Research and Development Institutes

1. C-DAC

Centre for Development of Advanced Computing (C-DAC) is the premier R&D organization of the Ministry of Electronics and Information Technology (MeitY) for carrying out R&D in IT, Electronics and associated areas. Established in 1988 and Head Quartered at Pune, CDAC has 12 centres across the country

The centre at Thiruvananthapuram has been working in application-oriented research, design and development primarily in Professional Electronics.

TECHNOLOGIES

Over the years, Centre has acquired competency, expertise and extensive experience in the areas of Wireless Communications, Control & Instrumentation, Intelligent Transportation, Power Electronics, ASIC Design, Cyber security, Health Technologies and Strategic Electronics.

The Centre has a VLSI/ASIC design center, PCB-CAD facility, DSP lab, Industrial design facility and Pilot production facility, Cyber forensics and security labs, Security Operations Centre to name a few.

A number of technologies developed have been transferred to Technology partners for large-scale production. These include submarine echo sounder, hearing aids, Intelligent Transportation solutions, Underwater drones, etc.

CDAC is primarily responsible for R&D and field trials of all products and further collaborate with Industry/MSME/Start Up for ToT/reseller arrangements. CDAC

also does collaborative Developments with Industry/Academia/ Strat Up through an Intent of Association call which is available on website www.cdac.in 24X7.

2. CIFT

The ICAR - Central Institute of Fisheries Technology (ICAR-CIFT) set up in 1957 is the only national center in the country where research in all disciplines relating to fishing and fish processing is undertaken. The institute started functioning at Cochin in 1957. Research centers function at Veraval (Gujarat), Visakhapatnam (Andhra Pradesh) and Mumbai (Maharashtra).

The institute functions with the following mandate:

- Basic and strategic research in fishing and processing.
- Design and development of energy efficient fishing systems for responsible fishing and sustainable management
- Development of implements and machinery for fishing and fish processing.
- Human resource Development through training, education and extension.

RESEARCH AND DEVELOPMENT

The research work at CIFT is carried by the following Research Divisions

- Fishing Technology
- Fish Processing
- Biochemistry & Nutrition
- Quality Assurance & Management
- Microbiology, Fermentation and Biotechnology
- Engineering

- Extension, Information & Statistics

CIFT is proud to be recognized as Fisheries Incubation Centre under Pradhan Mantri Matsya Sampada Yojana which contribute to the growth and development of fisheries sector. CIFT also launched India's first ever drone based study on marine mammals.

3. CIPET

CIPET has established a centre at Kochi since 2012 - Centre for Biopolymer Science & Technology (CBPST) - with the fund support of Govt. of India as well as Govt. of Kerala. CBPST is renamed as CIPET : IPT - Kochi from March 2018.

Kochi is a model centre for Academic Programs in Biopolymer Science, Polymer Science & Technology and will also focus on promoting Bio plastics and natural fibre based green composites. CIPET is offering PG courses - M.Sc. in Biopolymer Science and M.Sc. in Polymer Science in affiliation with CUSAT. As per the demand for skilled and qualified manpower in plastic industries CIPET : IPT - Kochi has introduced Diploma programs approved by AICTE.

Kochi is equipped with state of the art infrastructure to provide technical services to plastics & allied industries and to provide quality education to the Students undergoing training in the Institute creating technically qualified manpower to meet the requirement of Industries at various levels.

RESEARCH AND DEVELOPMENT

CIPET : IPT - Kochi is a recognized research centre of Cochin University of Science and Technology (CUSAT). The major research areas include:

- Biopolymers and Composites
- Chemical Modification of Polymers

- Natural Fiber Reinforced Polymer Composites
- Polymer Blends, Alloys and Composites
- Bio-nano-composites

The Testing Lab is accredited as per ISO/IEC 17025:2005 by NABL

Recognition by Bureau of Indian Standards (BIS) for Testing and evaluation of plastics materials and products

ISO 9001 : 2015 QMS for its Technical and Training services

4. CTCRI

The ICAR- Central Tuber Crops Research Institute (ICAR-CTCRI) was established in July 1963 with its headquarters (HQ) at Sreekariyam, Thiruvananthapuram, Kerala. It has one Regional Station (RS) at Bhubaneswar, Odisha. The ICAR-CTCRI is conducting basic, strategic and applied research on various edible tropical tuber crops. The focus of ICAR-CTCRI is farmers' welfare through co-ordinated research, development and extension activities through improved varieties, cost-effective agro techniques, eco-friendly pest and disease management, value addition, outreach programs and policy recommendations.

