Karunya Institute of Technology and Sciences

COMPREHENSIVE POLICY ON PROMOTION OF RESEARCH AND CONSULTANCY

1.   INTRODUCTION

1.1.   *Background*

The research and consultancy programmes and assignments of Karunya Institute of Technology and Sciences (KITS) are guided and coordinated by the Dean/Coordinator (Research). A three-tier system is envisioned to plan, promote, monitor and evaluate the research and consultancy programmes, projects, assignments and to ensure participation and collaboration of the concerned in the research initiatives of the Institution. The three-tier system comprises of the Department and School Research Committees (DRC and SRC) and Board of Research and Consultancy (BRC); while first two are generally intended as internal committees, the BRC can have members/invited members from outside representing different disciplines. The stipulations of UGC have been also taken into account while drafting these policy statements.

This Research Policy has been drafted keeping in view the following requirements and aspirations:

- Necessity for more number of research projects/works of good quality

- Preparedness for facing tough competition in the field of research

- Requirements for constant monitoring and mid-course correction

- Ensuring the quality of publications and encouraging the faculty to file patents

- Importance of research in the context of career development

- Stipulations of UGC and different accreditation bodies

- Inculcating interest in research among the student community

- Fulfilling the Vision of KITS, especially dealing with Science and Technology for humanity and human welfare

- Interdisciplinary nature of research, in the focal areas of societal importance – Food, Water, Health and Sustainable Energy

1.2   *Major Programmes and Functions under Research and Consultancy*

- (i)   Central, Coordinated and Department/School Research Facilities
- (ii)   Sponsored / Externally Funded Research Projects
- (iii)   Academic Research
- (iv)   Research Integrity and Governance
- (v)   Consultancy Projects
- (vi)   Institution, R&D and Industrial Collaborations
- (vii)   Centers of Specialized Research and Institutes
- (viii)   Organizing National and International Conferences

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(ix)   Participation in Conferences and Workshops

(x)   Publication of Journals / Working Papers / Monographs / Proceedings

(xi)   Research Fellowships

(xii) Short Term Research Grants

(xiii) Student Research Grants

(xiv) Research / Professional Incentives

Apart from the above, separate policy statements/regulations are formulated for IPR, consultancy, professional incentives, seed money, academic assignments of those involved in research, action research and procedures related to animal and human ethics as stipulated by statutory bodies. There are also separate rules and regulations and procedures covering academic research in alignment with the guidelines of UGC.

1.3   Need for Policy Statements for Research

KITS has grown from an engineering college to an autonomous institution and to a deemed-to-be Institution in 2004. The Karunya Institute of Technology was started in 1986 and celebrated its 30 years of establishment in 2016. Its role as a deemed-to-be-university calls for R&D activities as per the standard practices in other universities of repute in the country and abroad. Though large-scale infrastructure facilities were made available for research and several instruments and equipment were procured from time to time both for the purposes of conventional laboratories and also laboratories exclusively for research, the need for a policy framework to optimally utilize these facilities and those to be added in future was recognized. The need for involving more faculty members in the research programmes has been also realized. Moreover, there are at present more than 600 scholars pursuing their research leading to Ph.D. apart from a few students carrying out research for the M Phil degree. There are also several students doing their Master's degree in different Schools/ Departments of the Institution, who are involved in research work towards partial fulfillment of their academic programme. The faculty members are also carrying out sponsored/funded research projects and several consultancy assignments. All these have been considered while bringing out these comprehensive policy statements dealing with research and consultancy activities. The statements also cover areas which are directly or indirectly related to the areas mentioned above and any other area found to be relevant in the context of enhancing research and consultancy activities in KITS.

2.   GOAL, FOCAL AREAS AND STRATEGIC PLAN OF RESEARCH

2.1   Goal

To enhance the research initiatives in the KITS, especially socially relevant research in the focal areas, leading to creative thinking, discovery and innovation in emerging areas, thereby making lasting contribution to science, technology, management, agriculture and environment.

