

**Fabtech Technical Campus
College of Engineering and Research
Sangola**

“RESEARCH & DEVELOPMENT POLICIES”



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MAHARASHTRA, INDIA
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To,

Authorities/ Colleagues/ Employees

I am pleased to inform you that policies and guidelines for their implementation have been developed and documented covering varieties of academic/ administrative activities of the Institute which have an influence in impacting on the overall performance of the Institute. The policies and the guidelines have been developed either in the form of a document/ manual.

Faculty/ staff/ students of the Institute are kindly instructed/ requested to follow the same in letter and spirit so as to ensure that the activities of the department/ Institute shall follow guidelines which are approved and authorized by the authorities of the Institute. Valued suggestions related to incorporating appropriate changes/ modifications to the documents/ manuals are most welcome.

I am vested with authority to issue the documents/ manuals, to appropriate functionaries/ users and these are meant for internal circulation only. Copying and publishing any or all of the contents available in these materials without the knowledge of the undersigned is strictly prohibited.

Prof. (Dr.) R. B. Shendge
Principal

ABOUT FABTECH EDUCATION SOCIETY

The Fabtech Education Society, Pune is an ethnicity for advanced education. The essential rationale of FES is to enable provincial youth through training and anxious to make and put without hesitation such thoughts, strategies, systems and data. .FES is an instructive mission and a fantasy of its author - Hon. shri. B.A.Rupnar, an eminent industrialist, a multifaceted visionary who has advanced thinking and profound pull values for prospering the provincial populace through training and abilities improvement.

Vision

To be the prime institute of professional education and research in the benefits of the society.

Mission

1. Provide opportunities to deserve students of all communities in particular for quality professional education.
- 2.Design and deliver prospectuses to meet the national and global changing needs through student-centric learning methodologies.
- 3.Nature and retain the best faculty and technical manpower.
- 4.Amalgamate the state-of-art infrastructure and equipment for teaching and research activates.
- 5.Promote all round personality development of the students through interaction with professionals, alumni, academic and industry.
- 6.Strengthen the Educational Social Responsibilities (ESR) of the institution.

Goal

1. Establish engineering institute with an art of class infrastructure.
2. Providing excellent facilities for students in engineering domain.
3. To promote gender equality.
4. Spread quality education in rural areas.
5. Enormous exposure to industry environment.
6. Confer technical knowledge in pace with latest technology in industry.
7. To develop philanthropic attitude in would-be engineers for the upliftment of existing social plight.

Quality Objectives

We are committed to

1. To provide outcome based education through effective teaching-learning process.
2. To strengthen industry institute interaction by providing practical industrial exposure to the students and up-gradation of faculty knowledge about advanced trends.
3. Provide sound practical knowledge and value based education in engineering field to create seasoned engineers.
4. Appoint qualified competent staff and improve their knowledge and skills.
5. Provide competent and versatile engineers to the industry and society.
6. Boosting social instinct in dynamic engineering students.

About Research and Development Cell

The Research and Development Cell is established to promote research activities at Fabtech Technical Campus, College of Engineering and Research, Sangola. The Cell objective is to monitor Research programs for Faculty, Students & Industries to undertake quality research activities.

- Our faculties have published more than 150 research papers in National and international journals.
- Institution has industrial back bone.
- Institute has signed more than 25 MoUs with different organizations.
- Institute has conducted more than 30 events. In which two day workshop on Research Methodology was conducted during 20 to 21 April, 2018
- Super SID Monitor for Ionospheric study is in the credit of institute.

Objectives of R & D Policies

- This policy aims to develop an institute ethos which generates Activities that promote innovative techniques.
- This policy aims to establish an integrated and coordinated approach towards research and development.
- This policy aims to provide a found for research and infrastructure which will support research activities.
- This policy aims to collaborative research with other research institutions as well as industries.
- Promoting multi-disciplinary / inter - disciplinary research programs (PhD programmes)
- Promoting creativity and innovation among students/researchers through project activities.
- Disseminating research findings by conducting seminars, expert talks, training and workshops.
- Conducting Education Programs like FDP, STTP on latest research topics and technologies.
- Generation of research funds and industrial consultancy projects
- To coordinate the archival process for Proposals and Technical reports and publications of the institute besides publishing monthly/annual R&D progress reports.