The ICAR-Central Tuber Crops Research Institute (ICAR-CTCRI) operates through five specialized divisions, each dedicated to advancing various aspects of tuber crop research and development.

The Crop Improvement Division focuses on genetic enhancement, breeding high-yielding, pest-resistant, and climate-resilient tuber crop varieties. **The Crop Production Division** emphasizes optimizing agronomic practices, soil and water management, and developing sustainable farming systems. **The Crop Protection Division** is engaged in devising eco-friendly and integrated strategies to manage pests and diseases affecting tuber crops. **The Social Sciences and Extension Division** works on technology transfer, farmer capacity building, and socio-economic impact assessment of tuber crop innovations. Lastly, **the Crop Utilization Division** specializes in post-harvest technology, value addition, and developing industrial applications for tuber crops, including starch-based products and bioenergy. Together, these divisions ensure a holistic approach to improving tuber crop productivity, sustainability, and utility.

TECHNOLOGIES

- Biofortified sweet potatoes, the orange fleshed (Bhu Sona) and purple fleshed (Bhu Krishna) varieties, are emerging as nutritional powerhouses with the potential to significantly improve public health.
- The elite purple taro germplasm offers a multifaceted solution to the issue of nutritional gaps in staple diets by introducing a significant innovation in the form of anthocyanin-rich corms.
- Purple Flesh Elite Greater Yam Variety DA340:- Apart from being a good source of carbohydrates, this greater yam is considered as rich sources of essential micronutrients and other phytochemicals.
- Micro-nutrient Foliar Formulations for Tropical Tuber Crops: - Six micronutrient formulations were developed through soil inventorisation, analysis of soil and plant samples, and site-specific nutrient management (SSNM) experiments and modelling studies.
- A semi-synthetic superabsorbent polymer based on tapioca starch
- Developed three bio formulations from cassava crop residues - Nanma, Menma & Shreya
- Sweet Potato Nutri bars, Gluten-Free Sweet Potato Cookies, Sweet potato flour-supplemented Muffins, Functional Pasta from Cassava/ Sweet Potato, Nutri-Meal Mix, Vacuum fried Chips, Quick Cooking Dehydrated Tubers

- Wax coating technology for Cassava Tubers:- This technology is to improve the marketability and shelf-life of fresh cassava roots
- Power operated size based Chinese potato grader, Multipurpose Mobile Starch Extractor, Cassava Chipping Machine
- E-Crop and Bio capsules

5. IISR

The Indian Institute of Spices Research (IISR), Kozhikode (Calicut) a constituent body of Indian Council of Agricultural Research (ICAR) is a major Institute devoted to research on spices. In 1976, it started as a Regional Station of the Central Plantation Crops Research Institute (CPCRI), Kasaragod engaged in research on spices.

A National Research Centre for Spices was established in 1986 with its headquarters at Kozhikode, Kerala by merging the erstwhile Regional Station of CPCRI at Kozhikode and Cardamom Research Centre at Appangala, Karnataka. Realizing the importance of Spices Research in India this Research Centre was upgraded to Indian Institute of Spices Research on 1st July, 1995.

The laboratories and administrative offices of the institute are located at Chelavoor, 11 km from Kozhikode, Kozhikode District, Kerala on the Kozhikode-Wayanad road (NH 766) in an area of 14.3 ha.

RESEARCH

IISR research is guided by science with a human touch. By giving a human touch to agri-science, IISR dedicates its work to the farmers and spice industry of the nation. The research programs of the institute (both institute and externally funded) are carried out under various projects, which are time bound, and with specific objectives.

- Collection, conservation, evaluation and cataloging of germplasm.
- Development of varieties of high yield, quality and resistance to biotic and abiotic stresses through conventional and biotechnological approaches.
- Standardizing propagation methods to ensure large scale production and distribution of high yielding genotypes
- Development of agro techniques for increasing production and productivity.
- Integrated pest and disease management.
- Post-harvest technology
- Socio-economic aspects of cultivation, marketing and information dissemination in spices.
- Investigation on nutraceuticals and pharmacokinetics aspects of spices.

Recognizing the need to support aspiring entrepreneurs in the spice sector, ICAR-IISR established the **Agribusiness Incubator (ABI) in 2013**. The primary objective of the ABI is to assist startups and entrepreneurs in transforming innovative ideas into successful business ventures. This incubation center serves as a one-stop solution for entrepreneurs, offering support in research and development, technology transfer, business planning, and marketing.