2.2   Focal or Thrust Areas of Research

According to the vision of KITS, four focal or thrust areas of research have been identified, which have social and

ecological relevance in the context of India. The identified thrust areas of research include: water, food, healthcare and sustainable energy. These areas were identified keeping in view the overall vision of KITS which envisages application of science and technology for humanity and human welfare. These areas gain more importance in the context of the Sustainable Development Goals, commitment of India for facing the challenges of climate change, and multi-disciplinary approach envisaged by New Education Policy. While formulating the research projects and taking up consultancy programmes, these focal areas are given priority.

2.3   *Strategic Plan* (2016-2021)

In order to fulfill the vision and to achieve the goal of KITS as stated above, strategic plans were drawn up for the five-year periods, 2011-16 and 2016-21.

Progress of research and consultancy in KITS upto the date of drafting this revised policy in a nutshell is given below:

- Good infrastructure base for research in emerging and cutting-edge areas, including nanotechnology, food sciences, electrochemical water treatment and aerospace engineering, etc.
- More than three dozen sponsored research projects of GoI going on or completed in the areas of water, chemistry, plasma physics, biotechnology, energy, thermal engineering, biomedical engineering, structural engineering, biotechnology, etc.
- More than 200 scholars completed Ph.D. and around 600 pursuing Ph.D. programme
- Ph.D. Fellowships and Short Term Research Grants and Student Research Grants made available
- About two publications each by the faculty members in journals with impact factor
- Publication of Karunya Research Journals
- Several patents filed and published
- Each of the Departments developed state-of-the-art facilities for research in at least one area of its interest

Outcomes in research and consultancy have been now projected up to 2021.

The Schools and Departments are to work in tandem to achieve the targets highlighted in the Strategic Plan.

3.   THREE-TIER SYSTEM OF RESEARCH MANAGEMENT

The major functions related to research shall be coordinated and monitored by a three-tier system, consisting of Department and School Research Committees and Board of Research and Consultancy. The constitution, functions and details of holding meetings are given below:

3.1.   *Department/School Research Committees*

Constitution:

- The School and Department Research Committees shall be constituted with the Dean of the School and

Head of the Department respectively as Chairman.

Frequency of Meetings:

- The Committees are to meet at least once in a quarter

(Research office to be informed of the Meeting and Minutes sent to the Research Office)

Functions:

- Preliminary screening of research proposals (for internal and external funding)
- Periodic monitoring of research projects (internal and external)
- Identifying the thrust areas of the Department / School to fall in line with the overall vision
- Ascertaining the number and quality of publications and patents
- Initiating basic, applied and action research keeping in view the scientific and social commitment of KITS
- Evaluating proposals received for conducting seminars, workshops, conferences and training programmes
- Initiating consultancy projects with R&D inputs/components
- Initiating national and international research collaboration and exchange programmes with the support of Head, International Affairs
- Reporting the progress of research to the BRC

3.2.   Board of Research and Consultancy

Constitution:

The Vice Chancellor as Chairman, Dean/Coordinator (Research) as Member Secretary, Registrar, all Deans, Directors, Controller of Examination, Heads, Invited Experts/ Faculty as Members.

Frequency of Meetings:

The BRC shall meet minimum of two times a year.

Functions:

- To formulate research policies of KITS and identify thrust areas in emerging areas of science and engineering
- To advise on the Technology Missions
- To evaluate the progress of research, consultancy and allied activities
- To help in establishing national and international contacts/collaboration for research and consultancy works
- To review the progress in the areas of research, consultancy and transfer of technology
- To confirm the research supervisors and giving permission for the registration of supervisors and Ph.D. candidates
- To ensure research temper and research thrust in the curricula and syllabi at all levels/disciplines

4.   CENTRAL, COORDINATED, AND DEPARTMENT / SCHOOL FACILITIES

These policy statements aim at optimal and efficient use of the facilities available for research and consultancy works at KITS. Each such facility shall be entrusted with a faculty incharge of the Department/School and he/she is responsible for implementation of these policies under the guidance of the Head of the Department/Dean of the School. Research office shall provide the interpretation/clarification of these policies, whenever necessary or requested for.

