

KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

Indian Institute of Science Campus, Bengaluru - 560012

REPORT ON 45th SERIES OF STUDENT PROJECT PROGRAMME (SPP)

STUDENT PROJECT PROGRAMME (SPP)

KSCST initiated Student Project Programme (SPP) during 1978–79 to support innovative engineering student projects to improve the quality of education in technical institutions. The SPP program has been playing a very important role in engineering education for the last forty-five years and has become a flagship program of the Council. Products, Services, Innovation and technologies are needed for self-reliance, sustainable development and livelihoods.

The main purpose of this program is to bring out the hidden talent and innovative spirit of young engineers graduating from colleges across the State. Under this program, the Council has been providing both technical and financial support to selected projects undertaken by the final year students of science and engineering colleges across the State. KSCST has been playing a crucial role in building confidence and enhancing the capabilities of engineers graduating from the colleges in the State. So far KSCST has conducted 44 series of uninterrupted events under SPP and since inception supported more than 13,800 projects of engineering and science students.

Many projects, sponsored under this program, deal with technology applications relevant to the State. This process has been ably assisted by more than hundred faculty and scientists of Indian Institute of Science (IISc), National Aerospace Laboratories (NAL), Central Manufacturing Technology Institute (CMTI), Karnataka State Council for Science and Technology (KSCST) and experts from various other research institutions and government departments. The Student Project Program of KSCST has attracted the attention of various incubation centers of engineering colleges, start-ups and technologists in the country.

The work discipline acquired by students in evolving and executing their projects, improves their analytical method and technical capabilities enabling better performance as professionals. The sponsorship, by Karnataka State Council for Science & Technology, has become a benchmark of quality for engineering student projects and these projects have been recognized and valued by both academic and industrial communities.

In this program, several completed projects have also been identified as promising and having commercial potential. Concerned faculty/students of such projects are encouraged to go ahead for further modification wherever required and to take-up field trials or for scaling up. Projects have always been diverse, reflecting the varied interests of the students/guides and some of them are found to be very innovative.

45th Series of Student Project Programme (SPP):

KSCST had invited project proposals from final year students of engineering colleges across the State. As per the recommendations of the experts committee, project proposals were invited during November 2021 from the final year BE, M.Tech, M.Sc, M.Tech/M.Sc. (Agriculture) & MBA students for sponsorship, under the 45th series of Student Project Programme (SPP).

The following are the broad themes / areas provided by the experts committee for project proposal:

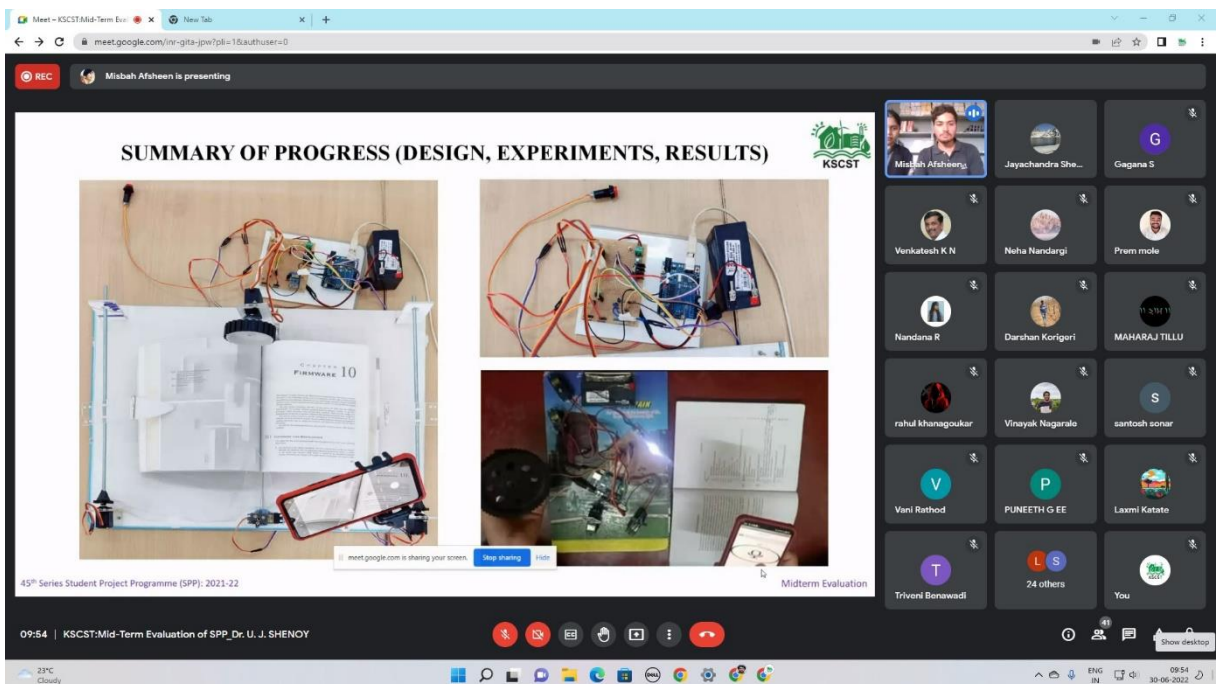
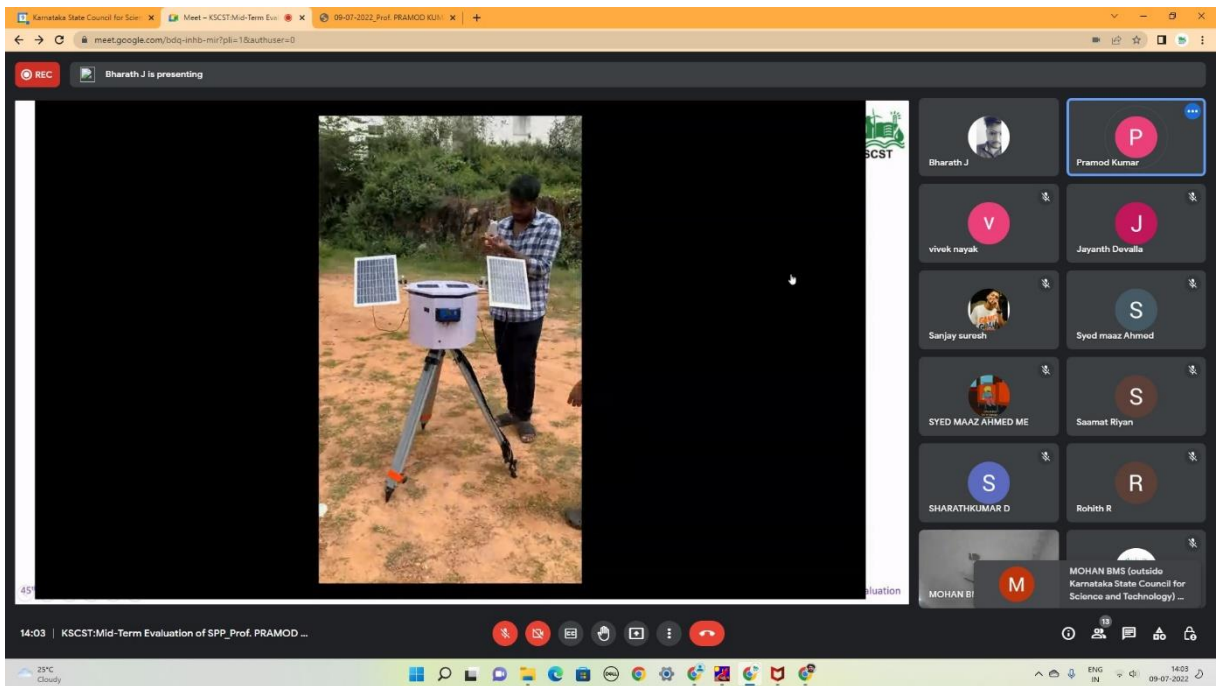
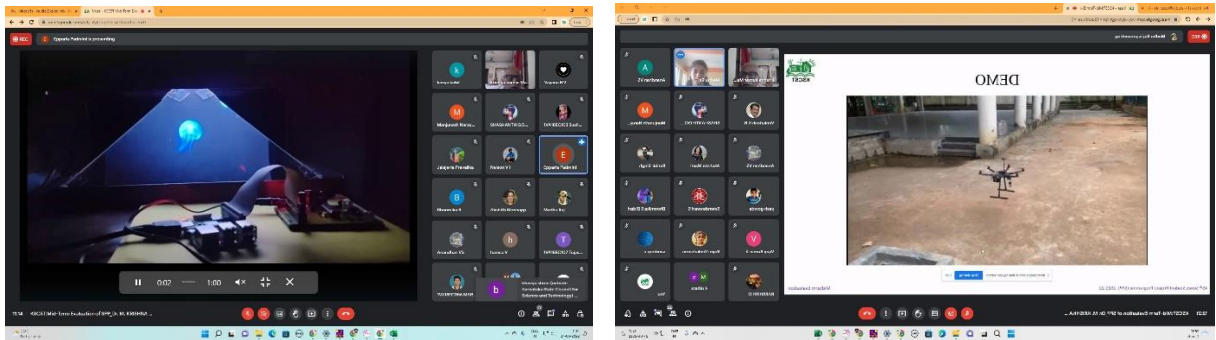
1. Non-conventional and / or composite building materials / structures
2. Low-cost modified transport system for village / rural / disabled community
3. Low-cost, eco-friendly potable water filtration
4. Automation or new concepts in agriculture (cultivation, raising crops, irrigation etc.)
5. User friendly devices for aged or physically challenged people
6. Robotics / 3D printing / Cyber security
7. Innovative materials for acoustics and noise Control
8. E-Learning Technologies to villages / panchayat levels
9. Bioenergy / Solar energy application at villages
10. Domestic bio / non-bio waste treatment / recycling
11. Newer techniques in Air Pollution control
12. Newer techniques in treating domestic sewage / industrial effluents
13. Electro-Chemical Devices (Fuel Cells, Capacitors, Batteries, etc.)
14. Technologies relevant in the aftermath of Covid-19.