Our Research Area

Name of the Department	Focus Areas
Mechanical	Controls & Dynamics of Complex Systems Design Energy Science and Technology Dynamics Micro and Nano Engineering

	<p>Fluids Manufacturing Materials Heat and Mass Internal Combustion Engine transfer Mechanics Any relevant</p>
Electrical	<p>Microelectronics and VLSI Power Engineering RF and Microwaves Signal Processing, Communications and Networks Photonics Any relevant</p>
Electronics	<p>Advanced Communication Embedded Systems Biomedical and Health Care VLSI Design Industrial Automation Control and Automation Any relevant</p>
Civil	<p>Earthquake Engineering Mechanics of Materials Damage and Fracture Mechanics Foundation Engineering Soil Reinforcement and Geosynthetics Computational Mechanics and Modeling Rock Mechanics Condition Assessment of Railway Bridges Any relevant</p>
Computer Engg.	<p>Architectures, Compiler Optimization, and Embedded Systems Bioinformatics and Computational Biology Data Mining, Databases, and Geographical Information Systems Graphics and Visualization High Performance Computing Human Computer Interaction (HCI) Networks, Distributed Systems, and Security Any relevant</p>
AIDS	<p>Machine learning Hadoop Architect Cloud computing</p>

	<p>Ethical Hacking Cyber Security Blockchain Full Stack Computer Systems Computer Network Information Security</p>
<p>Basic Sciences and humanities</p>	<p>Physics: Atomic, Molecular and Optical Physics. Atmospheric Physics Experimental and Observational Astrophysics and Cosmology. Experimental Condensed Matter Physics. Experimental Particle Physics. Theoretical Physics Any relevant</p> <p>Chemistry: Analytical Chemistry Chemical Theory & Computation Energy & Catalysis Environmental & Green Chemistry Experimental Physical Chemistry Inorganic & Organometallic Chemistry Nanoscience & Materials Chemistry Organic Chemistry Any relevant</p> <p>Mathematics: Algebra Calculus and analysis Geometry and topology Combinatorics Logic, Number theory Dynamical systems and differential equations Mathematical physics Any relevant</p>

List of funding agencies for Research

- Atomic Energy Regulatory Board (AERB)
- Aeronautics Research and Development Board (ARDB)

- Board of Research in Nuclear Sciences (BRNS)
- Council of Scientific & Industrial Research (CSIR)
- Defense Research & Development Organization (DRDO)
- Department of Atomic Energy
- Department of Biotechnology (DBT)
- Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers
- Department of Electronics and Information Technology
- European Union
- Indian Council of Agricultural Research (ICAR)
- Indian Council of Medical Research (ICMR)
- Indian Council of Social Science Research (ICSSR)
- Indian National Science Academy (INSA)
- Indian Space Research Organisation (ISRO)
- Ministry of Defence
- Ministry of Earth Science
- Ministry of Environment & Forests (MoEF)
- Ministry of Health & Family Welfare
- Ministry of Petroleum & Natural Gas
- Ministry of Power
- Ministry of Rural Development
- Ministry of Railways
- Ministry of Small Scale Industries
- Ministry of Textiles
- Ministry of Urban Development
- Ministry of Water Resources
- National Board for Higher Mathematics (NBHM)
- Naval Research Board (NRB)
- Petroleum Conservation Research Association (PCRA)
- Science and Engineering Research Board (SERB)
- Tata Institute of Fundamental Research

Schemes and addresses of well-known funding agencies

➤ **University Grants Commission (UGC)**

The Secretary,
 University Grants Commission,
 Bahadur Shah Zafar Marg, New Delhi 110002
www.ugc.ac.in

All India Council for Technical Education (AICTE)

Schemes

- i) Research & Institutional Development Schemes
 - a) Modernization & Removal of Obsolescence Scheme (MODROBS)
 - b) Research Promotion Schemes (RPS)
- ii) Industry – Institute Interaction Schemes
 - a) Industry Institute Partnership Cell (IIPC)
 - b) Entrepreneurship Development Cells (EDC)
- c) National Facilities in Engineering & Technology with Industrial Collaboration (NAFETIC)
- d) Nationally Coordinated Project (NCP)