4.1.   Central R&D Facilities

All facilities created by KITS for research, academic and general purposes come under this category. These include central library, computer centre and all the instruments/equipment procured with the funds of KITS and are available in different Schools/Departments/laboratories and all conference halls/auditoriums, etc, which can be used for conferences/seminars and workshops.

These facilities are to be made available to all faculty, scholars and students involved in research and consultancy works in KITS subject to the regulations framed from time to time based on the recommendations of the Dean of School and approval of Dean/Coordinator (Research), to be ratified by BRC. In order to ensure access to the facility by all those require the same for their research pursuits, to restrict the duplication of such facilities to the minimum, and to ensure that all concerned have access to the facility on equal footing, the need for streamlining the procedures has been recognized.

The Department/School who manages the facility shall assign the responsibility to a faculty, who maintains a log book or work book (for instruments/equipment generally costing more than Rs 50,000), in which details of use shall be recorded. The terms and conditions for use of the facility will be suggested by the faculty concerned through proper channel and the recommendation of Dean/Coordinator (Research) obtained before these are communicated to the stakeholders. Charges for making use of the facility shall be uniform for all users irrespective of the Department/School. The expenditure towards consumables shall be worked out and charged to the Department/School/Project concerned as the case may be. Standard proforma for communicating the terms and conditions shall be prepared and made available to all concerned. This procedure shall be followed with regard to all instruments/equipment already available, and from the time of completing the store purchase formalities in the case of future procurements/installations.

4.2.   R&D Facilities for Coordinated/Interdisciplinary research

KITS has established facilities for coordinated research in certain specified areas and also for analytical works. The need for optimally making use of these facilities along with other faculties for interdisciplinary research has been recognized. Interdisciplinary groups are encouraged to take up coordinated research making use of these facilities in the focal areas of research of KITS, namely water, food, healthcare and sustainable energy. These facilities shall be

made available to all those involved in research and consultancy on equal footing. The instruments/equipment bought under an externally funded project shall also be available for other scientific/consultancy works of KITS without affecting the works related to the specific projects for which they have been purchased. Wherever consumables are involved, expenses for these shall be met from the budget of the Department/School/ Project for which the facilities are made use of. Log/work books shall be maintained and terms and conditions for use streamlined following the procedures stated in this policy.

Field instruments procured using the funds of KITS or of external projects also shall be made available to all those who require these for field work following the terms and conditions stipulated. It shall be the responsibility of the faculty using the instrument/equipment to take care of the instrument and return it without causing any damage. However, the cost of consumables shall be met from the budget of the Department/School/Project utilizing the facility. A log/work book shall be maintained by the respective Department/School which is responsible for maintaining the instrument/equipment. All requests for such facilities shall be routed through the respective Heads/Deans.

4.3.   Department/School Facilities

All research/consultancy and other facilities available in the Departments/Schools shall also be made available to other faculty, research scholars and students involved in research and consultancy works at KITS, except during the period when such facilities are needed for academic purpose, as per the syllabi/time-table. However, the cost involved for consumables shall be met by the Department/School/Project concerned.

4.4.   Audit of Research Facilities

An annual audit of all research/consultancy facilities created in KITS shall be carried out by a team constituted by the Registrar. The team shall look into the availability, condition and the use of all facilities including instruments, equipment, software and infrastructure. Defunct/unusable instruments/equipment, as certified by the committee constituted for the purpose, shall be disposed of as per the store-purchase rules of KITS.

