

2020



B.S. Abdur Rahman

Crescent

Institute of Science & Technology

Deemed to be University u/s 3 of the UGC Act, 1956

*Center for
Energy,
Sponsored
Projects
And
Consultancy
(ESPAC)*

*Executive
Summary*



ABOUT THE INSTITUTION

- ★ **B. S. Abdur Rahman Crescent Institute of Science and Technology is a renowned higher education institution with 36 years of excellence located at Chennai, the capital city of Tamil Nadu, India (30 minutes drive from Chennai International Airport)**
- ★ **Crescent is a pioneer in technical education with the aim of providing quality education and research facilities to the student community.**
- ★ **The Institute spans 50 acres of sprawling Green Campus with a well-equipped library, state-of-the-art laboratories and other amenities.**
- ★ **Crescent offers a wide array of educational programmes that shape the students and prepare them to compete at the global level.**
- ★ **Eminent and erudite faculty members guide the students in the path of a successful career.**
- ★ **Modern facilities for sports, leisure activities and comfortable accommodation are provided to promote the holistic development of students.**

OUR LEGACY

- ★ **Accredited with “A” grade by NAAC.**
- ★ **QS I-Gauge Diamond Rating for Teaching Quality and Employability.**
- ★ **Awarded 4 stars by QS World Top University Rankings.**
- ★ **Awarded QS World University Rankings – Regional Ranking India 2020.**
- ★ **NIRF Ranking 2018: Placed among Top-100 Engineering Colleges in India.**
- ★ **Awarded All India 5 th Rank under Swachh Campus Ranking 2019 by MHRD.**
- ★ **All the Engineering Programmes are accredited by the NBA.**
- ★ **Awarded ISO 9001 2015 quality standards certified by Det Nerske Veritas, Netherland.**
- ★ **Affiliate faculty from Foreign Universities and Industries.**
- ★ **Academic collaboration with IBM, ACCA and CIMA.**
- ★ **Efficient mentoring of students with all kinds of assistance.**
- ★ **Value added programmes in AI and IoT, Big Data Analytics, Foreign languages, Robotics etc.**
- ★ **Industry internship opportunity to all the students.**
- ★ **Exclusive Centre for International Relations (CIR) to assist foreign students.**
- ★ **Efficient Industry Institute Partnership Cell (IIPC).**
- ★ **Dynamic Placement and Training Cell to empower the students.**
- ★ **Dedicated Innovation and Incubation Council to support Students Entrepreneurs.**
- ★ **Exclusive cultural and literary clubs providing versatile exposure for students.**

Executive Summary
of
ESPAC ACTIVITIES

CENTER FOR ENERGY, SPONSORED PROJECTS AND CONSULTANCY





ABOUT THE CENTER

- Sponsored research through funded projects is a major strength of our institution. Adequate infrastructure facilities are created to conduct research in thrust areas of societal needs.
- The state of art facilities are being created with the help of funds from major Government funding agencies such as DST, DBT, CSIR, DRDO, MoIT, MoEF, DAE-BRNS etc. and also from contributions by the Non-Govt. agencies such as industries apart from our own management.
- Realizing the importance, a separate Center for sponsored projects and consultancy has been created. The present Director of the center is Dr.T.Harinarayana.
- The centre has identified more than 60 funding agencies for sponsored projects. The center facilitates the faculty to execute sponsored Projects, Industrial Consultancy, collaborative work and other revenue generation schemes with reputed institutions.
- Additionally, pilot scale R&D plants are installed in our campus related to waste water treatment, biobox to generate gas from the food waste, Biodiesel from the waste plastic are attracting the students and faculty to take up innovative projects.
- Through such innovative suggestions and ways, Crescent faculty responded with nearly double the number of project proposals submitted worth nearly 20 crores during the current year.
- Workshops to promote sponsored projects, writing skills for a report paper, IPR etc. issues have been organized for all the new faculty and the faculty writing proposals for the first time. This will further promote an ecosystem for and sponsored projects.
- This also helps our young UG and PG students with innovative ideas and paves a way to file patents as well, which in turn helps to start the Start-up companies. Due to various measures taken in the institute, the number of projects and also revenue generation has steadily increased year after the year as presented in the following pages.