Adviser – II, RID Bureau,

All India Council for Technical Education,

NBCC Building, East Wing, 4th Floor,

Pragati Vihar, Bhisham Pitamah Marg, New Delhi – 110 003

www.aicte.ernet.in

➤ **Council of Scientific and Industrial Research (CSIR)**

Schemes

- Research Schemes
- Sponsored Schemes
- Emeritus Scientist Scheme
- Research Fellowships/Associateships
- Other Science & Technology Promotion Programs
 - CSIR Program on Youth Leadership in Science
 - CSIR Diamond Jubilee Research Interns Award Scheme
 - Visiting Associateship Scheme
 - Partial Financial Assistance for holding National /International/ Conferences/Symposium/Seminar/ Workshops in India
 - Partial Travel Grants to Research Scholars
 - Entrepreneurship Support to Research Scholars
 - Faculty Training Programme and Adoption of Schools and Colleges by CSIR Laboratories

The Head, Human Resource Development Group

Council of Scientific and Industrial Research,

CSIR Complex, Library Avenue, Pusa

New Delhi – 110012

Website: <http://csirhrdg.res.in>

➤ **Defence Research and Development Organization (DRDO)**

Schemes

• Extramural Research Scheme

Research sponsored in academic institutions under the extramural research (ER) scheme focuses on research on phenomena or observations that are not understood and that lack of understanding is recognized as an obstacle to scientific or technological progress in the broad topic area of relevance to military R&D. The knowledge base, so generated is embodied in high-quality technical manpower and in the new understanding, techniques and design-tools developed through the basic research funds. Such new knowledge can also provide pathways to significant advances in the mission-effectiveness of traditional military roles.

The Director, Directorate of Extramural & Intellectual Property Rights

Defence Research & Development Organization, West Block 8, 1st Floor, R.K. Puram

New Delhi – 110066

Website: www.drdo.com

Aeronautics Research & Development Board

Government has set up Aeronautics Research & Development Board to coordinate, fund and sensitize futuristic, scientific technological areas having potential application for aeronautical systems, at academic institutions and national scientific laboratories.

The board promotes Centres of Excellence in selected areas like Computational Fluid Dynamics, Systems Design & Engineering and Composite Structures Technology. The Board also promotes Seminars, Presentation of papers in India & abroad, Writing of books and so on.

Secretary, AR&DB, Defence Research & Development Organization

332, 'B' Wing, Sena Bhawan, New Delhi – 110011

Website: www.drdo.com/boards/ardb/default.html

➤ Department of Atomic Energy (DAE)

Name of the Scheme(s)

- R&D Project
- Symposium/Conference/Workshop
- DAE Young Scientists Research Award
- Dr. K.S. Krishnan Research Associateship

To Support talented science and engineering research scholars

- Raja Ramanna Fellowship
- Visiting Scientists
- Homi Bhabha Chair Professorship
- DAE Graduate Fellowships

- DAE Graduate Fellowships for Ph.D.
- DAE – SRC Award

The Scientific Secretary / Programme Officer, BRNS Secretariat
Department of Atomic Energy, 1st Floor, Central Complex,
BARC, Trombay, Mumbai – 400085

➤ **Department of Science and Technology (DST)**
Scheme(s)

- Instrument Development Programme (IDP)
- International S&T Cooperation (ISTC)
- Joint Technology Projects under STAC/IS-STAC
- Science & Engineering Research Council (SERC)
- Science & Society Programmes (SSP)
- State Science & Technology Programme (SSTP)
- Technology Development Programme (Joint Technology – Technology System Programme)
- Utilization of Scientific Expertise of Retired Scientists (USERS)

Department of Science & Technology, Technology Bhawan,
New Mehrauli Road, New Delhi – 110016
Website: www.serc-dst.org

➤ **Department of Scientific and Industrial Research (DSIR)**
Scheme(s)

Technology Promotion, Development & Utilization Programmes and its Components

Department of Scientific and Industrial Research, Ministry of Science & Technology
Technology Bhawan, New Mehrauli Road, New Delhi – 110016
Website: www.dsir.gov.in

➤ **Indian Space Research Organization (ISRO) – Department of Space**
Scheme(s)

- ISRO Sponsored Research Programme (RESPOND)
- Space Science Promotion (SSP)

Deputy Director, RESPOND
ISRO Headquarters, Antariksh Bhawan
New BEL Road, Bangalore – 560094
Website: www.isro.org

Space Science Promotion (SSP)