5.   SPONSORED/EXTERNALLY FUNDED RESEARCH PROJECTS

5.1.   Sponsored Projects

The sponsored research projects are those which are taken up by an Investigator, Department, School or the Institution on the request of an external agency, either Government or private. The requirements are often specified by the agency or a proposal is to be made by the Investigator, Department, School or the Institution showing the technical and financial details. The specific requests or proposals have to be scrutinized by the Department/School Research Committee and later put up to the Dean/Coordinator (Research) by the Head of Department or Dean of the School with their specific comments and recommendations. Depending on the particular case, the Dean/Coordinator (Research) will approve the request/proposal or place it in the BRC and approve the same. If required, it can also be referred to external experts for their views. Based on these, alterations/modifications shall be incorporated and the research project finalized and communicated to the sponsoring/funding agency. Generally, one PI and maximum of two Co-PIs are

recommended. If some of the facilities for taking up the project are not available in the Institution, those will also be included in the budget of the project. An amount equal to about 20% of the total cost of the project or as stipulated by the agency may be included as overhead in the proposal, this being arrived at based on the quantum of administrative works and use of other facilities of the Institution. In exceptional cases, if a project is found to be of interest to the Institution in fulfilling its academic and research goals, possibility of contributing a matching grant not generally exceeding 25% of the total cost may be considered by the authorities.

5.2.   Externally Funded Projects

It is the policy of the Institution to encourage externally funded projects. Towards this, the Institution expects that at least 6 externally funded projects shall be operated by each Department/School at any point of time. The following actions are called for to achieve this projected target:

1. Fine tuning the thrust areas of research by each Department/School
2. Forming Department/School level Groups to prepare project proposals in the thrust areas
3. Clearing the research proposals at the Department/School Research Committees
4. Identifying appropriate funding agencies and preparing the proposals in their formats
5. Submitting the proposal to the Dean/Coordinator (Research) after necessary procedures
6. Presenting the proposal to the Dean/Coordinator (Research) and complying with the comments
7. Sending the proposals to the funding agency/Registrar of KITS through the office of Dean/Coordinator (Research)
8. Answering queries/comments, if any, of the funding agency after consulting experts/Heads/Deans
9. Presenting the proposals, after due preparation, before the Review Committees, if required
10. Getting the research posts, if any, filled as per rules, and instruments procured as per KITS rules and regulations
11. Implementing the project and reviewing it at the DRC/SRC once in a quarter
12. Sending the progress reports, statement of expenditure and utilization certificates well on time
13. Submitting the final project report as per the time agreed while sanctioning the project.

Strict financial discipline shall be followed in implementing the project. Finance and Purchase Departments shall be consulted whenever necessary. Recommendation of JRFs / SRFs shall be in accordance with the stipulations of funding agency/KITS. The overhead charges also may be fixed as per the norms of the funding agencies or 20% of the total project cost. Coordination among the investigators and other team members shall be ensured by the Principal Investigator. Wherever inter-departmental or inter-school project teams are involved, Heads/Directors concerned may be invited for review meetings and their views given due weightage. The Principal Investigator/Investigators are responsible for the implementation of the project, and others serve only as facilitators. The project staff shall be governed by the rules and regulations formulated from time to time and the stipulations of funding agencies.

Projects costing more than Rs 10 million are classified under mega-projects and the Heads/Deans are expected to send the progress of these projects separately once in a quarter to the Dean/Coordinator (Research).

The minutes of the DRC/SRC shall be sent to Dean/Coordinator (Research) within a week after holding the meeting and the minutes shall clearly show all relevant details on the research activities going on in the Departments/Schools.

Wherever inter-departmental/inter-school projects are taken up, it shall be brought to the notice of all Heads/Deans concerned.

When taking up joint projects with external agencies, either national or international, permission of Dean/Coordinator (Research) and Registrar shall be obtained as also the concurrence of Head, International Affairs.

6. ACADEMIC RESEARCH

Research works leading to partial fulfillment of any academic degree are classified under Academic Research. However, research leading to Ph.D. are generally highlighted under academic research. These research programmes are governed by the Ph.D. Regulations revised from time to time in alignment with the requirements and norms of UGC and approved by the Board of Management based on the recommendations of Board of Research and Consultancy/ Research Council of the Institution.

