RESEARCH AND DEVELOPMENT CELL (R&D CELL)

AGTI's Dr. Daulatrao Aher College of Engineering has promoted meaningful scientific industrial Research and Development activities with a vision and mission to pursue and promote Research in Frontier Technologies as well as in the various disciplines of Engineering.

For any education, specifically technical education, the basic model of a 'teaching – only' institution is inadequate to ensure quality education. In all disciplines of technical education, knowledge is dynamic with new technologies being introduced very frequently. In this scenario, it is not possible for the teachers to deliver good quality instructions without being tuned to the current developments in the subjects, for which they must constantly update their knowledge. A well-recognized way to deal with this paradigm is for the teachers to be active researchers in the areas in which they interested. As researchers, they need to understand the past and recent developments in their subject areas.

Research and Development cell was established at DACOE to inculcate research and innovativeskills among faculty and students. R&D Cell provides a platform for creativity and innovation to flourish young minds in Institute. Innovative breakthroughs will happen only because of meticulous efforts of R&D. The Institute provides SEED amount to facilitate basic common research infrastructure for individuals to execute collaborative work.

DACOE R&D cell is a nominated committee consisting of Professors from various programs of Engineering. This committee oversees the smooth and efficient coordination of research anddevelopment activities in the Institute, thus fostering overall growth. The organizational structure consists of Advisor, Principal, Dean and Coordinators for facilitating the routine functioning of the cell.
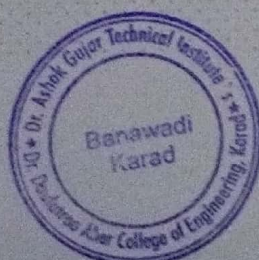
COMPOSITION OF R&D CELL

Advisory Committee- Institute Research Advisor, Principal, and Dean

Institute Research Advisor- a Professor with at least 8 years of research supervision experience.

Coordinators- 5 to 7 teaching faculty members from the Institute with research supervising experience.

RESPONSIBILITIES OF MEMBERS

Advisory Committee- The role of advisory committee is to give advises on research matters whenever necessary.

- Assists the faculty, research scholars and students in filing of IPRs like patents and copy rights.
- Creating awareness and motivating researchers to work in emerging domains of engineering and technology.

RESPONSIBILITIES OF R&D COMMITTEE

- To prepare annual research activity plan for all the departments.
- To establish liaison with near and far industry and identify the technological challenges being faced by them. Strengthen industry institute interaction through MOUs for long term relationships with national and international research organizations for widening the scope of research options and funding opportunities for faculty and students.
- Take up appropriate problems of the industry for finding solutions through R&D projects assigned to faculty and students.
- Explore technological developmental opportunities in common application areas such as transport, traffic regulation, security, healthcare etc. and assign them to faculty and students.
- To initiate and promote MoU with industries and R&D organizations for consultancy, collaborative research, sponsored projects, industry and Institute interactions etc.
- To arrange brainstorming sessions through talks by eminent personalities from industry, R& D organizations and institutions of repute for the better understanding of research methodology and practices currently followed.
- To support faculty for delivering talks at different events and conducting workshops, training programs, seminars, conferences, symposia and faculty development programs.
- To keep everyone informed about announcements by various funding agencies like DST, DAE, DRDO, ISRO, CSIR, AICTE, UGC and University etc.
- To motivate students for presenting papers in National and International conferences and projects in competitions and exhibitions like AVISHKAR at university level. Interdepartmental / collaborative work to be encouraged.
- To monitor progress of the research and development activity.

RECOMMENDATIONS AND IMPACT

- Publications in Research Journals.
- Research Proposals for different funding agencies.
- Participation and Organizing Conferences, Workshops and STTP/FDP.
- Participation in Collaborative Research work, e.g. VAP /Industrial Training.
- Encouragement for Higher Education.
- Signing MOU with Industries and Research Organization.