6. NCRMI

The National Coir Research and Management Institute (NCRMI) spearheading diverse R&D projects in coir holds a distinguished position in nurturing this traditional industry of Kerala. Established in 1994 in Thiruvananthapuram as the C-DOCT, it embarked on a mission to fulfil the diverse needs of the sector. Registered under Travancore-Cochin Literary Scientific and Charitable Societies Act 1956, the institute initially focused on Kerala coir development.

Recognizing the immense potential of coir, the Kerala government elevated C-DOCT to the national level in 2003, christening it the National Coir Research & Management Institute (NCRMI). This transformation envisioned NCRMI as a national hub for comprehensive research on coconut fibre and its products. With this evolution, the institute aspired to become a centre of excellence, encompassing research, development, consultancy, and knowledge dissemination, all dedicated to the coir sector.

TECHNOLOGY TRANSFER

Technology transfer of various R&D Products developed by NCRMI has been fixed as per the rates mentioned below.

Sl.No.	Name of Product	MSME's/Private Organization/Individual (Transfer cost per firm/Individual)	Govt. PSU's/Coir Co-Operatives
1	Peatkol Dots	Rs. 25,000	Free of cost
2	E-coir Bag	Rs.10,000	Free of cost
3	Pith Activator	Rs.10,000	Free of cost
4	Trichopith	Rs.10,000	Free of cost
5	Digital Coir Runnage Meter	Rs.25000	Free of cost
6	CocoAura	Rs.25,000	Free of cost
7	Coco Nurture	Rs.10,000	Free of cost

DIVISIONS

Geotechnical Division

Micro Biology & Chemical Division

& Development Division

Consultancy Division

7. NIFT

Kannur is a place of looms and lore and National Institute of Fashion Technology Kannur known as NIFT Kannur is one of the 18 campuses of NIFT, an institution for Fashion, Design, Technology and Management. It is located in the Dharmashala locality (Taliparamba Taluk), outside the city of Kannur

The NIFT Centre at Kannur is one of the newer additions to the network of existing government-run fashion schools across India. It started functioning from June 2008, from a transit campus situated at Dharmashala, and moved to its permanent campus at Dharmashala in 2011.

DEPARTMENTS

Fashion Design

Knitwear design

Textile Design

Fashion Technology

Fashion Communication

Master of Fashion Management

Master of Design

MAJOR PROJECTS

India Size Project

USTTAD Project (Upgrading the Skills and Training in Traditional Arts/Crafts for development

Skill Development Training Program for Kudumbasree

Craft Design Project

8. NIIST

National Institute for Interdisciplinary Science & Technology (NIIST) located at Industrial Estate, Pappanamcode, Thiruvananthapuram, Kerala is one of the major research laboratories of Council of Scientific Industrial Research (CSIR), which undertakes R&D projects of both basic and applied nature in a number of areas of fundamental importance to the country. CSIR-NIIST has been recognized globally for its excellent contributions in areas such as spice & oilseeds processing, building materials, premium quality aluminium castings, processing and value addition of clays and minerals, organic photonic materials and environmental monitoring and remediation.

R and D

The Laboratory has five major divisions namely Agro-processing and Technology, Microbial Processes and Technology, Chemical Sciences and Technology, Material Sciences & Technology, Environmental Technology. NIIST takes up Contract Projects (Sponsored, Collaborative/Consultancy) as well as testing and analysis from industries. NIIST has several national and International linkages bonded through R&D, Academia and industry chains. The Laboratory has many high impact Publications, Potential Patents and illustrious Technology Transfers to its credit. NIIST is recognized as a centre of excellence in areas such as Processing of Spices & Oil Seeds, Building Materials, Premium Quality Aluminium Castings, Processing of Clays & Minerals for Value Addition, Photonic Materials, Biomaterials & Biofuel

and Environment Science & Technology. It also plays a significant role in the Human Resource Development arena by training Post Graduate students and generating PhD Personnel. NIIST has produced around 500 PhD graduates. The Institute has been consistently ranked as one of the top performing Institutes in terms of quality and quantity of its research publications. Over the years, the Institute has evolved as one of the top ranking CSIR laboratories with high quality publications, a good patent portfolio and major technology transfers, while contributing significantly towards human resource development. NIIST has several national and international linkages bonded through R&D, academia and industry chains. The Laboratory has potential Patents, prestigious awards and illustrious Technology Transfers to its credit.

9. RRII

The Rubber Research Institute of India (RRII) was established in 1955. The Institute has attained a prestigious position in the international rubber scenario through its research contributions. RRII is a member of the International Rubber Research and Development Board (IRRDB) and actively participates in many international research programs. RRII has played a significant role in India achieving high productivity.