The general features of the Ph.D. programme are given below:

1. The Institution notifies Ph.D. admissions twice in an academic year, once before the odd semester and another before the even semester.
2. Based on the requirements given in the Rules, the candidates shall be invited for a test and interview.
3. Considering the qualifications, experience, contributions to science and technology and performance in the test and interview, the candidates shall be ranked.
4. The ranked candidates shall be admitted to the programme based on the vacancies communicated by different departments/schools, and approved before publishing the notification.
5. Admitted candidates shall be allotted research supervisors based on their specialization and availability of supervisors.
6. Doctoral committees shall be formed by the research supervisors in consultation with the Heads/Deans concerned and with the approval of Dean/Coordinator (Research).
7. The candidates shall be permitted to provisionally register based on the recommendations of Zeroth DC meeting, which shall also suggest subjects to be taken up for the course work in the first semester.
8. The candidates shall carry out literature survey in the second semester and appear for a comprehensive viva-voce, on successful completion of which their registration is confirmed.
9. On successful completion of all those mentioned in 7 and 8 as per the rules, the candidate is expected to carry out research as per the guidance of the supervisor and the recommendations of the Doctoral Committee.

10. On completion of the research work and publication of required number of papers, the candidates shall submit a synopsis, which is to be presented before the DC/ Experts and got approved.

11. The thesis shall be submitted following the template prescribed and conducting the plagiarism check within six months of submission of synopsis.

12. After the evaluation by the examiners, an open viva-voce is conducted and degree recommended based on the performance/recommendation of the Oral Examination Board.

Ph.D. Regulations of the Institution in alignment with UGC Guidelines are given at https://karunya.edu/research/regulations.

The Institution expects good quality publications based on the research being conducted as part of Ph.D./M.Tech. and other postgraduate programmes. If any special facilities for research work are required, it shall be brought to the notice of Dean/Coordinator (Research). The list of publications emerging out of Ph.D., M.Tech. and other postgraduate programmes shall be communicated with a copy of the paper to the Dean/Coordinator (Research) by the Heads/Deans.

7. RESEARCH INTEGRITY AND GOVERNANCE

All those involved in research in the Institution have a duty to the public, and, to the Institution to conduct research in the most conscientious and responsible manner possible. The Institution expects all those engaged in research to observe these principles irrespective of their sources of funding or their area of research. This is expected to enhance research quality, integrity and compliance. These policy statements shall be taken together with the policies of UGC and other Government bodies as well as that of the specific funding agencies. All research works shall comply with relevant rules and statutes with regard to human rights, data protection, human tissue, mental capacity, safeguarding vulnerable groups, etc. The UGC guidelines take care of these aspects to a great extent. Separate policy statements/rules of the Institution on some of these aspects also may be referred to, especially pertaining to human/animal ethics.

Researchers shall be conscious of their actions and intentions when undertaking research and in their responses and intentions towards the research of others. This is applicable to the entire gamut of research activities, such as experimental design, data collection and analysis, publishing and storing the results, acknowledging the contribution of others and activities related to reviewing and editing the works.

Researchers shall inform the funding body of any intention to publish or disseminate research findings, unless the terms of the award state otherwise. All those included as authors of a paper must be familiar with the paper and well aware of his/her contribution to it. The main authorship and other credits shall depend on the relative scientific or professional contribution of the individuals involved. Plagiarism, deception, fabrication or falsification of results are to be avoided and shall lead to disciplinary action. All contributions and collaborations shall be properly acknowledged, including the funding sources. The retention of research data shall be viewed from a project to project basis and consider the legal framework, requirements of sponsoring agency and the ethical sensitivity of data.

Researchers are expected to understand and apply the following:

- Plagiarism, deception or the fabrication or falsification of results shall attract serious disciplinary action as per rules.
- Researchers shall report cases of suspected misconduct in a responsible and professional manner as described in the regulations.
- Researchers shall declare and manage appropriately any real or potential conflicts of interest either of a financial or professional nature.