INITIATIVES TAKEN TO INCULCATE THE SPIRIT OF RESEARCH AMONGST FACULTY AND STUDENTS ARE AS FOLLOWS

A. Industry Institute Interaction/Entrepreneurship Development Cell

Ministry of Human Resource Development (MHRD), Govt. of India has established 'MHRD's Innovation Cell (MIC)' to systematically foster the culture of Innovation amongst all Higher Education Institutions (HEIs). The primary mandate of MIC is to encourage, inspire and nurture young students by supporting them to work with new ideas and transform them into prototypes while they are in formative years.

MIC has envisioned encouraging creation of 'Institution's Innovation Council (IICs)' across selected HEIs. A network of these IICs will be established to promote innovation in the Institution through multitudinous modes leading to an innovation promotion eco-system in the campuses. It's our proud privilege that we have establishes the IIC in our college in the AY 2021-22.

B. New Laboratories Establishment

- Surya Mitra Lab sponsored by MITCON
- Innovation Lab at Department of CSE
- Windmill installed of capacity 1KW

C. Research Publications

As a result of tireless efforts taken in the research activities, the college has to its credit many research publications in National and International peer reviewed Journals. The faculty members have also presented research papers in various reputed national and international conferences. The total 167 plus research papers have published from academic Year 2017-to 2021

D. Research Projects

One of the important criteria to judge the performance of research output of the institution is to obtain recognition by reputed Government/Autonomous sponsoring agencies towards generation of funds to conduct quality research. The institute would attempt to receive a number of research grants from agencies like DST, AICTE, IEI, DRDO, CSIR etc. in near future. In addition to this, DACOE has also encouraged the faculty members to initiate research by giving the seed money to undertake various minor research projects. We have received 10 research grants from 2017-22 from Shivaji University.

E. Ph. D. Programs

Quality engineering education coupled with innovative research and development is absolutely essential towards the overall faculty development. The DACOE encourages higher education of faculty members to keep abreast of continuous technological development. Our 6 faculties are currently pursuing PhD.

R AND D CELL POLICY

To create good infrastructural facilities and conducive environment to inculcate research culture. Policy framework as follows –

- Incentives are provided for publications.
- Facilities such as flexibility in timings, use of laboratories etc. are extended to faculty as per requirement.
- Implementing a policy for distribution of testing and consultancy charges to motivate faculty for providing consultancy.
- Faculty with an aptitude for research is identified.
- An initiative is taken by Library to help researchers in understanding recent updates of their publications in terms of citation index, h-index, etc.
- In house Project development.
- The institute encourages the formation of various student chapters of professional bodies within APSIT. The institute will bear the membership fees for the same.

A. FINANCIAL ASSISTANCE TO STUDENTS FOR RESEARCH

a) Students will get reimbursement towards paying registration fees for presenting the paper in the conference. Also, students participating in various events such as technical quiz competition, technical fest, and technical poster presentation competitions at state level as well as at national level will be reimbursed by the institute.

b) Institute motivates the students for undertaking the interdisciplinary projects and provides required financial support.

c) Final year students will be given reimbursement for performing tests on the samples in the outside laboratory if required for their project work. Students must seek prior approval from concerned project guide and HOD.

