SRM Institute of Science and Technology

SRM Nagar, Kattankulathur 603203, Tamilnadu, India

Policy for Promotion of Research

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SRM Nagar, Kattankulathur - 603 203
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Policy for Promotion of Research

1. Preamble:

SRM Institute of Science and Technology (SRMIST) is committed to the pursuit of excellence in research and aiming to lead the national agenda across the spectrum of science and technology, humanities and social responsibilities. The research in broad terms referred henceforth includes all intellectual contributions – namely publication of research articles in scholarly journals, books, book chapters, case studies, research memos, conferences, and funded researches, sponsored researches etc., pursued by students, scholars and faculty members. SRMIST has formed University Research Council (URC) with eminent persons from industry and academia to advice on the research promotion. The institute ensures that all the core and inter disciplines flourish in research by adopting the highest norms and standards which may yield a long-term impact. The key focal point of this policy is to set the ground for sound and reliable research; so that, SRMIST emerges as an Intelligent Institution that nurtures research, its research incumbents and the research eco-system. This policy is implemented from with effect from 2017-18.

2. Objectives

Our core strategies are to tackle few of the pressing challenges of the 21st century in areas that are vital to the technological advances, human health, food security, environment security and unmet clinical needs using cutting-edge disruptive technology enabled innovations, through extensive core and multi-disciplinary research. SRMIST has made strenuous efforts to line-up its research focus with the national importance of achieving technological self-reliance. Our specific objectives are:

> To create, promote and sustain capacity building of human resources with a view to establish a resurgent research eco-system well supported with infrastructure and financial support.

> To enable inter-disciplinary and trans-disciplinary research having social impact through constant sharing of knowledge and collaborative works that would maximise the research diversity and efficiency among faculty members, research scholars, postgraduate students and undergraduate students.

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➢ To mentor and monitor the development of research models that aid in publishing research papers, monographs, research memos, case studies, books, book chapters, patents and transferable technologies that are publishable in high-quality peer reviewed publications.

➢ To harness the potential of a vibrant research eco system with a view to attract collaboration with industries, research organizations, governmental and non-governmental bodies that actively contribute to the betterment of under-served local communities, to the overall socio-economic growth of India and to serve the man kind at large.

➢ To promote joint research degree programs with reputed Indian and International Universities.

➢ To create in-house facilities that can nurture students and faculty to incubate their ideas for product development, scalability and commercialization.

➢ To incentivize the researchers to enhance their performance.

➢ To promote globalization of research and education through strategic alliances in the area of 'Prescription education' an interactive novel concept tailored to promote learning through technology-enabled tools.

3. General Principles

The General Principles include:

- Good Research Practice (GRP)
- Strong adherence to the guidelines and/or regulations in the best interest to protect the human, animal, flora and fauna, and other valuable resources of nature
- Proficiency in research and sound methodological approaches
- Collaborative and globally renowned research
- Authoritative knowledge in the functional areas of research
- Implementable research that are legally monetizable
- Impactful research
- Integrate to serve communities, industries and governments
- Strict adherence to the ethical codes and codes of honour in research

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GRP's steps include:
- Monitoring, training, and supervision of new researchers and continuing professional development.
- Regular checks on recorded data and notebooks.
- Occasional checks on the day-to-day conduct of experiments.

4. Planning the research

All research projects should be conceived, designed and implemented according to the standards.

- Clear documentation of the rationale for the study and any subsequent modifications, either in laboratory notebooks or in the project files. Each key document and any changes should be signed with the date by the researcher responsible for establishing the provenance of the study and protecting intellectual property rights.
- Adherence to the current safety practices and ethical standards.
- Securing all necessary ethical and regulatory approvals.
- Assessment of the resources needed to ensure the viability of the study within the available resources.
- Regular review of the research progress is essential to identify new findings that can be taken into account to modify the aims and the outcomes envisaged in the project.