KITS encourages researchers to be as open as possible in discussing their work with other professionals and the public. Once results have been published, the Institution expects researchers to make available relevant data and materials to other researchers on request if it does not come on the way of data protection and IPR.

The Institution recognizes that publication of results need to be delayed for a reasonable period pending protection of any intellectual property arising from the research. The IPR rule of the Institution may be referred to in this regard.

The Institution owns any intellectual property arising out of research unless otherwise agreed with a funding body. Researchers shall consider the potential of the intellectual property arising from their research and take reasonable measures to protect any such intellectual property. Researchers shall be fully aware of the IPR policy of the Institution.

8.   CONSULTANCY PROJECTS

KITS encourages faculty to undertake consultancy work. Stress is given to consultancy works that have a R&D component in them and that have value to the society. The Institution is keen to have industrial collaborations and to take up consultancy projects useful for industries. Such projects give an exposure to the faculty to understand the real field problems and solutions to them.

The Institution also encourages the faculty to take up routine or non-routine testing projects, which are required by industries/utilities for the performance evaluation of their specific products. The testing projects call for utilization of the laboratory facilities. KITS already has a laboratory accredited by NABL in the Department of Food Processing Engineering, which can certify the quality of oil products.

Each consultancy project will have a Coordinator, who can be the Head, Dean or a Team Leader and a consortium of experts from within the Institution or outside organizations. The industrial organizations have to initially approach Dean/Coordinator (Research) who in consultation with other relevant faculty/experts will help the team to decide whether the work has to be taken up and also in selecting the team members. The technical and financial offers based on the ToR shall be approved by Dean/Coordinator (Research) after discussions with Head/Director and other administrative authorities depending on the type and magnitude of work.

The responsibility for completing the work on time to the satisfaction of the principals and submitting the interim report and final report on time depends on the Team Leader and the Head/Dean of the Department/School concerned. A copy of the interim report and final report shall be submitted to Dean/Coordinator (Research) by the Team Leader of the consultancy project. Rules and regulations with regard to consultancy works shall be followed by the team/coordinator.

9.   COLLABORATIONS WITH UNIVERSITIES, R&D INSTITUTION AND INDUSTRIES

KITS recognizes the importance of networking with other reputed academic institutions, R&D organizations and industries. Such collaborations are mutually beneficial and will help in enhancing the academic, research and development and extension goals.

The academic collaborations will lead to faculty exchange programmes, introduction of joint research programmes, support for curricula development, apart from formulating and implementing joint conferences. Students can carry out research activities also in such institutions. The faculty of both the institutions can also collaborate and cooperate in academic and research activities, apart from spending the Sabbatical leave in the institutions with which they have collaborative programmes. These collaborations also help in many ways leading to mutual visits for academic and other related purposes. For reinforcing such links, it is suggested that both the institutions enter in to a MoU with certain general conditions and later enter in to mutual agreements for specific academic and research programmes showing the components of academic or research works, subject to the norms of the statutory bodies and the financial commitments. They may also initiate joint projects and seek for funding from national or international agencies.

The possibility of entering into MoUs with reputed government and private R&D institutions also may be probed by different Departments/Schools in their areas of interest. Such collaborations can lead to joint research projects, joint technical events and conducting practical training programmes and certificate/diploma courses. The facilities available in both the organizations can be shared and the scientists from R&D organizations help in giving a new dimension to research / teaching programmes. Some of these organizations can also serve as incubation centres. KITS as such or a Institute/School of the Institution may enter into MoUs with such organizations.

Industrial collaboration is an essential component in the context of industry-academia connect having engineering, management, science and agriculture programmes. Such collaborations shall lead to opportunities for students for training, carrying out project/research works, and getting placement. Such collaborations also may help in solving practical problems by the academicians. The technical/management staff of the industrial houses can pursue higher studies in KITS. Some of the experts working in the industry can share their practical knowledge with the student community and also the faculty. Appropriate MoUs may be signed with potential and relevant industries by the Departments/Schools.