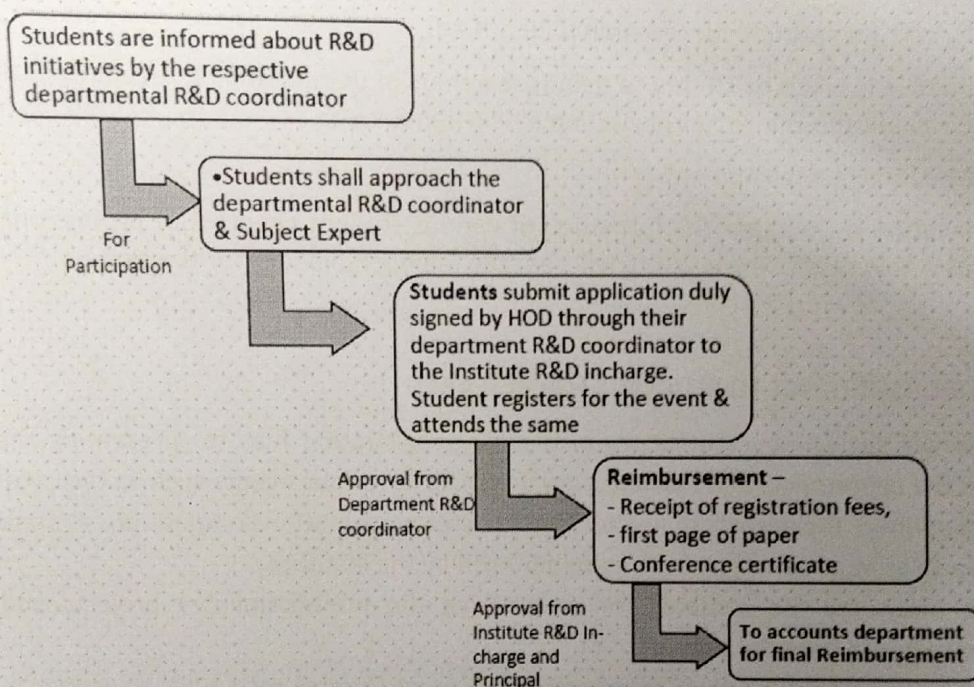**Financial assistance to Students for Research Process:**

- Students are informed about R&D initiatives by the respective department R&D coordinator.
- Students willing to publish research paper/participate in any technical activities shall approach the department R&D coordinator
- Students need to submit application signed by concerned HOD and their department R&D coordinator to the institute R&D in charge.
- On approval, the student registers for the conference.
- Students attend the conference.
- For reimbursement purpose, students must enclose receipt of registration fees, first page

of paper and conference certificate along with application and submit it to department R&D coordinator. Department R&D coordinator approves the request.

- Students submits the above approved documents to the Principal for approval.
- Principal finally approves the application for reimbursement.
- Students needs to submit bills of expenditure to the head of department for approval and then to the accounts department for reimbursement. Students submits the above approved documents to the accounts for reimbursement.

Financial assistance to Students for Research Process:

B. **FINANCIAL ASSISTANCE TO FACULTY FOR RESEARCH**

i. The college provides financial support by reimbursing registration fees only for presenting papers in reputed National/International conferences held within India and for attending FDP/STTP/workshop/Seminar in other organizations in India.

ii. Faculty would also look for an alternate source of funding for participation in a conference viz., AICTE/UGC etc.

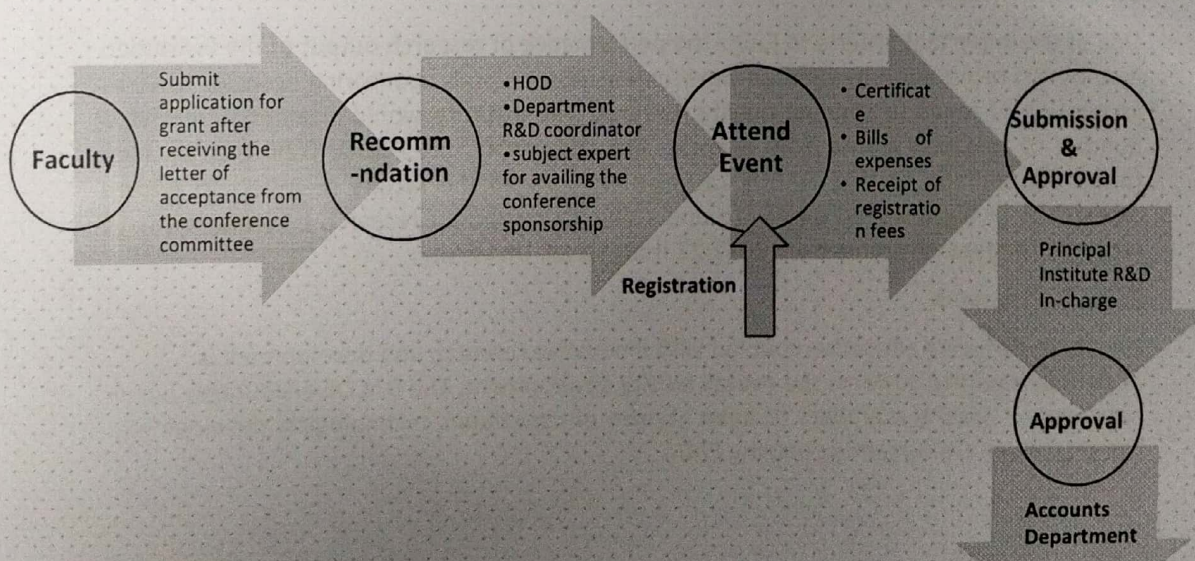iii. The faculty can avail OD for attending the conference/FDP/STTP/workshop/Seminar.