5. Conducting the research

- The legal and ethical requirements relating to human participants, animals and personal information should be made familiar to each person involved in the study and they should know their advisors for resolving their queries; if any.

- Equipment used to generate data should be suitable for the purpose, of appropriate design and adequate capacity. It should be calibrated and serviced regularly by trained staff so that the performance is optimal and the results can be trusted.

- A standard operating procedure (SOP) should be maintained for each piece of equipment. There should be easily accessible instructions for the safe shutdown of equipment in an emergency.

- SOP should be documented for all routine methods to ensure that data are collected consistently. It should be written in simple language, readily accessible and ideally in a standardized format.

- There should be clarity at the outset of the research program with respect to the ownership and use of, wherever relevant:

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- Data and samples used or created in the course of research
- Results of the research

All raw data should be recorded and retained in indexed laboratory notebooks with permanent binding and numbered pages or in an electronic dedicated notebook. Machine printouts, questionnaires, chart recordings, autoradiographs etc. which cannot be attached to the main record should be retained in a separate ring-binder/folder that is cross-indexed with the main record. Records in notebooks should be entered as soon as possible after the data is collected. Recorded data should be identified by the date of the record and/or date of collection. Supervisors should regularly review and "sign-off" notebooks of researchers to certify that records are complete and accurate. Computer generated data should be backed-up regularly; duplicate copies should be copied on a disc in a secure but readily accessible archive. Wherever feasible, a hard copy should be made of important data. Copies of relevant software, particularly the version used to process electronic data, must be retained along with the raw data to ensure future access.

6. Openness

Whilst recognizing the need for researchers to protect their own academic and wherever appropriate their intellectual property rights (IPR), the institute encourages researchers to be as open as possible in discussing their work with other researchers and the public. The aim of disseminating research is to increase knowledge and understanding.

Once the results have been published, the institute expects the researchers to make the relevant data and the materials available to other researchers, on request. However, it should be reliable with any ethical approvals and consents which cover the data and materials, and any intellectual property rights associated with those publications. Procedures for managing the transfer of material in and out of the institute are outlined separately. It is recognized that publication of the results of research may need to be delayed for a reasonable period in order to protect the intellectual property arising from the research. Any such periods of delay in publication should be kept to a minimum and this should normally be no more than 3 months.

Researchers should be careful when discussing work that is not complete or has not been published, particularly if it has not undergone peer review. Exchange of confidential information by e-mail is not recommended, especially if patent applications are anticipated.

7. Professional guidance and legislation

The institute expects all researchers including students, trainees etc. to observe the standards of research practice set out in guidelines published by scientific and learned societies, and other relevant professional bodies.

All researchers should be aware of the legal requirements, which regulate their work noting particularly health and safety legislation as well as data protection.

8. Leadership and cooperation

Head of the institute and senior colleagues should ensure that a congenial atmosphere of mutual cooperation is created in which all members of a research team are encouraged to develop their skills where the open exchange of ideas is fostered.

9. Supervision

The Institute provides an appropriate direction of research and looks into the fact that research leaders are trained in supervisory skills. Research supervisors supervise all stages of the research process, including outlining or drawing up a hypothesis, preparing applications for grant and aid, protocol design, data recording and data analysis.

10. Training

The institute will plan periodic courses to enable students and researchers to understand and adopt best practices in research as quickly as possible. Supervisors should encourage students and colleagues to attend relevant courses whenever offered as a part of their overall career development. Some of the indicative courses are:

- Research design
- Regulatory and ethics approvals and consents
- Equipment use
- Record keeping
- Data protection
- Management of intellectual property, including confidential information
- Use of materials requiring statutory registration such as radioisotopes, pathogenic and genetically modified organisms
- Data analytics including hypothesis testing
- Data management
- Using animals for experiments
- Regulations involving human subjects
- Safety and good laboratory practices

11. Dissemination and publication of results-Publication Guidelines

The institute encourages publication and dissemination of results of high-quality research but believes that researchers must do this responsibly and with an awareness of the consequences of any such dissemination in the wider media.