The MoUs to be signed for research and industrial purposes shall be drafted in consultation with Dean/Coordinator (Research). The follow-up actions on the MoUs shall be monitored by one senior level nodal faculty/staff from both the organizations. The outcome of research/training from such MOUs shall be reported to Dean/Coordinator (Research) from time to time and included in the minutes of DRC/SRC. The collaboration and MoUs with those organizations abroad shall be approved by the Vice Chancellor and reported to BRC and BoM.

If the activities of an organization is of interest to a Department/School and if the authorities are convinced that the organization possesses good laboratory facilities, instruments/equipment, library and also qualified staff and research environment, such organization can be considered as an incubation or experimental study station for carrying out research works. The students can make use of their facilities for training and experimental studies. The procedures for recognizing such incubation centres are given below:

- The institute has to apply in the proforma prescribed by KITS for entering in to MoU
- Based on the information provided by the institute and remarks of Dean/Coordinator (Research), the BRC/ Chairman of BRC may decide whether to proceed further with the request from the institute
- Thereafter, Dean/Coordinator (Research) with a team of experts, including Dean/HoD concerned, from the Institution may visit the institute and obtain a firsthand information on the infrastructure, facilities and expert manpower available in the institute
- A final decision will be taken by the BRC and other relevant bodies of KITS.
- Thereafter, the institute may enter in to a MoU with KITS.

10.   CENTRES OF SPECIALIZED RESEARCH AND INSTITUTES

KITS may establish Centres of Specialized Research within the campus whenever such needs are recognized. Such Centres are established to fulfill the vision, serve the emerging trends in science, technology, management, environment and agriculture fields and also to cater to the social commitment of KITS. Such Centres shall be manned by reputed experts and equipped with state-of-the-art instruments and facilities to carry out coordinated research. These are also considered as common facility for those involved in inter-disciplinary research. The Centres shall function in relevant Departments/Schools under the guidance of the Heads of such Centres of Specialized Research. Depending on the requirements, Centres may be established in the areas of interest of KITS as a first step towards establishing them as Centres of Excellence.

As a follow-up of the vision of KITS, the Water Institute was established in 2008 to serve as a Centre of Excellence, catering to the academic, research, extension and training requirements in the area of Water. With the availability of more facilities and faculty, the possibilities for establishing Centres of Excellence in other thrust areas of KITS may also be probed.

Centres also may be established with the support and cooperation of industries within the campus, similar to the Karunya-Siemens Center, for training, consultancy, research, product development and extension activities.

11. ORGANIZING NATIONAL AND INTERNATIONAL CONFERENCES

KITS encourages the Faculty/Departments and Schools to organize national and international events such as conferences, seminars, workshops, etc for transfer of technology. The major objectives of such events shall be interaction among peers, experts, transfer of technology, review of state-of-the-art, highlighting emerging technologies, tools or trends, bringing to light the contribution in the areas of science, technology, environment and humanities. However, necessary funds have to be mobilized or sanctioned in advance before the first announcement is made and papers and participants are invited. The preparation for an international event shall start at least 12 months in advance and such events shall have at least a few papers contributed by experts in the field from other countries. This activity shall commence only after submitting a detailed proposal and getting it approved by the BRC. As far as possible, the event shall be included in the Institution Calendar. The preparation for a national event shall start at least 9 months in advance and such an event shall be attended by minimum of two dozen experts in the field from different parts of the country. This activity shall commence only after submitting a detailed proposal and getting it approved by Dean/Coordinator (Research) who will report it to the BRC. The organizers shall form appropriate committees with proper representation. Copies of brochures, proceedings, etc shall be made available at the office of Dean/Coordinator (Research) for record and reporting to the BRC.

