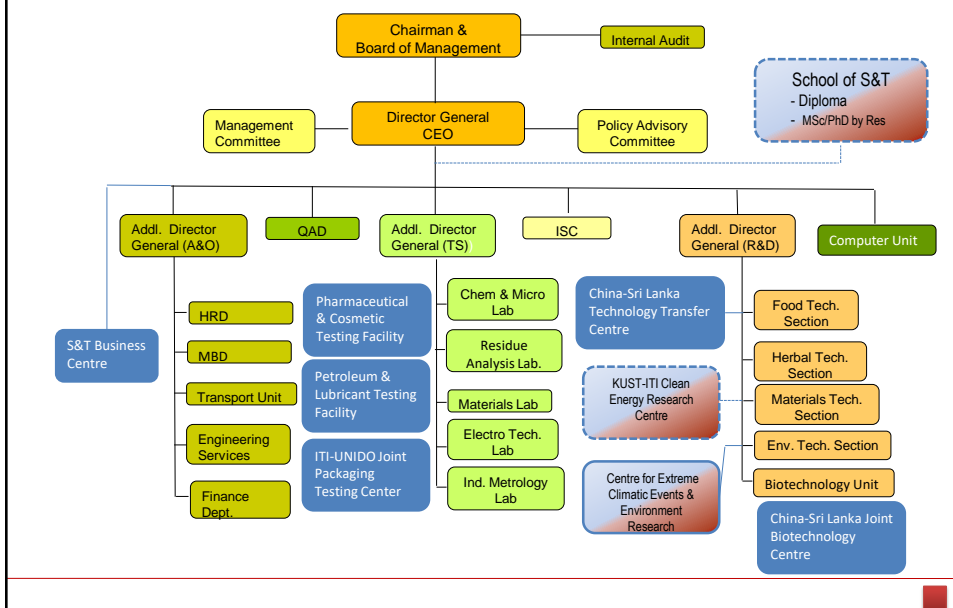
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Organizational structure



Human Resources

Category		Number	Educational Qualifications					
			PhD	Masters	PG Dip	BSc	Diploma	Other
Management		15	7	4	3			1
Research	Scientists	58	11	17		29		
	Engineers	09	01	2		7		
Technical		82		2		27	8	
Administrative & Clerical		60						
Craftsmen		18						
Others		61						
Total		303						



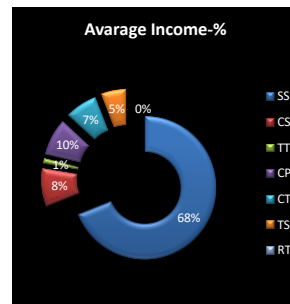
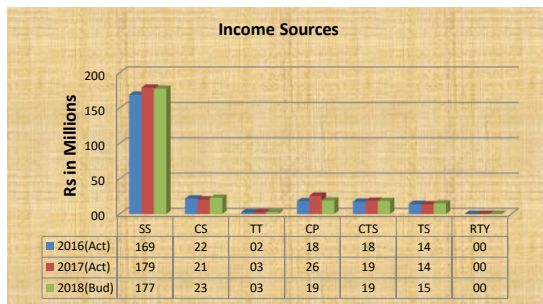
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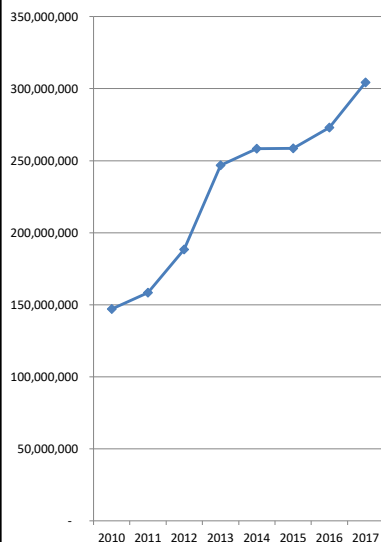
Income Progress - 2017

Income Sources	Codes	2016(Actual) Rs'000	%	2017(Actual) Rs'000	%	2018(Budget) Rs'000	%
Standard Services	SS	168,761	69%	178,795	68%	177,211	69%
Consultancy Services	CS	22,016	9%	20,712	8%	23,117	9%
Technology Transfer	TT	2,439	1%	2,766	1%	2,561	1%
Contract Projects	CP	18,272	7%	26,083	10%	19,185	7%
Customized Services	CTS	17,625	7%	18,827	7%	18,506	7%
Training Services	TS	14,389	6%	13,803	5%	15,108	6%
Royalty	RTY	237	0%	330	0%	248	0%
Sub Total		243,738	100%	261,316	100%	255,936	100%
Government Grants		233,000		240,000		280,000	
Total		476,738		501,316		535,936	