Researchers should take into account the following guidelines when publishing or disseminate their research or research findings including any plans they may have to publish or publicize research in a conferences or in websites.

a) Researchers should make every effort to make sure that research is peer reviewed prior being published, publicized or disseminated.

b) All funding sources must be acknowledged in the publication.

c) Results of research should be published in an appropriate form, usually as scholarly

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articles in referred journals.

d) Anyone listed as an author in a research paper should accept responsibility for ensuring that he or she is familiar with the contents of the paper and can identify his or her contributionto it. The practice of honorary authorship is unacceptable.

e) The contributions of collaborators and all others who directly assist or indirectly support the research should be both specified and properly acknowledged.

f) Work should normally be published as a coherent entity rather than a series of small parts unless there is a legitimate need to demonstrate first discovery by publishing preliminary data.

g) Quality rather than quantity is paramount; the proliferation of multi-author papers to increase quantity should be discouraged.

h) Authors must not publish the same data in different publications (journals and conferences).

i) If an error is found that degrades the worth of published findings, the principal author must take efforts to publish a correction as soon as possible

j) Wherever the findings are found to be in serious doubt, a retraction should be published at the earliest.

k) Wherever fraudulence is suspected, it should be dealt with the procedure dealing with "Misconduct in research".

12. Intellectual Property

Researchers must inform the Intellectual Property Cell (Coordinator of the program or the Director) of any intellectual property rights arising from their research including externally funded research. Researchers must also inform the sponsoring agency if they have been recommended to do so.

The institute's research and the funding from government agencies is done for public benefit. However, industrially sponsored research programs with definite objectives of finding solutions may have commercial gains. The public benefit may arise from education, i.e., the gain of knowledge placed in the public domain, or the case of biomedical research, improvement in the treatment or care of patients or the prevention or cure of diseases. Government funding or sponsorship cannot be solely for the purpose of a commercial gain although commercial benefit from the exploitation of the research results may accrue to their inventors, the institute and by agreement to any research sponsor.

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13. Integrity

SRM Institute of Science and Technology provides an adequate structure to promote and promulgate good research practice, emphasizing integrity and rigor in research and expects that the researchers adhere to the highest standards of integrity. Researchers should be ethical and honest to their own course of actions while pursuing research and their responses to the actions of other researchers. This applies to the whole range of research activities including designing of experiments, generating and analyzing data, publishing results, reviewing the work of other researchers and applying for grants.

The direct and indirect contributions of colleagues, collaborators and others contributors should be appropriately acknowledged. Researchers are accountable to the society, their profession, the institutes where the research is taking place, the staff and students involved and in particular, the sponsoring bodies. Jeopardizing researchintegrity can collapse the advancement of knowledge, society and human health. Hence researchers are expected to understand and apply the following: plagiarism, deception, fabrication or falsification of results. These are regarded as a serious disciplinary offense. Researchers are encouraged to report cases of suspected misconduct, and to do so in a responsible and appropriate manner.

14. Conflict of Interest

A conflict arises when a person's judgment concerning a primary interest, such as scientific knowledge could be unduly influenced by financial gain or personal advancement.

Researchersmust pay as much attention to perceived and potential conflicts of interest as to actual conflicts.How one is perceived to act influences the attitude and action of others, and the credibility of scientific research to larger extent. Researchers should declare and manage any real or potentialconflicts of interest, both financial and professional. Areas of potential conflict include:

- Where researchers have an existing or potential financial interest in the outcome of the research.

- Where there is a personal or private practice benefit, significantly dependent upon the outcome of research.

- Where the researcher's professional and personal gain arising from the research may be more than usual for research.

