

- * Canning line
- * Liquid nitrogen freezer
- * Air-blast freezer
- * Rigid & semi-rigid containers packing system
- * Inert gas packaging system
- * Retort pouch packaging system
- * Aseptic packaging system

VII FOOD BIOTECHNOLOGY SERVICES

MAJOR EQUIPMENT :

- o Incubator facilities
- o Cell counter
- o Microbiological microscopes
- o Biological freezing facilities
- o High Performance Liquid Chromatograph (HPLC)
- o Gas Chromatograph (GC)
- o Gas Chromatograph - Mass Spectrometer System (GC/MS)
- o Amino acid analyser
- o Gas analyser
- o CO₂ extractor
- o Distillation sets
- o Enzyme electrode analyser
- o 2 l fermenters
- o 10 l fermenters

Pilot plant facilities:

- o 50l fermenter
- o 3000 l fermenter
- o Ultrafiltration units
- o Spray dryer
- o Filterpress
- o Freeze dryer
- o Downstream separation equipment

VIII ELECTROTECHNOLOGY SERVICES

MAJOR EQUIPMENT :

- o High current test station - 3-phase, 3,000 amperes, 50Hz at 400V nominal voltage (380V, 400V, 415V, 440V, 460V, tap changers)
- o Three-phase current injection set-up to 3,000 amperes continuous rating
- o Variable power factor electrical loads - up to 3,000 amperes, 3-phase, 400V
- o Single phase current injection set-up to 30,000 amperes
- o High voltage testers - up to 100kV, 100mA
- o Equipment for checking International Protection (IP) of electrical enclosures
- o Motor test systems - up to 25HP, 50Hz
- o Tensile tester with pulsed infra-red non-contracting extensometer - up to 5kN
- o Digital storage oscilloscope - 100MHz, 4 channels
- o Data acquisition systems - temperature and voltages
- o EMI test system - up to 30MHz (conductive)
- o Ovens up to 300°C
- o Four walk-in chambers (20° - 55° , 20% - 95% RH, 3W x 4L x 12.8H)
- o A full range of environmental chambers
- o Capacitance bridge - up to 70 amps of charging current
- o Three-phase power analyser - up to 100 amperes
- o Transient analyser
- o Spectrum analyser

IX ELECTRONICS TEST CENTRE

MAJOR EQUIPMENT

Environmental testing

- * Weiss Technik 3-zone thermal shock chamber
- * BMA extra dehumidification chamber
- * SII high temperature oven
- * AES salt spray chamber
- * Despatch high pressure cooker
- * Heraeus Votsch low pressure chamber
- * Tabai temperature/humidity chamber
- * BMA walk-in temperature/humidity chamber
- * Weiss Technik temperature/humidity cyclic chamber
- * Heraeus Votsch temperature/humidity cyclic chamber

- * Vibration testing
 - RMS High frequency vibrator
 - LDS random and sine vibrator

- * Shock testing
 - Lansmont shock test system, Model: 95/115 Safety testing

Power supply testing

- o Intepro 6500 power supply test system

Electrostatic testing

- o ETS 406C static decay meter
- o ETS 805 IC tube resistivity meter
- o HED-S5128M-VIPC ESD test system

Non-destructive failure analysis

- o Hitex 100R-1 soft X-ray system
- o HP4145B semiconductor parameter
- o HP82000 digital IC tester
- o Tektronix 370A curve tracer
- o Micromanipulator 6400 probe station

IC testing

- o HP82000 digital IC tester
- o HP4145B semiconductor parameter analyser

Passive components testing

- o HP4195A spectrum/network analyser
- o HP4194A impedance/gain-phase analyser
- o Advantest R3261A spectrum analyser with tracking generator
- o Meguro MQ161 Q-meter
- o HP4328A milliohmeter
- o Biddle hot line coil R-meter

X MECHANICAL TECHNOLOGY SERVICES

MAJOR EQUIPMENT :

- o MicroVax II super-mini computer complete with software such as PAFEC-FE and PAFEC-PIGS. Full module of NISA II softwares on 386/25H3 PC
- o PAC 3004 acoustic emission machine
- o Compact heat flow meter system
- o A strong floor system capable of full-scale structural loading tests
- *o Vibration and shock test equipment
- o AGA thermovision 782 petros scanner c/w accessories
- o Transmission and reflective polariscopes for photostress analysis
- *o Standard mechanical testing facilities such as tensile, Charpy impact, drop weight and hardness testing machines
- o Torsion measurement equipment
- o High-temperature tensile test system
- o 8.6m x 5m facade-testing (curtain wall) facility
- o High-speed camera and video system
- o Dynamic strain instrumentation
- o Creep and rupture testing machine
- o 3m x 3m furnace for fire door testing

XI DESIGN & DEVELOPMENT SERVICES

MAJOR EQUIPMENT :

- o Prototype mechanical, electronics and electrical workshops.
- o CAD/CAE equipment for:
 - 3-D solid modelling package.
 - Electronic circuits simulation.
 - PCB design.

XII ELECTRONICS & COMPUTER APPLICATIONS SERVICES

MAJOR EQUIPMENT :

- o Electronics workshops
- o Daisy Cadnetix System for design and PCB layout
- o Vision workshop.

SISIR comes under the Ministry of Trade and Industry.

4-1 SISIRの理事に商工省のメンバーが入っているが、政府から与えられた予算の運用については、SISIRに任されている。

政府のグラントについては、この5年間横這いである。