With these broad themes, KSCST received 5,191 project proposals from various disciplines from over 192 engineering colleges, universities and institutions across the State. These project proposals were scrutinized by experts from Indian Institute of Science, Karnataka State Council for Science and Technology (KSCST), National Aerospace Laboratories (NAL), Central Manufacturing Technology Institute (CMTI) and other institutions and have approved 1,230 project proposals to 170 engineering colleges across the state with a financial support Rs. 80,21,800/- (Eighty Lakhs Twenty-One Thousand Eight Hundred).

The sponsored 1,230 projects were evaluated by various subject experts through online mode (Google Meet) from 27th June 2022 to 10th July 2022 during the mid-term evaluation. The evaluation primarily focused on the methodology and the interim output of the projects.

The evaluators recommended 332 projects for state level Seminar and exhibition (142 projects for Seminar and 190 projects for Exhibition) scheduled to be held at VTU, Belagavi. One hundred twenty engineering colleges are being represented in the final event in the State.

Glimpses of midterm evaluation conducted online



The details of projects selected for the seminar and exhibition branch wise is as follows:

Sl. No.	Branch	No. of Projects Received	No. of Projects Approved	No. of Projects Selected for Seminar	No. of Projects Selected for Exhibition
1.	AERONAUTICAL ENGINEERING	61	17	2	3
2.	AEROSPACE ENGINEERING	3	1	1	-
3.	APPLIED GENETICS	1	-	-	-
4.	AUTOMOBILE ENGINEERING	27	4	-	1
5.	BIG DATA ANALYTICS	6	3	-	-
6.	BIOCHEMISTRY	18	6	-	-
7.	BIOCHEMISTRY AND BIOTECHNOLOGY	1	-	-	-
8.	BIOMEDICAL ENGINEERING	19	4	-	-
9.	BIOTECHNOLOGY	89	27	8	4
10.	BOTANY	4	2	-	-
11.	CHEMICAL ENGINEERING	38	11	3	2
12.	CHEMISTRY	18	6	3	1
13.	CIVIL ENGINEERING	707	179	27	13
14.	COMPUTER AIDED DESIGN OF STRUCTURES	1	-	-	-
15.	COMPUTER APPLICATIONS IN INDUSTRIAL DRIVES	1	-	-	--
16.	COMPUTER ENGINEERING	1	-	-	-
17.	COMPUTER INTEGRATED MANUFACTURING	1	1	-	-
18.	COMPUTER NETWORKING	1	-	-	-
19.	COMPUTER SCIENCE	2	-	-	-
20.	COMPUTER SCIENCE AND ENGINEERING	1032	219	27	32
21.	COMPUTER SCIENCE AND ENGINEERING - INFORMATION SECURITY	5	-	-	-
22.	CONSTRUCTION TECHNOLOGY AND MANAGEMENT	2	1	-	-
23.	DIGITAL COMMUNICATION AND NETWORKING	4	-	-	-
24.	DIGITAL ELECTRONICS AND COMMUNICATION SYSTEMS	1	-	-	-
25.	ELECTRICAL AND ELECTRONICS ENGINEERING	386	70	3	16
26.	ELECTRONIC SCIENCE	1	1	1	-
27.	ELECTRONICS AND COMMUNICATION ENGINEERING	1049	206	12	43
28.	ELECTRONICS AND INSTRUMENTATION ENGINEERING	54	15	1	1
29.	ELECTRONICS AND TELECOMMUNICATION ENGINEERING	16	7	-	1
30.	ENGINEERING ANALYSIS AND DESIGN	1	-	-	-
31.	ENVIRONMENTAL ENGINEERING	17	4	3	-
32.	FASHION AND APPAREL DESIGN	1	-	-	-
33.	FINANCE	4	2	-	-
34.	FINANCE AND MARKETING	1	-	-	-
35.	FOOD AND NUTRITION	2	1	-	-
36.	FOOD PROCESSING AND NUTRACEUTICAL	2	-	-	-
37.	FOOD SCIENCE AND TECHNOLOGY	4	1	-	-
38.	FOOD TECHNOLOGY	1	1	-	-
39.	FOOD TECHNOLOGY AND QUALITY MANAGEMENT	2	1	-	-
40.	FORENSIC SCIENCE	1	-	-	-
41.	HUMAN RESOURCE	3	-	-	-
42.	HUMAN RESOURCE AND ENTREPRENEURSHIP	1	1	1	-
43.	HUMAN RESOURCE AND FINANCE	2	-	-	-