15. Research Misconduct

SRMIST believes that the occurrence of misconduct is a threat to the basic principles of research. The Institution has put in place a mechanism for taking action on all allegations of misconduct, and shall ensure that the procedures for the inquiry, investigation and adjudication of any misconduct are defined as follows:

i. What constitutes research misconduct?

Research misconduct or fraud in science refers to the fabrication, falsification, plagiarism and deception in proposing, carrying out or reporting results of research and deliberate, dangerous or negligent deviations from accepted practice in carrying out research. It includes failure to follow established protocols if this failure results in unreasonable risk or harm to humans, other vertebrates or the environment. It shall also include facilitating of misconduct in research by collusion in or concealment of, such actions by others, and any plan or conspiracy or attempt to do any of these things.

Research misconduct does not include honest error or honest differences in interpretation or judgment in evaluating research methods or results, or misconduct unrelated to the research process.

ii. Reporting of cases of scientific misconduct:

a) All employees or individuals working within SRM Institute of Science and Technology are required to report observed, suspected or apparent Scientific Misconduct to the Head of the Department / Chairperson of the Research Coordination Committee (RCC) / Dean of the College / Dean (Research).

b) If an individual is unsure whether a suspected incident of misconduct falls within the definition of scientific misconduct, he or she should discuss this with the Head of the Department / Chairperson of the Research Coordination Committee (RCC) / Dean of the College / Dean (Research) informally.

c) SRM Institute of Science and Technology will endeavor to organize seminars and workshops at regular intervals to create awareness among the researchers on issues related to integrity in the conduct of research. The Institution website will provide access to articles, debates and examples of such misconduct to sensitize researchers about nature of questionable research practices.

iii. Reporting and evaluation of the complaint:

The charge of misconduct has serious implications for all concerned. Therefore, investigation related to the review of alleged misconduct will be kept confidential to the extent possible. While investigating an allegation of misconduct, caution should be exercised to distinguish between differences in interpretation or unintended errors from the misrepresentation of

information. Thus, the procedure adopted to address the issue of misconduct have to be flexible and determined on a case-to-case basis.

a) Reports of alleged misconduct are to be made directly to the office of the Head of the Department / Chairperson of the Research Coordination Committee (RCC) / Dean of the College / Dean (Research).

b) If a complainant makes an allegation to Head of the Department / Chairperson of the Research Coordination Committee (RCC) / Dean of the College / Dean (Research) informally, the authority may ask them to put such allegation in writing.

c) The identity of the complainant shall not be revealed at this time.

d) The Head of the Department / Chairperson of the Research Coordination Committee (RCC) / Dean of the College / Dean (Research) shall, either himself or through an officer delegated the responsibility, to investigate / assess the allegations of research misconduct to determine if they fall within the definition of research misconduct and warrant an inquiry on the basis that the allegation is sufficiently credible and specific so that potential evidence of research misconduct may be identified, and oversee enquiries and investigation.

e) A preliminary evaluation of the complaint will be made by the authority, which may include consultation with other colleagues either independently or through the constitution of a committee and if the findings indicate that there are no reasonable grounds for the allegation, the complaint will be dismissed.

f) Written report stating the reasons for the dismissal shall be policy documented and maintained in the respective office, but will not enter the complainant's confidential file. The complainant will also be informed of the decision to dismiss the complaint.

g) If the preliminary evaluation indicates that the allegation of misconduct warrants a full investigation, the following processes will be initiated with the appropriate records of procedures.

iv. Investigation:

a) The person against whom the complaint is being made (respondent) will be informed of the allegation.

b) The Head of the Department / Chairperson of the Research Coordination Committee (RCC) / Dean of the College / Dean (Research) will appoint a committee to conduct a full investigation into the allegations of misconduct.

c) The committee will comprise of a chairman, and 2 members. If necessary, experts from outside also can be included. The committee will be invested with complete confidentiality and will not be permitted to interact other faculty members individually during the course of the investigation, unless it is essential. The committee is expected

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to function within the full cognizance of the rights of the respondent as well as the complainant.