Programme Director, Space Science Office

ISRO Headquarters, Antariksh Bhawan

New BEL Road, Bangalore – 560094

Website: www.isro.org

➤ **Ministry of Communications & Information Technology (MOCIT)**

Department of Information Technology

Scheme(s)

- Microelectronics & Nanotech Development Programme
- Technology Development Council
- Convergence, Communication & Strategic Electronics
- Components & Material Development Programme
- Electronics in Health
- Human Computer Interface – TDIL
- E-Commerce & Info-Security
- IT for Masses (Telemedicine)
- Media Lab Asia
- Photonics Development
- Industrial Applications

Areas of Research Support

- Information Technology (Hardware/Software)
- Convergence, Communication & Broadband Techniques
- Micro-electronics & Photonics
- Industrial Electronics
- E-Commerce & Information Security
- Nanotechnology
- Electronic Components including Microwaves & Millimeter waves
- Emerging Areas of Information Technology
- Human Computer Interface/Language Technology

The Secretary, Ministry of Communications & Information Technology,
Department of Information Technology, Block-6, Electronics Niketan, CGO Complex
Lodi Road, New Delhi – 110033

Website: www.mit.gov.in

11 Ministry of Non-Conventional Energy Sources (MNES)

Scheme(s)

***Industry/institution Participation in Research and Development Projects**

➤ **Areas of Research Support**

- New Technologies in Solar/ Thermal
- Solar Photovoltaics
- Wind Energy
- Biomass Energy
- Small Hydro's
- Others

Director (R&D), R&D Division, Ministry of Non-Conventional Energy Sources
Block No. 14, C.G.O. Complex, Lodi Road, New Delhi – 110003
Website: www.mnes.nic.in

➤ **Ministry of Power, Central Power Research Institute (CPRI)**

Name of scheme(s)

• **Areas of Research Support**

The research areas include but not limited to:

- * Power System Planning, Improvement, Studies
- * Diagnostic and Condition Monitoring of Power System Equipments.
- * Reliability Enhancement of Power Station Equipment etc.

However, pertinent projects in the power sector on specific case will also be considered.

Joint Director (R&D), Central Power Research Institute, Ministry of Power
P B No.8066, Bangalore 560080,
Website: <http://powersearch.cpri.res.in>

➤ **Department of Education (DOE)**

The Deputy Education Adviser (T), Division TD, VI,
Department of Education, Ministry of Human Resource Development,
Shastri Bhawan, New Delhi

➤ **Science and Technology Application for Rural Development (STARD)**

The Head, Science & Society Division, Dept. of Science & Technology, Technology Bhavan,
New Mehrauli Road, New Delhi – 110016
Website: www.scienceandtechnology-dst-org.

➤ **Science & Technology for Weaker Sections (STAWS)**

Science and Society Related Programmes

The Head, Science & Society Division, Dept. of Science & Technology, Technology Bhavan,
New Mehrauli Road, New Delhi – 110016

➤ **Indian National Science Academy (INSA)**

The Chairman, Indian National Science Academy, Bahadur Shah Zafar marg, New Delhi - 110002

Website: insal@ndf.vsnl.net.in

International Funding Agencies

International Foundation for Science

Director,
International Foundation for Science,
Grev Turegatan 19, S.114 38, Stockholm, Sweden.

Third World Academy of Science (TWAS)

Executive Director,
Third World Academy of Science (TWAS),
International Centre for Theoretical Physics (ICTP),
P.O. Box 586 – Via Beirut 6 – 34100,
Trieste – Italy.

Third World Network of Scientific Organizations

The Third World Network of Scientific Organizations, (TWNSO),
C/o Abdus Salam International Centre for Theoretical Physics (ICTP),
Strada Cpstoera 11 – 340 14,
Trieste – Italy.



An Education Empowered by industry ...
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING AND RESEARCH, Sangola.
(Approved by AICTE, New Delhi, DTE., (M.S.) & affiliated to Dr.
Babasaheb Ambedkar Technological University, Lonere)

R & D Committee

Sr. No.	Name of Faculty	Designation
1	Prof. (Dr.) R. B. Shendge	Chairman
2	Dr. S. S. Nikte	Co-ordinator
3	Dr. A. K. Kanase	Member
4	Dr. T. A. Dhaigude	Member
5	Mr. J. B. Patil	Member
6	Mr. M. A. More	Member
7	Mr. R. S. Autade	Member
8	Miss. S. M. Raut	Member