44.	HUMAN RESOURCE AND MARKETING	1	1	-	-
45.	HYDRAULICS	3	1	-	-
46.	INDUSTRIAL AND PRODUCTION ENGINEERING	4	1	-	-
47.	INDUSTRIAL ELECTRONICS	1	1	-	1
48.	INDUSTRIAL ENGINEERING AND MANAGEMENT	5	2	-	1
49.	INFORMATION SCIENCE AND ENGINEERING	483	111	7	20
50.	INFORMATION TECHNOLOGY	1	1	-	-
51.	INTERDISCIPLINARY - PHYSIOTHERAPY AND BIOTECHNOLOGY	1	-	-	-
52.	INTERDISCIPLINARY - CIVIL AND ECE	1	1	-	-
53.	INTERDISCIPLINARY - CSE AND ISE	1	-	-	-
54.	INTERDISCIPLINARY - ECE AND ISE	1	-	-	-
55.	INTERDISCIPLINARY - MECH AND ECE	1	1	-	1
56.	LIFE SCIENCES	1	-	-	-
57.	M.VOC FOOD PROCESSING AND NUTRACEUTICALS	1	-	-	-
58.	M.Voc FOOD TECHNOLOGY AND QUALITY MANAGEMENT	1	1	-	-
59.	MACHINE DESIGN	6	2	-	-
60.	MANAGEMENT STUDIES	5	3	-	-
61.	MANUFACTURING SCIENCE AND ENGINEERING	1	1	1	-
62.	MARINE ENGINEERING	5	1	-	-
63.	MARKETING	3	1	1	-
64.	MARKETING AND FINANCE	3	1	-	-
65.	MASTER OF BUSINESS ADMINISTRATION	52	19	4	-
66.	MASTER OF COMPUTER APPLICATIONS	28	3	-	-
67.	MASTERS IN IT	1	-	-	-
68.	MECHANICAL ENGINEERING	820	241	30	39
69.	MECHATRONICS	30	6	1	2
70.	MEDICAL ELECTRONICS	11	3	-	1
71.	MICROBIOLOGY	22	4	-	-
72.	MOLECULAR AND CELLULAR BIOLOGY	1	1	-	-
73.	ORGANIC CHEMISTRY	2	-	-	-
74.	PHYSICS	11	1	1	-
75.	POLYMER SCIENCE	3	1	-	-
76.	POLYMER SCIENCE AND TECHNOLOGY	2	1	-	1
77.	POWER AND ENERGY SYSTEM ENGINEERING	1	1	-	-
78.	POWER ELECTRONICS	1	-	-	-
79.	POWER SYSTEM ENGINEERING	1	-	-	-
80.	PRODUCT DESIGN AND MANUFACTURING	4	3	1	-
81.	SILK TECHNOLOGY	1	1	-	-
82.	SOFTWARE ENGINEERING	4	4	-	1
83.	STRUCTURAL ENGINEERING	25	5	2	-
84.	TELECOMMUNICATION ENGINEERING	47	14	2	5
85.	TEXTILE TECHNOLOGY	2	1	-	1
86.	VLSI DESIGN AND EMBEDDED SYSTEMS	2	-	-	-
	Total	5191	1230	142	190



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Karnataka State Council for Science and Technology

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DST - GOI

STUDENTS PROJECT PROGRAMME

(SPP - 45th SERIES : 2021 - 2022)

KSCST invites project proposals from the final year BE, M.Tech, M.Sc., M.Tech / MSc (Agri) & MBA students for sponsorship, under the 45th series of Student Project Programme.

The project proposals can be submitted from 15th November 2021 to 15th January 2022.

The submitted projects shall mandatorily be from one of the broad themes / areas as below:

1. Non-conventional and / or composite building materials / structures
2. Low-cost modified transport system for village / rural / disabled community
3. Low-cost, eco-friendly potable water filtration
4. Automation or new concepts in agriculture (cultivation, raising crops, irrigation etc.)
5. User friendly devices for aged or physically challenged people
6. Robotics / 3D printing / Cyber security
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8. E-Learning Technologies to villages / panchayat levels
9. Bioenergy / Solar energy application at villages
10. Domestic bio / non-bio waste treatment / recycling
11. Newer techniques in Air Pollution control
12. Newer techniques in treating domestic sewage / industrial effluents
13. Electro-Chemical Devices (Fuel Cell, Capacitor, Batteries, etc.)
14. Technologies relevant in the aftermath of Covid-19.