Income Generated – 2010 - 2017

Income Generation - Industrial Technology Institute



Year	Income Generated	Year	Income from Research Grants(Foreign)- (Rs)
2010	147,050,523	2010	
2011	158,333,949	2011	
2012	188,457,289	2012	
2013	246,832,455	2013	26,956,377
2014	258,249,079	2014	19,238,148
2015	258,581,780	2015	21,775,883
2016	273,017,759	2016	16,281,252
2017	304,228,985	2017	11,270,030

Year	2010	2011	2012	2013	2014	2015	2016	2017
Income	147	158	188	247	258	258	273	305
Expenditure	253	261	314	381	393	450	448	547
	0.58	0.60	0.59	0.64	0.67	0.57	0.60	0.55
Recurrent Grant	165	162	169	177	190	230	233	240
Capital Grant	120	141	97	147	237	299	389	17

World Ranking	Continental Ranking	Country Rank	Presence	Impact	Openness	Excellence
9985	3764	16	10500	16711	4026	5208

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Infrastructure Developments

Two Research sections & Administrative sections moved to Modern Research & Development Complex and started operations from January 2017



Infrastructure Development

❖ Construction of State-of-the art Petroleum and Pharmaceutical Testing Laboratories were initiated



❖ Preliminary studies to establish a Centre for Testing Packaging Materials

❖ Establishment of the Social Innovation Laboratory



Infrastructure Development



China – South Asia Technology Transfer Centre – Agreement signed



PTB-Germany recommends ITI as the Center for Chemical Metrology in Sri Lanka



Opening of Social Innovative Lab

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CENTRE FOR TECHNICAL EXCELLENCE IN CERAMICS



Excellence in Service to the Sri Lankan Ceramic Industry



Centre for Technical Excellence in Ceramics

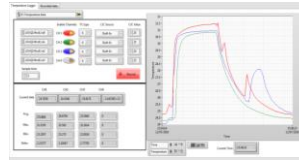
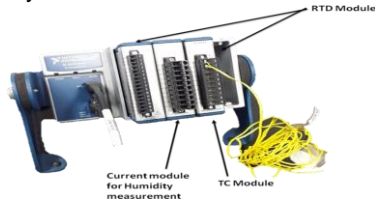
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Achievements

Major Technology Development

- ❖ Development of a humidity and temperature data acquisition and monitoring system



- ❖ Development of noise model for the proposed wind power plant
- ❖ Development of a molecular based assay to Differentiation of Tuna species
- ❖ Conversion of Sri Lankan natural quartz to solar grade silicon for applications in electronic industries



Major Technology Transfers

- ❖ Bio-wax and Tree Fresh Formulations (TFF) – Hayley's Agriculture (Pvt) Ltd



- ❖ Postharvest information dissemination via Dialog 'Govimithuru' mobile application
- ❖ Grama Shakthi People's Movement - designed to alleviate poverty



3rd Biennial Research Symposium





Publications, Communications & Patents

- ❖ Publications – 38 scientific publications in referred journals
- ❖ Communications - over 175 International and Local Communications
- ❖ Patents

	Patent Title
16653	Processing technology of banana fibers as an absorbent material suitable for using in personal care products
17575	Processing technology of paper/boards from banana fiber for sorption and slow release applications
18157	Preparation of graphene oxide and few layer graphene as a high value addition to local graphite
18248	Purification of natural graphite for preparation of high quality graphite oxide as a value addition.
18301	Preparation of highly oxide and graphene oxide suitable for synthesis of high quality graphene and composites
19158	Red-clay water filter body composition for removal of arsenic, cadmium and fluoride for water



Capacity Building

Postgraduate Studies

Programme	Completed	On-going
PhD	01	12
MPhil	-	04
MSc	03	05

❖ Training

	No. of Programs	No. Trained
Foreign	20	25
Local	18	23

New Research Initiatives

- ❖ Low cost, eco friendly domestic system to compost bio-degradable food waste.
- ❖ Improvement of thermal conductivity of rubber using graphite based nanocomposite as a value addition
- ❖ Investigation of Calcium Magnesium and heavy metal uptake efficiency of *Terminalia arjuna* (Kumbuk Tree) as a phyto-remediation species for water quality improvement of CKDu affected areas
- ❖ Development of National Mercury Release Inventory for the Industrial Sector



International Collaborations

❖ A collaborative research with Korean Food Research Institute on Biological activity evaluation system assistant project for nutraceutical applications of Sri Lankan native plants

❖ Indo – Sri Lanka research programme on Studies in surface sterilization of spices using non-thermal processes.