OBJECTIVES OF THE CENTER

- The centre will ensure involvement of faculty members in the activities of sponsored Projects, consultancy and Institute-Industry interactions.
- Encourage faculty to write project proposals in thrust areas of both pure and applied research with the objective of creating new knowledge/ developing new technology.
- The centre shall act as a catalyst to create state-of-the-art facilities through funded projects in the Institute in cutting edge technology.
- Guidelines shall be offered for smooth implementation of sponsored projects
- Conduct workshops/ invited lectures on recent themes for sponsored projects by inviting experts from the funding agencies.
- The centre shall also evaluate the progress of the on-going projects periodically
- Promote Institute – partnership through industry visits, in-plant training in industries for students and faculty members and consultancy work.
- Develop and promote entrepreneurs among students through training programmes and incubation of their innovative ideas.



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CENTER FOR ENERGY, SPONSORED PROJECTS AND CONSULTANCY

VISION

ESPAC to become a role model by creating an ecosystem through the promotion of Govt. and Non-Govt. sponsored projects, consultancy, training programmes of societal relevance in the fields of energy, environment, industry, health etc., which in turn benefit to increase institute's infrastructure, research publications, patents, startups and also in revenue generation.

MISSION

- To disseminate the information of Govt. and Non-Govt funding agencies for project proposals
- To guide the faculty for the preparation of proposals for funding agencies.
- To act as a bridge between the Govt. agencies, Industry partners and our faculty to increase the number of projects.
- To encourage the faculty to file patents, publish research papers as an outcome of the projects and also initiate startups.
- To promote employees of the industry to undertake training programmes by our institute.
- To organize invited talks and workshops by eminent personalities to encourage our faculty towards sponsored projects.
- To provide incentives to the performing faculty with seed money to promote their project work.
- To encourage the faculty with incentives as per consultancy policy.
- To involve Crescent Alumni to promote joint projects.

OUR MENTORS



Dr. A. Peer Mohamed
Pro Vice Chancellor
provvc@crescent.education

REGISTRAR



Dr. A. AZAD
Registrar
registrar@crescent.education

DEAN RESEARCH



Dr. I. Raja Mohamed
Professor & Dean (Research)
dean.academicresearch@crescent.education

OUR TEAM



Prof. T Harinarayana
Director, ESPAC
(Energy, Sponsored Projects and Consultancy)
director.cers@crescent.education



Dr G. Parthasarathy
Adjunct Professor
(INSA Senior Scientists)
drg.parthasarathy@gmail.com



Sri Dev Anand
Adjunct Scientist
(CEO, M/s Kankyo Cleantech)
dev@kankyo.global



Dr. A.K. Kaliluthin
Deputy Director
(Part-Time at Office of ESPAC)
deputydirector.cdm@crescent.education