How to apply:

1. Students studying in their final year B.E., M.Tech, M.Sc, M.Tech/MSc., (Agriculture) and M.B.A. are eligible to apply.
2. The Project Proposals shall be prepared as per the SPP proposal format available from KSCST website.
3. The team members are advised to carryout prior-art-search before submitting the project proposal to check the novelty of the project.
4. The project team shall have a maximum of 4 students and each project team shall only send one proposal as per the themes

indicated above. Any other project proposals will not be considered and liable for rejection.

5. The softcopy of the proposal along with the details of payment made (through NEFT transfer / UPI Payment only) for Rs. 1,000/- (Rupees One Thousand only) to be sent by email: spp@kscst.org.in
6. The payment shall be made to the Bank account by NEFT transfer or UPI Payment (Bank details of KSCST is available in the project proposal format). The processing fees paid for the project proposal is non-refundable.
7. The student's team to keep ready the project proposal with approval from Project guide / head of the department and institution, make the payment for processing fees and upload the details in the Google Form. The team leader of the project needs to mandatorily fill the Google Form.
The link is: <https://forms.gle/9wriMyaKhBaGaWpw7>
8. Submission of the project proposal is through Google Form only and Email: spp@kscst.org.in (All information in one single pdf file). Students / institutions shall not send the hardcopy of the project proposals to KSCST. All proposals to be submitted after approval of project guide and college / institution.
9. The Institution shall designate SPP Co-ordinator to co-ordinate with KSCST.

Evaluation Process:

1. The submitted projects will be evaluated by experts and then short-listed for sponsorship. The sponsored-amount for the project will be sent to the Principal of respective institutions by NEFT.
2. The sponsored projects will be evaluated by an expert committee, either offline / online, and then shortlisted for final state-level seminar and exhibition.
3. The finalised projects will be called for exhibition / seminar followed by evaluation for the coveted "Best Project of the Year Award".

For information on Student Projects Programme (SPP) and for downloading the project proposal format and guidelines, please visit our website: www.kscst.org.in/spp.html or www.kscst.iisc.ernet.in/spp.html

Interested students may send the "softcopy of the project proposal in single pdf file" with due approval of the college to: Email: spp@kscst.org.in