International Collaborations

International Centre for Chemical & Biological Sciences (ICCBS) - Pakistan





International Collaborations

Collaborations with other COMSATS Centers of Excellence

Establishment of a Climate Change Research Centre at ITI in collaboration with ICCES, China

As part of the MoU between ITI and International Center for Climate and Environment Sciences (ICCES) - *One of the ITI staff members is doing his PhD at ICCES, China.*

- *State Minister for Science, Technology & Research of Sri Lanka*

Hon.Laxman Seneviratne visited ICCES on a facts finding mission in April 2017



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Center for Extreme Climatic Events & Environmental Research [CECEER]



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Training Programmes conducted by the Institute

Total Solution for Trace Level Analysis: using AAS, GC, GC-MS, LC, LC-MS/MS and ICP-MS (15th – 17th February 2017)

Certificate course on Herbal Drugs & Cosmetic Value Addition Techniques (February – April 2017 – 10 Saturdays)

Training program on Dehydration of fruits, vegetables, culinary herbs and spices (29th March 2017)

Hands-on Training on Advanced Scientific Instruments for Material Characterization (18th & 19th May 2017)

Workshop on Troubleshooting in Cottage based Herbal Drugs & Cosmetics Industries (18th May 2017)

Exhibition and sale to empower cottage level entrepreneurs (18th May 2017)

Awareness program for the stakeholders on Residue Analysis (30th May 2017)

Awareness program on “Disposing Industrial and commercial garbage” (26th September 2017)

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Training Programmes conducted by the Institute

Practical training on Biotechnology Techniques for Undergraduates



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Future Plans

Participation in COMSATS programmes

S & T cooperation offers to other network members and COMSATS member countries

Joint research work

- Herbal Technology : Value addition to Natural Products
- Food Technology : Health food, Nutraceuticals, Natural Food additives, Post harvest technologies
- Material Technology : Value addition to minerals ; Natural Fibers

Training facilities : Metrology; ISO 17025; Herbal cosmetics
Essential oil extraction/analysis

Technology transfers: A range of Herbal, Food & Material based technologies for MSMEs

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World Ranking of Best Sri Lankan Universities – 2017 List by Webometrics

ranking	World Rank	University	Det.	Presence Rank*	Impact Rank*	Openness Rank*	Excellence Rank*
1	2113	University of Peradeniya		799	6136	1459	1789
2	2259	University of Colombo		710	4788	1782	2314
3	2808	University of Kelaniya		768	6923	1624	2839
4	2861	University of Moratuwa		959	4305	2530	3394
5	2874	University of Ruhuna		3858	8702	940	2625
6	3349	University of Sri Jayewardenepura		481	7285	2255	3602
7	4506	University of Jaffna		1793	11066	2980	4135
8	4508	Rajarata University		2768	13617	3863	3510
9	4855	General Sir John Kotelawala Defence University		2620	3738	4895	5722
10	5304	Eastern University of Sri Lanka		1707	12873	4575	4251
11	5414	Open University of Sri Lanka		973	9655	2903	5208
12	5993	Sabaragamuwa University		9013	13294	4997	4369
13	7328	Wayamba University of Sri Lanka		2646	10236	4404	5722
14	7738	Sri Lanka Institute of Information Technology		5633	10935	4133	5722
15	9787	South Eastern University of Sri Lanka		1782	13379	5427	5722
16	9985	Industrial Technology Institute		10500	16711	4026	5208
17	11241	Uva Wellasa University		5889	16046	4156	5722
18	11894	ANC Education		22299	8910	9491	5722
19	13086	University of the Visual & Performing Arts		5125	13070	9241	5722
20	14324	Postgraduate Institute of Agriculture		6850	16330	8368	5722
21	14567	ESOFT Metro Campus		6575	13991	9491	5722
22	14919	South Asian Institute of Technology and Medicine		7834	16751	8532	5722
23	15143	Malabe Asia Pacific Institute of Information Technology Sri Lanka		6275	16842	8745	5722
24	15592	National Institute of Education Sri Lanka		19305	13954	9491	5722