iv. The faculty should fill the required forms, get the approval and submit the same to the office before proceeding for the same.

v. The total cost of organizing any technical event for student and faculty will be borne by the institute.

Financial assistance to faculty for Research (Conference /FDP/STTP/workshop/Seminar) Process:

i. All requests for grant have to be made prior to the conference. Faculty members will submit the application for grant when they receive the letter of acceptance from the conference committee.

ii. The recommendation of Head of Department, Department R&D coordinator & subject expert is required for availing the conference sponsorship.

iii. On approval, the faculty registers for the conference and Faculty attends the conference/FDP/STTP/workshop etc.

iv. For reimbursement purpose, faculty must enclose receipt of registration fees, first page of paper and conference/workshop certificate along with application and submit it to department R&D coordinator.

v. Faculty submits the above approved documents to the Principal for approval within 15 days of attending the conference.

vi. Principal finally approves the application for reimbursement.

vii. Faculty submits the above approved documents to the accounts and gets reimbursement

Financial assistance to faculty for Research (Conference /FDP/STTP/workshop/Seminar) Process:

R & D COMMITTEE MEMBERS

Sr. No.	Name of Faculty	Designation	Department
1	Dr. A. M. Mulla	Principal	Electronics and Telecommunication Engineering
2	Dr. M. B. Kumthekar	Institute Mentor	Civil Engineering
3	Dr. P. M. Sheth	Institute Level Coordinator (Chairman)	Computer Science & Engineering
4	Prof. P. I. Kinikar	R&D Coordinator	Electronics and Telecommunicati onEngineering
5	Prof. A. H. Kumbhar	R&D Coordinator	Civil Engineering
6	Prof. A. D. Awasare	R&D Coordinator	Mechanical Engineering
7	Dr. S. S. Nangare	R&D Coordinator	BSH

Accordingly Institute promotes participation of faculty in innovative research by providing a conducive environment, necessary facilities and motivation.

Facilities available for R&D

i. The researchers are given highest priority in the institute. All the departments have well equipped laboratory facilities for the research and it can be made available to the students for research work.

ii. For multidisciplinary research projects, faculty and students can work in other department laboratories.

iii. Institute has purchased various latest software for research activities which helps the faculty and students in developing their projects. Through the available educational software, faculty and students can take advantage of a variety of tools and resources in the academic program. These will help prepare students for tomorrow's infrastructure workforce. Users can learn the powerful applications that are in use by infrastructure professionals today.

iv. The software and tools in DACOE SKILLS Centre will help optimise the higher educationinstitution's value for all students & faculties by tapping into the insights and solutions derived from this software. This software will enable DACOE to integrate educational skills and real-time job experiences in collaboration with businesses. It will givestudents access to advanced technology and thereby help learn emerging job skills.

v. The college has labs with 400+ computers and provided high speed internet facility to faculty as well as students.

vi. The Library has an extensive collection of books and e-books with 10000+ books in volumes covering all aspects of engineering.

vii. The library facilitates access to more than 400 video lectures under NPTEL prepared by various IITs.

viii. E-Resources are also available and can be accessed from any computer in the campus.

Research Resources

1. Industry Institute Interaction Cell (IIIC)
2. DACOE SKILLS Centre
3. Library & E-Library
4. Computing to Support research
5. Shared Resources – Labs
6. Clubs like Coding Club, Innovation Centere etc.
7. Communities and chapters like IET, CSI etc.