The Google Form link is: <https://forms.gle/9wriMyaKhBaGaWpw7>

DATES TO REMEMBER

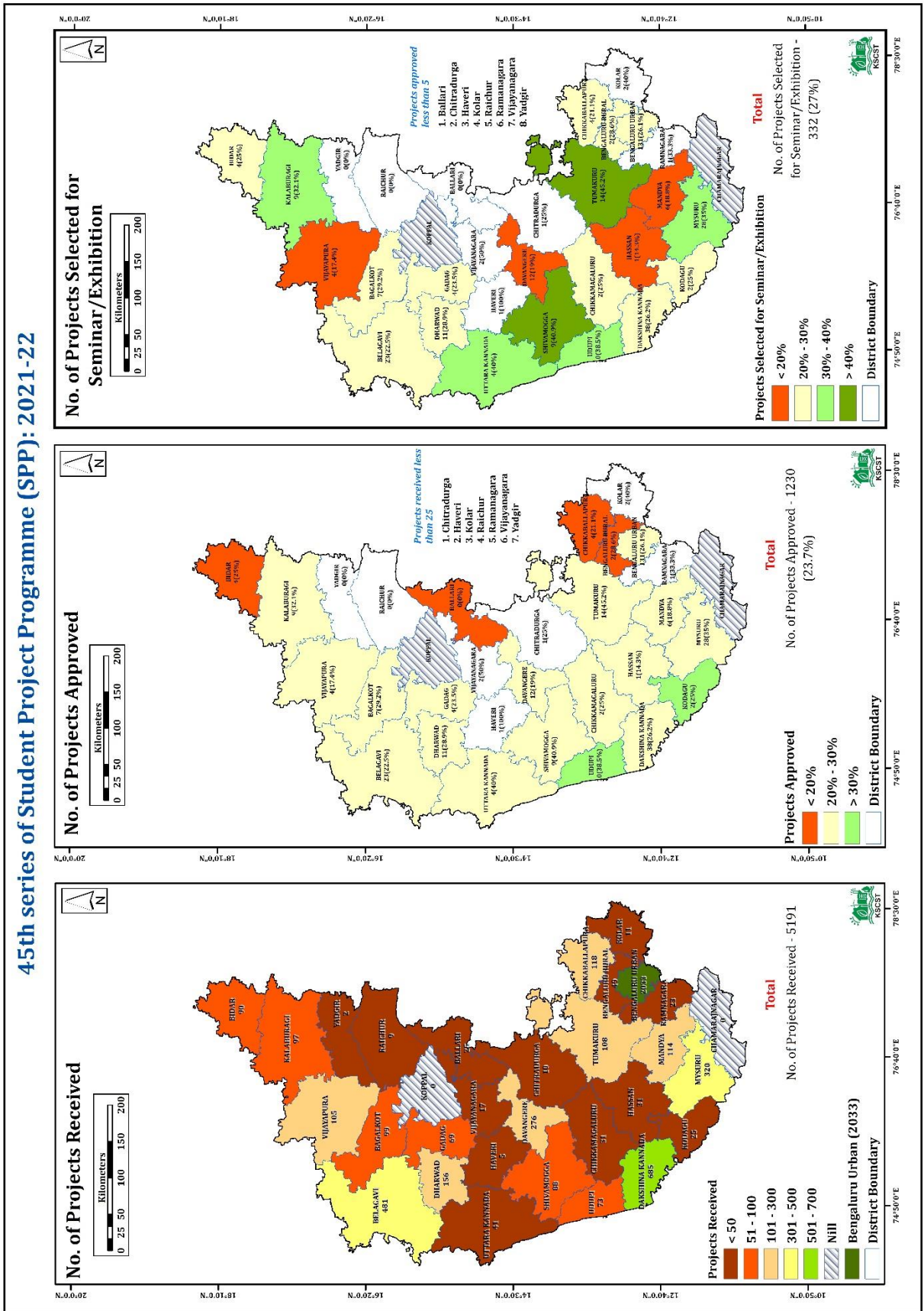
Last date for receipt of softcopy of the project proposal as per the SPP format	15 th January 2022
Project approval by KSCST	March 2022
Evaluation of Projects at Nodal Centre and selection of projects for Seminar / Exhibition	May - June 2022
Synopsis and Final Project Report submission by E-mail	20 th June 2022
Seminar and Exhibition of selected projects	July / August 2022

This program is supported by :

DEPARTMENT OF SCIENCE AND TECHNOLOGY, GOVERNMENT OF KARNATAKA
KARNATAKA STATE BIOENERGY DEVELOPMENT BOARD, GOVERNMENT OF KARNATAKA
DEPARTMENT OF SCIENCE AND TECHNOLOGY, GOVERNMENT OF INDIA

Representation of statistics of 45th series SPP

45th series of Student Project Programme (SPP): 2021-22



Karnataka State Council for Science and Technology

Indian Institute of Science campus, Bengaluru

Experts involved in the 45th series Student Project Programme (SPP)