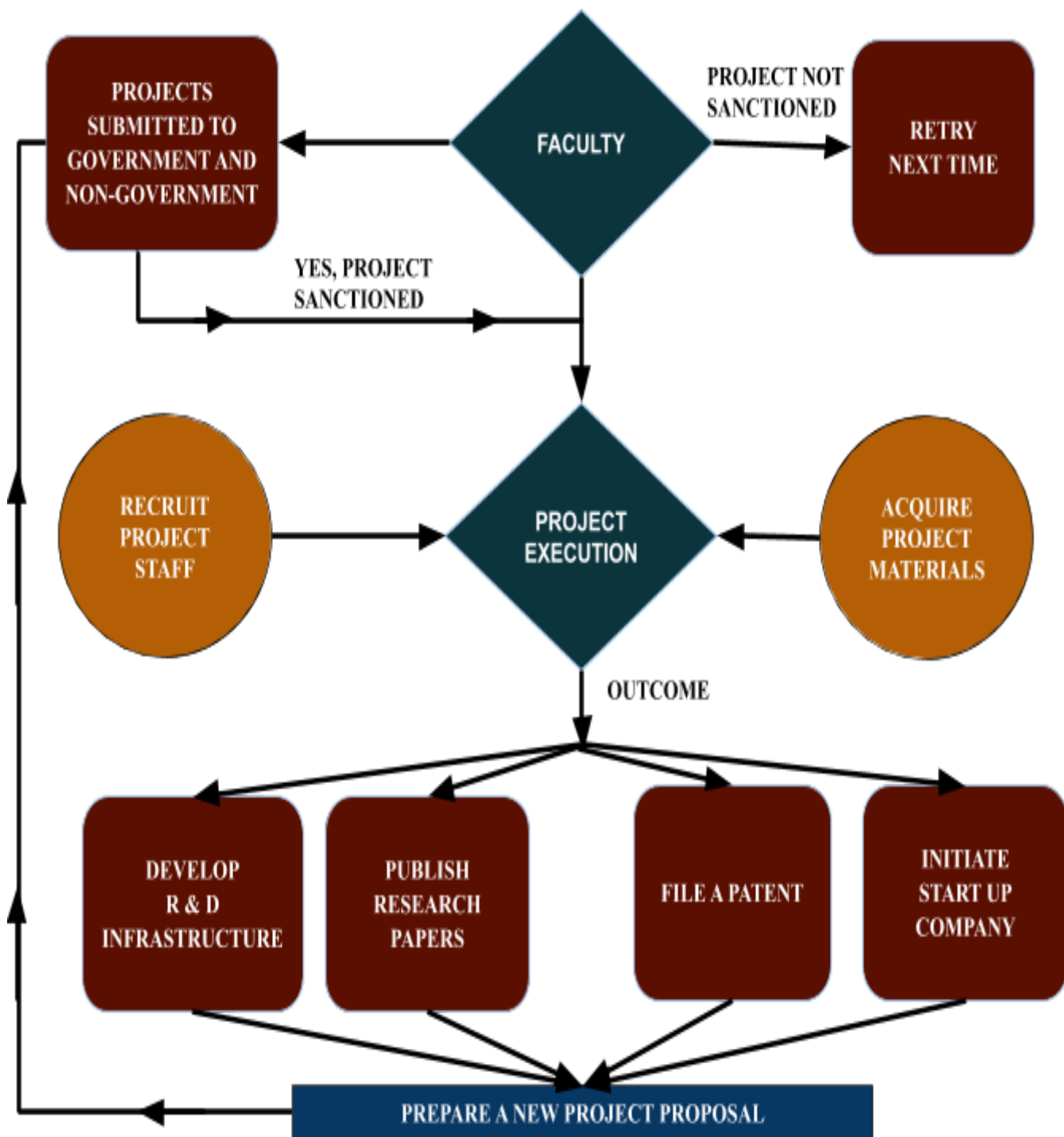


Dr. V. Agalya
Coordinator
(ESPAC)
agalya@crescent.education

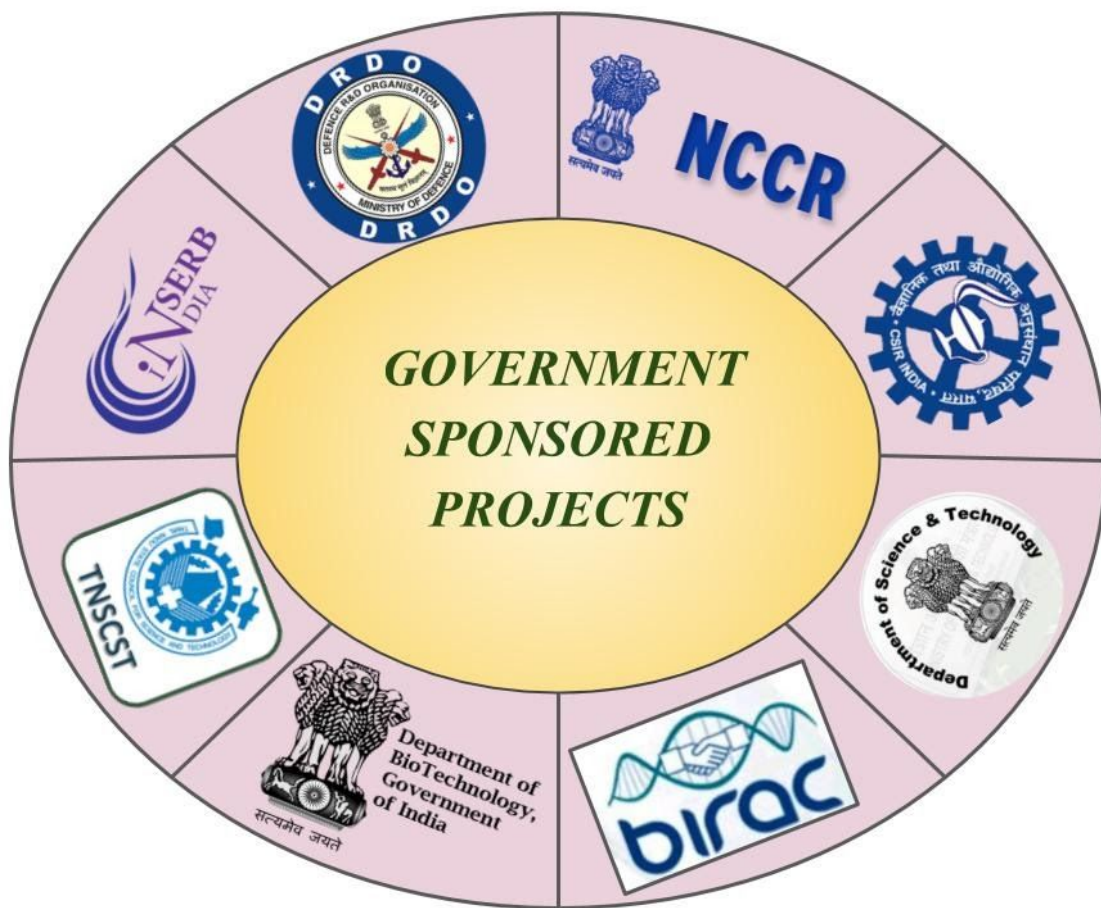
FACILITATION ACTIVITIES FOR PROMOTION OF RESEARCH AND PROJECTS

- Workshops to identify thrust areas and write project proposals
- Invited lectures by experts and Alumni from funding agencies to identify the areas of their interest
- Participation by faculty members in seminars, workshops and conferences
- Work on project feasibility for proof of concept through UG and PG students' project work
- Presentation of the proposals by faculty before in house expert committee members for suggestions and comments
- Support to interested faculty members for writing the proposals
- Meetings with HODs and faculty members for follow up action
- Incentive schemes to faculty members for promotion of high quality publication , patents and other activities