d) The scope of the committee shall be:
   i   To investigate the accuracy of charge of misconduct.
   ii   To assess the extent and nature of alleged misconduct.
   iii The relevance of any other material or information revealed during the course of the investigation into the alleged instance of misconduct.

v. Process of enquiry:

The committee will be given access to material that is required to complete the investigation with due diligence and accuracy which will include grant approvals, reports, primary data, electronic records, manuscripts and any other material requested and considered relevant to the investigation. The committee will be given access to laboratory and will be permitted to interview the complainant, the respondent and any other laboratory staff which the committee considers necessary to gather information. The committee is expected to complete the investigations and report submission within a period of 60 (sixty) days.

vi. Outcome of the investigation.

a) The committee will submit its report with a recommended course of action to the authority and to the higher authority within a week of completing the inquiry, explaining the modalities of the investigation, the source and method of obtaining information relevant to the investigation, the conclusions reached and the basis on which the conclusions are reached.

b) A copy of the report will be provided to the respondent and an opportunity given to him to comment in writing on the report and its findings within 15 days. The written comments will be attached as annexure to the original report.

c) The authority will discuss the report with the higher officials. If the faculty / researcher against whom the complaint was lodged has been proved to have engaged him in research misconduct, the officials will take appropriate action, with the approval of the Vice Chancellor, which will be communicated to the Individual and will be entered in the personal file and service book.

d) The individual may appeal to the Vice Chancellor against the decision of the concerned authority and the Vice Chancellor's decision will be final and binding on the individual.

vii. Safeguard against false allegations.

Efforts should be made to safeguard the interests of the complainant. If it is established that the complaint itself was false and was done with malaise intentions, the authority will formulate an appropriate action against the individual who lodged a false complaint. The person who has been charged with wrong allegations may appeal against the decision to the Vice Chancellor. The decision of the Vice Chancellor is final and binding on the individual.

16. Publication Guidelines Oversight Committee

SRM Institute of Science and Technology (SRMIST) promotes high-quality research leading to publications and patents of high standard. In order to maintain the standard in Publications and Patents, SRMIST has constituted a Publication Guidelines Oversight Committee with the following members:

Dean, Research, Chairman and Secretary
Dean, Medical Research
Dean, College of Engineering and Technology
Dean, Science and Humanities
Dean, College of Pharmacy
Dean, School of Management
Dean, College of Agriculture
Dean, School of Law

The committee will meet every semester and oversee the implementation of UGC Regulations to promote Academic Integrity and prevent Plagiarism in Higher Education. This committee will also play an advisory role to facilitate compliance to essential ethical practices to all concerned in publications. Ethical oversight should include, but is not limited to, policies on consent to publication, ethical conduct of research using animals, ethical conduct of research using human subjects, handling confidential data and ethical business/marketing practices.

17. Initiatives for Promotion of Research

SRMIST have taken various initiatives over the years to promote research and innovation amongst researchers to substantially enhance the research outcomes and to mobilize the available knowledge resources for an outcome-based education, research, innovation and socialempowerment.

The following are the schemes undertaken by SRMIST:

a) **Seed Money:** Financial assistance is given to the faculty members to carry out proof of concepts in the lab. With the proof of concepts, they can apply for funded projects from Government Funding agencies. Also, financial assistance is given to establish/upgrade the lab facilities for capacity building and knowledge up-gradation. In addition, financial assistance is given to faculty members for research and innovation to enhance the IP portfolio through Pilot Project Funding and Selective Excellence Initiative Program.

b) **SRM Central Instrumentation Facility (SCIF):** SRMIST is continually investing and setting up laboratories and state of art facilities in addition to enhancing the lab equipmentand software on a regular basis so that faculty members are actively encouraged to undertake high value, world-class research projects from various government and privatesector.