Indian Institute of Science, Bengaluru

Sl. No.	Name	Designation & Department
1.	Prof. Srinivas Udipi	Former Emeritus Professor, Department of Mechanical Engineering
2.	Prof. Venkatarama Reddy B V	Former Professor & Chairman, Civil Engineering
3.	Prof. Mohan Rao G	Professor, Department of Instrumentation and Applied Physics
4.	Prof. Rajnikanth B S	Professor, High Voltage Laboratory, Department of Electrical Engineering
5.	Prof. Satish L	Professor, High Voltage Laboratory, Electrical Engineering Department
6.	Prof. Kaushik Chatterjee	Department of Materials Engineering
7.	Prof. Srimonto Gayen	Molecular Reproduction, Development and Genetics (MRDG)
8.	Prof. Srinivas T	Associate Professor, Department of Electrical Communication Engineering
9.	Prof. Varsha Singh	Associate Professor, Molecular Reproduction, Development and Genetics (MRDG)
10.	Prof. Pramod Kumar	Associate Professor, Department of Mechanical Engineering
11.	Prof. Shayan Srinivasa Garani	Associate Professor, Department of Electronics Systems Engineering
12.	Prof. Praveen C. Ramamurthy	Associate Professor, Department of Materials Engineering
13.	Dr. Chandni U	Assistant Professor, Department of Instrumentation and Applied Physics
14.	Dr. Lakshminarayana Rao	Assistant Professor, Centre for Sustainable Technologies
15.	Dr. Sundep Prabhakar Chepuri	Assistant Professor, Department of Electrical Communication Engineering
16.	Dr. Susmita Dash	Assistant Professor, Department of Mechanical Engineering

17.	Dr. Nanjunda Rao K S	Chief Research Scientist, Department of Civil Engineering
18.	Dr. Shenoy U J	Chief Research Scientist, Department of Electrical Engineering
19.	Dr. Rathna G N	Chief Research Scientist, Department of Electrical Engineering
20.	Dr. P. Balachandra,	Chief Research Scientist, Department of Management Studies
21.	Dr. Ravi Raju	Chief Research Scientist, Department of Materials Engineering
22.	Dr. Mudakavi J R	Former Chief Research Scientist, Department of Chemical Engineering
23.	Dr. Chanakya H N	Former Chief Research Scientist, Centre for Sustainable Technologies
24.	Dr. Raghuveer Rao P	Principal Research Scientist, Department of Civil Engineering
25.	Dr. Chalapathi Rao N V	Former Principal Research Scientist, Department of Electronic Systems Engineering
26.	Dr. Krishna Kumar M	Former Principal Research Scientist, Department of Electronic Systems Engineering
27.	Dr. Subba Reddy	Principal Research Scientist, High Voltage Laboratory, Department of Electrical Engineering
28.	Dr. Ravindranath H. Aladakalli	Senior Scientific Officer, Central Animal Facility

National Aerospace Laboratories (NAL), Bengaluru

Sl. No.	Name	Designation
29.	Dr. Chakradhar R P S	Principal Scientist
30.	Mr. Dwarakanathan D	Senior Scientist
31.	Dr. V. P.S. Naidu	Senior Principal Scientist
32.	Mr. Panbarasu K	Principal Technical Officer
33.	Dr. Ranganathan V R	Former Chief Scientist
34.	Dr. Sivasubba Rao P	Senior Principal Scientist
35.	Dr. Venkateshwarlu Karodi	Senior Principal Scientist

Other R & D and Private establishments

Sl. No.	Name	Designation and Institute
36.	Dr. Arulalan M R	Former Assistant Professor, Department of Electronics & Communication Engineering, NITK, Surathkal, Mangalore
37.	Mr. Arun Kumar J. G.	Scientist - 'E', Central Manufacturing Technology Institute (CMTI), Bengaluru
38.	Dr. Venugopal B V	Former Technical Expert, Central Manufacturing Technology Institute (CMTI), Bengaluru
39.	Dr. C. Badarinath	Former Scientist - F and Group Director - Combustion at Gas Turbine Research Establishment, DRDO
40.	Dr. Manisha D. Mujumdar	Technical Engineer, Malleswaram, Bangalore
41.	Mr. Dayananda G.N.	Manager, Karnataka State Bioenergy Development Board, GoK

Karnataka State Council for Science and Technology (KSCST)

Sl. No.	Name	Designation
42.	Mr. Hemanth Kumar H	Executive Secretary
43.	Dr. Vijay U T	Chief Scientific Officer
44.	Mr. Venkatesh K.N.	Senior Project Engineer