www.erda.org

ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION

Centre of Excellence For Rotating Machines

(Motors, Pumps, Engines & Alternators)

CENTRE OF EXCELLENCE FOR ROTATING MACHINES : A CAPABILITY PROFILE

Electrical Research and Development Association (ERDA), a not for profit professional organization, registered under societies act and Public trust formed under the charity commissioner of Maharashtra, was promoted by the Electrical Industries and some utilities with support from Government of India through CSIR and grant given by the Government of Gujarat. ERDA was established at Vadodara on the land provided by Government of Gujarat free of cost.

ERDA has established “Centre of Excellence for Rotating Machines” for type testing of Submersible Pump Sets, Motors, IC Engines & Alternators as per various IS and IEC standards. ERDA has more than three decades of exprience in testing of Rotating Machines. ERDA has world class infrastructure for conducting type testing of rotating machines up to 150 HP (110 kW) at 50 Hz & 60 Hz. These facilities are recognized by BIS, BEE, NABL and MNRE.

TESTING AND EVALUATION

Key Test Capabilities at a Glance:

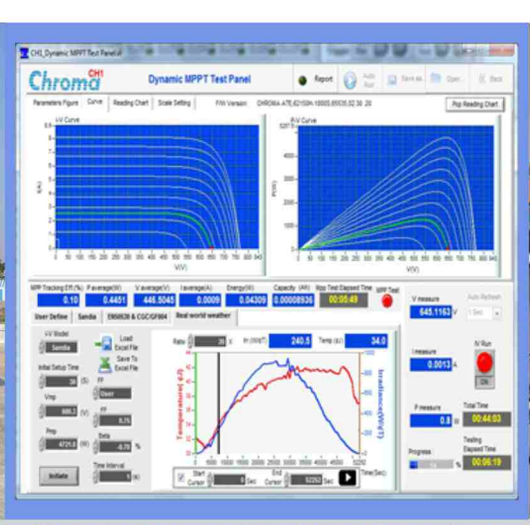
- Automated Pump Testing Facility up to 150 HP, 8 " Size, 50 Hz & 60 Hz
- Automated Motor Testing Facility up to 150 HP, 50 Hz & 60 Hz
- Automated Engine Testing Facility up to 150 HP
- Automated Alternator Testing Facility up to 20 kVA rating
- Solar Pump Test Facility up to 10 HP as per MNRE guidelines
- Solar Inverter Test Facility up to 20 kVA
- Flameproof Test Facility

Rotating electrical machines consume 75% of electrical energy used in industries. Therefore, quality control and efficiency measurement become necessary for motors. Presently energy efficient motor is mandatory in India and no one can make or sell motor below IE2 class. ERDA is fully equipped with precision instrumentation to test these energy efficient motors as per latest standard requirements.

Now renewable energy exploration is a critical need for meeting our future energy demand and testing of renewable energy equipment is essential. ERDA is enhancing its capacity in field of renewable energy component testing such as solar pumping system including solar photovoltaic modules. Solar submersible and surface pumping system testing is mandatory as per MNRE guidelines.

ERDA has set up a flame proof test facility for evaluation and performance of electrical equipment in presence of hazardous environments.

Outdoor Set Up with Pyranometer



Simulator Software Capable to Generate I-V Curve based on Hot & Cold Irradiance Profile

Pipe Setup with Automated Equipment

FIELD SERVICES

Generators & Motors

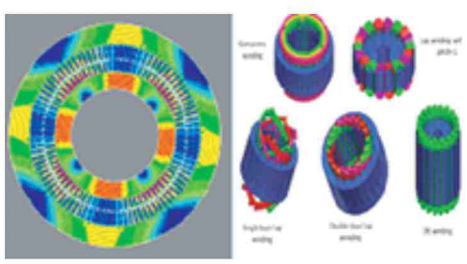
- ELCID of Stator Cores of Rotating Electrical Machines
- Current Signature Analysis of Motors
- Online Partial Discharge Detection of Motors & Generators
- Circuit Analysis of Motor & Generators
- Acoustic Analysis of Bearings of Rotating Machines
- In-Situ Mechanical Vibration & Noise Analysis

RESEARCH & DEVELOPMENT AND EXPERT SERVICES

ERDA has a strong team of research scientists & engineers in the field of electrical engineering since its inception. We are the pioneers in research & product development related to the power sector. We support manufactures to find optimal and most efficient solution through our research & development infrastructure.

Simulation & Design Tools for Design Validation & Optimization

- Ansoft RmXpert: Motor Design Software
- CF Turbo & Simerics: Pump Design Software
- Ansoft Maxwell 2D/3D: FEM Analysis, Electromagnetic & Electrostatic Analysis etc.