The Rubber Board, is a statutory body constituted by the Government of India for the overall development of the rubber industry in the country. The Rubber Research Institute of India (RRII) is the Research Department of the Board with its headquarters at Kottayam, Kerala.

TECHNICAL CONSULTANCY

Technical Consultancy (TC) Division was set up at RRII in 1986, to cater for the rubber-based industrial growth of our country. The activities of the Division are designed in such a way that the rubber-based units of our country amounting to over 5000 in number will be able to tap the benefits of applied research and developments being conducted in its NABL-accredited laboratory. The major activities of the TC Division are testing/certification of rubber products for more than 170 parameters as per relevant standards i.e., ISO, BIS, ASTM, EN, BS, ASRTU etc. related to different rubber products in addition to R&D activities.

The division provides consultancy services to small and medium enterprises, individual entrepreneurs, and central and state Government departments and agencies. The services

provided are R&D activities on industrially important rubber-based projects. The Division caters to the needs of new entrepreneurs as well as existing rubber goods manufacturers for the export of rubber products by offering the services of the Advanced Analysis Laboratory for Rubber Products (REACH Lab). A full-fledged Rubber Product Incubation Centre (RPIC) is also functioning in this Division. The Division representing the Rubber Board in the Bureau of Indian Standards (BIS) and ISO for policy-making in various rubber products.

1. Advisory service: NABL Accreditation and Rubber product testing and development

2. REACH Lab: Rubber Board commissioned the Advanced Analysis Laboratory for Rubber products at the Rubber Research Institute of India. The new facility will enable the Exporters to conduct independent third-party testing of rubber products for REACH compliance and for Manufacturers in the MSME sector to design REACH-compliant product formulations.

3.Rubber Products Incubation Centre (RPIC): The role of RPIC is to promote entrepreneurship and innovative ideas among prospective entrepreneurs in the rubber products manufacturing industry. The incubation centre has all the facilities required for transforming innovative ideas into reality.

10. SCTIMST

Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Trivandrum is an Institution of National Importance under the Department of Science and Technology, Govt. of India. The joint culture of medicine and technology pioneered by its founders more than three decades ago, has come of age and gained unprecedented acceptance in India. The institute has the status of a university and offers excellent research and training facilities.

It has three wings: a tertiary referral super specialty hospital, a biomedical technology wing and the Achutha Menon Centre for Health Science Studies.

The Institute focuses on high quality, advanced treatment of cardiac and neurological disorders, indigenous development of technologies for biomedical devices and materials and public health training and research. The institute offers advanced treatment using modern technologies in several specialized areas.

The Institute is a Technical Research Centre for Biomedical devices and has a medical devices incubator (TIMed). The institute also engages in collaborative product development with the medical device industry.

TECHNOLOGY TRANSFER

SCTIMST – BMT Wing is actively engaged in applied and translational research in areas of biomedical devices, biologics and biomaterials since late 1970s. The

technologies developed indigenously by SCTIMST have been transferred to several industries, which have benefitted both the industry and society at large. Our record is marked with development of innovative and popular products such as the artificial heart valve (TTK Healthcare Ltd), blood bags (Peninsula polymers, now Terumo Penpol Ltd, HLL Lifecare Ltd, hydrocephalus shunt (HLL Lifecare Ltd), membrane oxygenator& cardiotomy reservoirs (SIDD Lifesciences Ltd), bio ceramic composites for dental and orthopedic applications (Basic Healthcare Ltd, IFGL Refractories Ltd,), dental composites (Anabond Stedmann Pharma Ltd), Intrauterine Device (HLL Lifecare Ltd), vein viewer (Agappe Diagnostics Ltd), Chitra Emergency Breathing Assist Device (Wipro enterprises pvt ltd) Multiplex RT PCR kit which targets two SARS COV2 genes RdRp and ORFb- nsp14 and the human RNAse gene as the internal control (Huwel lifesciences pvt ltd), Chitra RNA isolation kit (Agappe diagnostics ltd), Bone cement (Onyx medicals pvt ltd) etc to name a few.

Also post Technology Transfer activities are ongoing for many more products like ASD occlusion device, flow diverter stent, Radiopaque embolization device, LVAD, cholecyst derived scaffold for wound dressing applications, Diagnostic kit with antibiogram for Urinary Tract Infection (UTI), Tuberculosis screening device, PT/INR monitoring device, lint free absorbent wound dressing etc.