12. PARTICIPATION IN CONFERENCES AND WORKSHOPS

KITS motivates the faculty members to participate in international, regional, national and local conferences and workshops as resource persons. They are permitted to serve as advisory/organizing committee members, chairpersons at technical/scientific sessions, and as delegates presenting papers. The faculty members are also given Special Casual Leave to attend such events, which are found to be relevant to their fields of specialization and interest. The Institution extends financial support to those serving as resource persons, chairpersons, paper presenters as per the rules, if the organizers do not meet the expenses for travel, registration and accommodation. In the case of international conferences, KITS makes available part of the expenses, provided that the participation in the event is found to be useful for the faculty member and the Department/ School to which he/she belongs.

Students are also encouraged to attend technical events and present papers, models, etc. Depending on the event and purpose of participation, KITS provides them financial assistance for travel and registration as per the rules.

13. PUBLICATION OF JOURNALS/ WORKING PAPERS/MONOGRAPHS

KITS has been publishing Karunya Research Journal in the past. The objective of this publication is to encourage and promote multidisciplinary research covering engineering, technology, science and humanities among the teaching and research fraternity in India and the world over.

Multidisciplinary research integrates the analytical strength of two or more disciplines so as to come up with a new research phenomenon or a novel discipline. By engaging these seeming disciplines, similar terminology, approach, and methodology might be gradually interconnected. Such research activities kindle more innovation and profound findings. Though a lot of avenues are made available in this area for research, it has not gained momentum in India. In this context, a journal relevant to this idea is likely to be well-received.

Apart from this, the Institution is planning to bring out specialized journals in the focal areas. The Institution also encourages the Departments/Schools in bringing out Working Papers in specific areas.

The faculty and students of KITS are working in certain thrust areas and several contributions have been made in some of these areas. Such works are to be compiled and brought out as Monographs of KITS to enable transfer of technology and promotion of further research in these areas. Some of these can be also considered for copyright.

14.   RESEARCH FELLOWSHIPS

Twenty-five Silver Jubilee Fellowships were announced apart from the recently instituted Evangeline Dhinakaran Doctoral Fellowship for Ph.D. Scholars. The Fellowships are made available to suitable candidates after a detailed selection process. The JRFs/SRFs attached to funded projects are also encouraged to carry out Ph.D. programme at KITS. PDF programme is also planned in future for competent candidates to do research in the thrust areas of KITS.

15.   SHORT TERM RESEARCH GRANTS / SEED MONEY FOR RESEARCH

The Institution provides Short Term Research Grant (STRG) to junior faculty with an aim to encourage them to do research on project mode. The faculty members are encouraged to publish papers and file patents based on these STRG and to introduce their students to research work. In some cases, the STRG has helped to obtain a larger funded project from Government agencies / departments. Apart from this, seed money is provided to the faculty to carry out joint research with students from reputed institutions abroad who come under different programmes, mainly IAESTE.

16.   STUDENT RESEARCH GRANTS

Students carrying out research at Bachelor and Master levels are given grants to carry out their research work in partial fulfillment of their degrees. Several of these students have come out with publications in journals and proceedings. The grants are given based on the problems taken up for research/project work and the overall performance of the students in the past. Large number of students have availed such facilities in the past. Students are also provided grants from Harvard Medical School and Boston Children's Hospital for product development in the area of healthcare.

17.   RESEARCH INCENTIVES

Apart from Short Term Research Grants, KITS also provides award for publications in journals with impact factor and there are also schemes for travel, accommodation and registration fee for attending conferences and workshops. A

package of professional incentives are made available to the faculty members. Apart from that, certain criteria / credits have been evolved in connection with the performance-linked incentive schemes for awards, publications, paper awards, generation of funds through projects, additional administrative assignments, and quality enhancement activities. These incentives are expected to encourage the faculty members to focus more on research and consultancy works. Incentives will be provided to the faculty members involved in fund mobilization through research and consultancy projects, and also the entire cost of filing, publishing and granting of patents are borne by the Institution.