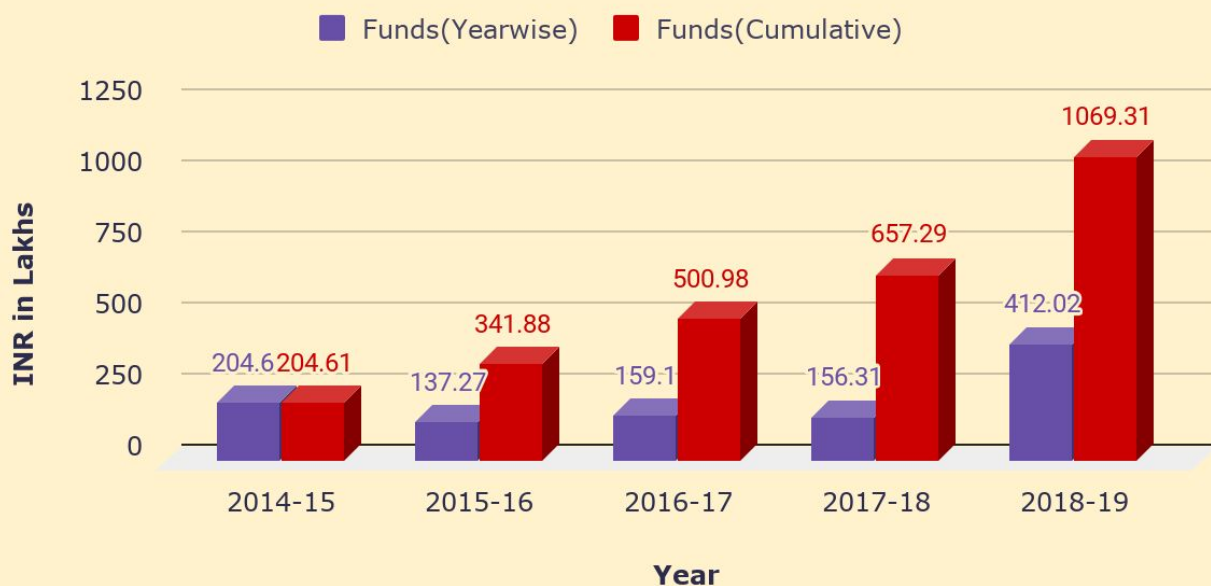
SPONSORED PROJECT - FLOW DIAGRAM



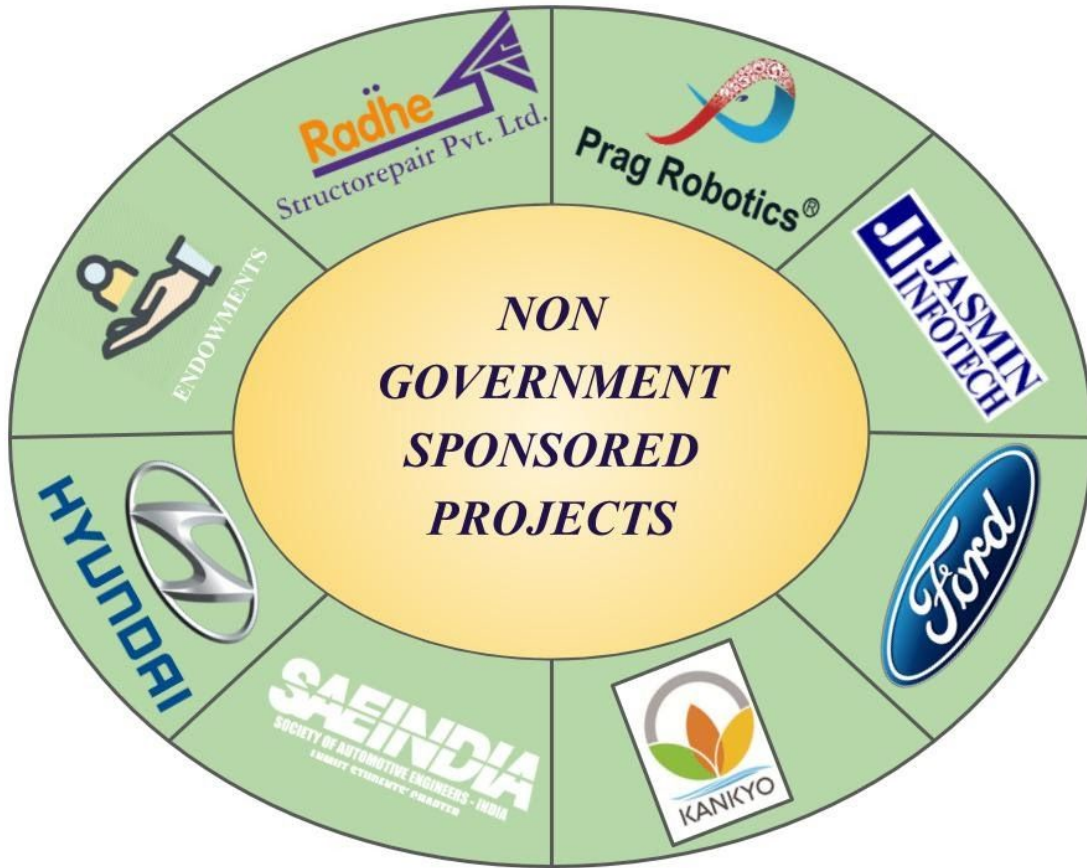
Information on Sponsored Projects from Govt. agencies During (2014-19)