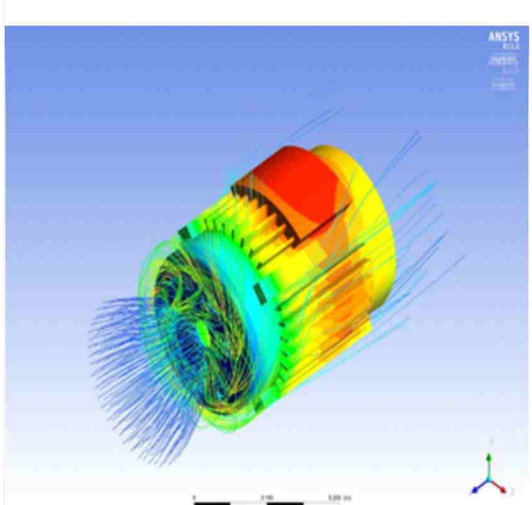


Glimpse of R&D projects

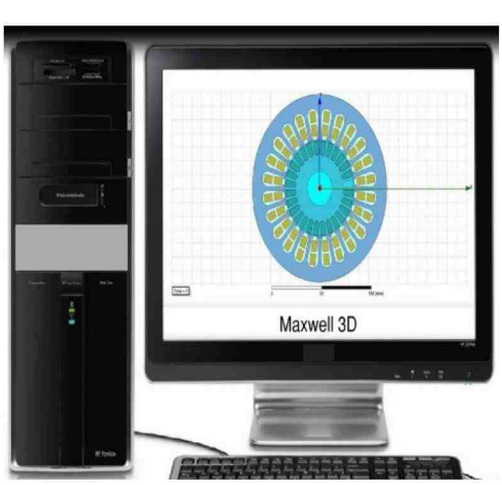
- Development of 3 phase hysteresis motor
- Study of grid abnormality on wind turbine driven induction generator for performance comparison
- Study of indigenous and imported energy efficient motors
- Design of energy efficient submersible motors
- Development of motor current signal analysis instrumentation for online condition monitoring of motors
- Development of submersible pump set with higher overall efficiency
- Development of plastic impeller for 6” bore submersible pump set
- Development of centrifugal pump to work as turbine and its integration with generator & load controller

Energy Efficient Motors

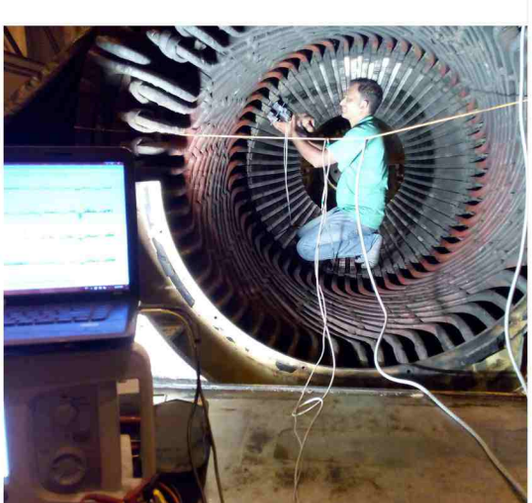
ERDA offers design services for IE2, IE3 & IE4 class induction motors along with design verification services for Energy Efficient Motors.



Motor Analysis Using CFD



Electromagnetic Analysis



ELCID of Stator Core

Bureau of Indian Standards

Certificate No: TC-5389

ENERGY IS LIFE
BEE
CONSERVE IT

सत्यमेव जयते
Government of India
Ministry of New and Renewable Energy

ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION

web: www.erda.org | **Email:** bd@erda.org

Head Office:
ERDA Road, GIDC, Makarpura,
Vadodara - 390 010, Gujarat.
Tel: +91-265-2642942, 2642377, 3043128-3043131
Fax : +91-0265-2638382 | Email: erda@erda.org
Toll Free No.: 1800 233 2668

Registered Office & ERDA (West) Laboratory:
R-336, TTC Industrial Area,
Near Rabale Railway Station,
Navi Mumbai - 400 701, Maharashtra.
Tel: +91-22-27606212-14
M: +91-9820719041 | Email: erdarab@erda.org

ERDA (North) Laboratory:
CBIP Centre of Excellence,
Plot No: 21, Sector 32, Gurgaon - 122 001, Haryana.
M.: +91-9999320346 | Tel: +91 (0124) 2580021
Email.: erdadel@erda.org

ERDA (South) Laboratory:
Plot No: 57A, Auto Nagar, AP Industrial Infrastructure Corp.,
Rajahmundry - 533 106, Andhra Pradesh.
M.: +91-9966947999 | Email: erdarjm@erda.org