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c) **High-Performance Computing Cluster (HPCC):** HPCC is established to promote the computational research in different scientific and technological areas to solve the current and future challenges for the betterment of humanity. Training Program, creating e- learning database and series of hands-on session are being organized to develop computational skills among the students and faculty.

d) **Centres of Excellence / Research:** SRMIST supports research through twenty four centres of research in niche areas of national importance.

e) **SRM Innovation Incubation and Entrepreneurship Centre (SIIEC) and Fabrication(FAB) lab:** SIIEC is established for aspiring entrepreneurs to turn their innovative ideas into thriving ventures. The centre makes provision for resources and constructive criticisms all while viewing it through the prism of reality. FAB lab is a multipurpose platform for all kinds of engineering to take shape, to fuel innovation and entrepreneurshipand engineer ideas into reality.

f) **Research Excellence Undergraduate Program (REUP):** The idea is to train undergraduate students to become future graduate students and researchers. It is believed that this program will have the greatest impact if the undergraduate students are led from a relatively dependent status to become more independent researchers as a result of participation in this program.

g) **Semester Abroad Program (SAP):** Under the Semester Abroad Program the students areallowed to take-up a few courses and /or a Major project in reputed foreign universities forONE semester. The credits earned in the foreign university through the SAP will be translated into SRM credits, by an approved conversion procedure, and taken for consideration for the award of the degree by SRMIST.

h) **Faculty Abroad Program (FAP):** This initiative contributes the faculty members to enhance learning and research capability at SRMIST.

i) **Faculty Industry Immersion Program (FIIP):** The faculty members are permitted to goand interact with industry during summer/ winter vacation for 2 to 3 weeks and keep themselves updated with state of art and cutting-edge technologies in their domain.

j) **Research Day:** Every year, Research Day is celebrated on 28th of February. The faculty members and the students present their research papers separately in their respective departments and the best papers are awarded Gold and Silver medals. The selected papersare sent to the National/ International journals for publication.

k) **Patents filling support:** Financial assistance is given to the faculty members and studentsto get patents for their innovative ideas/products. A special patent office with experiencedofficials support / assist the inventors through the filing process.

l) **Publication Support Grant:** In order to encourage the faculty members to publish in highimpact journals (Q1 journals), requests from members for the publication

charges are considered.

m) **Research Publication Incentives:** In order to strengthen the high-quality scientific publication of SRMIST, incentives are provided to the faculty members for publications in the SCOPUS and SCI indexed journals.

n) **Incentives for Patents / Research Projects / Books / Book Chapters / Consultancy:** Inorder to strengthen the high-quality research, incentives to faculty members will be provided for Patents / Research Projects / Books / Book Chapters / Consultancy.

o) **Career Advancement and Salary Increment Benefits:** To promote research, SRMIST is having a unique scheme for faculty promotion/ career advancement / salary increment in which their research accomplishments, achievements and impactful outcomes are taken into consideration in addition to their incentives.

p) **Sponsoring Professional Development Activities:** Financial support for attending conference / seminars / workshop / other professional developmental activities etc., shall be as per entitlement, which will be reimbursed on submission of appropriate document evidence such as event registration details etc. For the reimbursement of membership feesof the professional bodies, the payment proofs and the copy of the membership certificates are to be furnished along with the application reimbursement.

q) **Fee Concession:** Fee concession on Ph.D. fees for faculty and staff members

r) **Study Leave / Sabbatical Leave:** Study or sabbatical leaves can be availed as per SRMIST service rules for carrying out advanced research and pursuing higher studies.

s) **Stipend for Research Scholars:** Robust and strongly funded Ph.D. and Post-Doctoral positions are offered to qualified full time research fellows. The amount of stipend/fellowship is subjected to revision periodically as per the norms of the institution.

t) **Stipend for M.Tech Students:**
To encourage post graduate research, monthly stipend is given to all full time M.Tech students.

u) **Collaborative Research:** MoUs have been signed with universities and companies for collaborative research.

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