



GOVERNMENT COLLEGE OF TECHNOLOGY

(An Autonomous Institution Affiliated to Anna University,
Chennai)

COIMBATORE-641013
TAMILNADU



ELECTRIC MOTOR TESTING CENTRE

(Funded by TEQIP – III under Centre of Excellence in Alternate
Energy Research)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGG.,

BROCHURE



GOVERNMENT COLLEGE OF TECHNOLOGY

The Government College of Technology started in 1945, celebrating its platinum jubilee, is one of the Premier Engineering Institutions of the country having a very large contribution to academic and technological developments. It offers nine under graduate programmes, eleven post graduate programmes and offers facilities for full time and part time Ph.D. programmes. Our institution has been accredited by NAAC with 'A' grade for 5 years. GCT received TEQIP fund of Rs. 13.5 crores in phase – I, 17.5 crores in phase-II and 7 crores in phase-III. Our college has been selected for establishing Centres of Excellence in “Alternate Energy Research” and “Environmental Studies” with funding of 5 crores each.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGG

The department Electrical and Electronics Engineering is one of the oldest departments of this institution spanning more than 75 years of existence which offers one under graduate programme, two post graduates programmes and research programmes. The department has been accredited by NBA for 5 years. The department has a team of well qualified and dedicated faculty members having vast experiences in the areas of Power Electronics, Power Systems, Control System and Embedded System. Department has established Centre of Excellence in Alternate Energy Research (CoE-AER) under TEQIP phase –II with fund of Rs. 5 crores. The goal of CoE-AER is to develop a centre for R & D activities in the thrust area of wind power and solar energy and to provide better solutions for industrial problems.

CENTRE OF EXCELLENCE IN ALTERNATE ENERGY RESEARCH

To enhance Research, Development and Innovation in academic institutions, MHRD is competitively funding 30 Centres of Excellence for world class research in thematic areas under Technical Quality Improvement Programme, TEQIP-II, a World Bank assisted Project. Department of EEE received Rs.5 Crores funds for establishing Centre of Excellence in Alternate Energy Research. The thematic area of excellence includes Wind and Solar Energy. Around 50 equipment and many softwares have been procured and installed in the Department of Electrical and Electronics Engg. All the installed items are being used for research, development, testing and consultancy works. Faculty, Research and PG scholars use these facilities for their research and project works.

ELECTRIC MOTOR TESTING CENTRE

Motor testing set up is one of the important installations procured under TEQIP-III. Electric Motor Testing Centre (EMTC), GCT, is the first among all engineering institutions in Tamilnadu for testing industrial motors. EMTC is equipped with three fully-automated test benches capable of testing motors in the wide range of fractional HP to 10 HP.

The test Centre for electric motors offers the possibility to carry out extensive analyses of electric drives. The test bench includes all components that are necessary for testing of motors. These include the dynamometer loading, a vibration-decoupled machine bed and measurement technology for recording mechanical and electrical measured variables. The field of application ranges from efficiency measurements, load tests to thermal validation and structure-borne noise measurements and endurance test of electric drive and inverter.

In addition, measurements certification can also be provided. The planning and assembly of the test specimen are carried out by experienced, expert personnel. The tests are accompanied by a measurement engineer who operates and monitors the test bench.

The test set up includes

- Motor test rigs with dynamometers and load sensors
- Eddy current dynamometers 80 Nm, 24 Nm, 2 Nm
- Dynamometer control unit
- Power Analyzer
- High speed DAC with motor testing software with dedicated PC
- Rectifier Unit
- Motorized dimmer start for AC motors
- Hand held resistance meter
- Hand held IR tester
- High voltage tester
- Hand held vibration meter
- Hand held sound level meter
- Hydraulic motor lifting stacker
- Equipment to measure and plot temperature rise for different duty loads

MOTORS

The performance of the following motors can be certified through different tests

- Single and Three Phase Induction Motors upto 10 HP, 3000 rpm
- PMSBLDC and Fractional Horse power DC Motors

TESTINGS

- Insulation Test
- Resistance Test (Windings)
- Load Test
- Temperature Rise Monitoring
- Efficiency Calculation
- Overload Capability
- Performance Characteristics

PERFORMANCE REPORT

Computerized Electrical motor performance testing system continuously monitors and captures the following. Certified report is also issued by the department of EEE, GCT, Coimbatore

- No load test parameters- Voltage, Current, Power, Power factor, speed and frequency
- Efficiency Test parameters- Voltage, Current, Power, Power factor, speed, load and frequency
- Temperature, insulation, winding Resistance and vibration
- Locked rotor test parameters- Load, Voltage, Current, Power

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