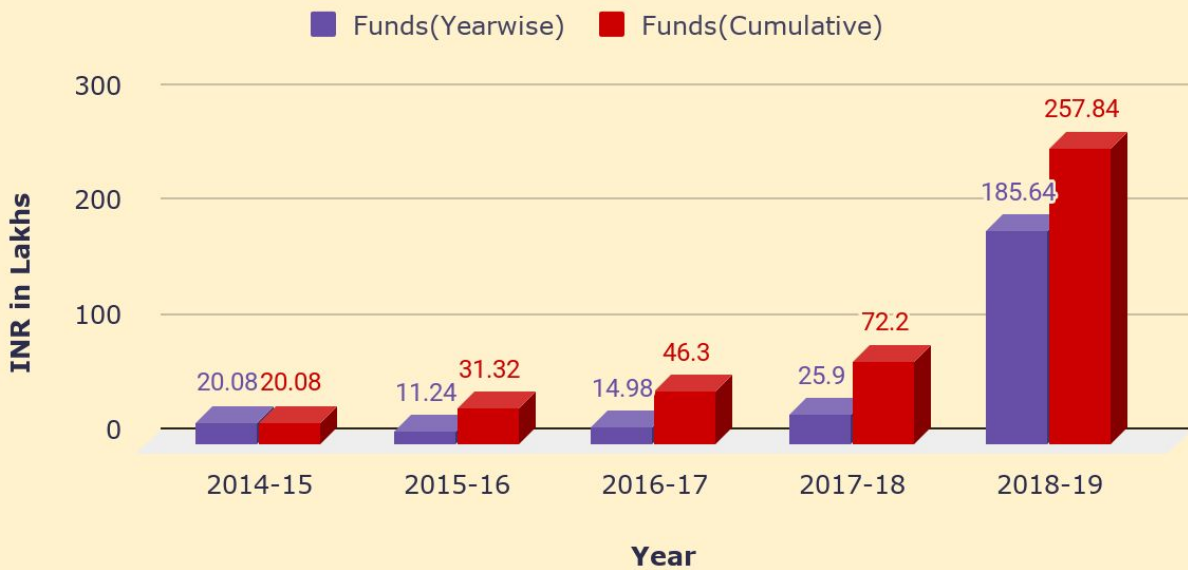
Total Grants for projects sponsored by the government sources during 2014-19



Information on Sponsored projects from Non-Govt. agencies During 2014-19



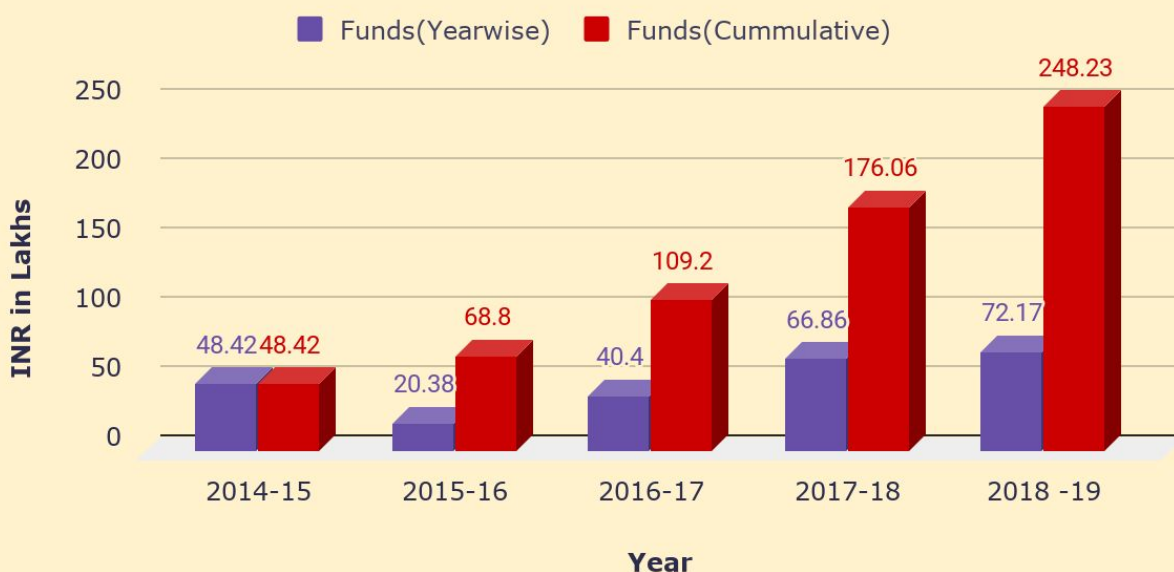
Total Grants for projects sponsored by the non-government sources such as industry, corporate houses, international bodies, endowments, Chairs in the institution during 2014-19



Information on Consultancy Projects During 2014-19



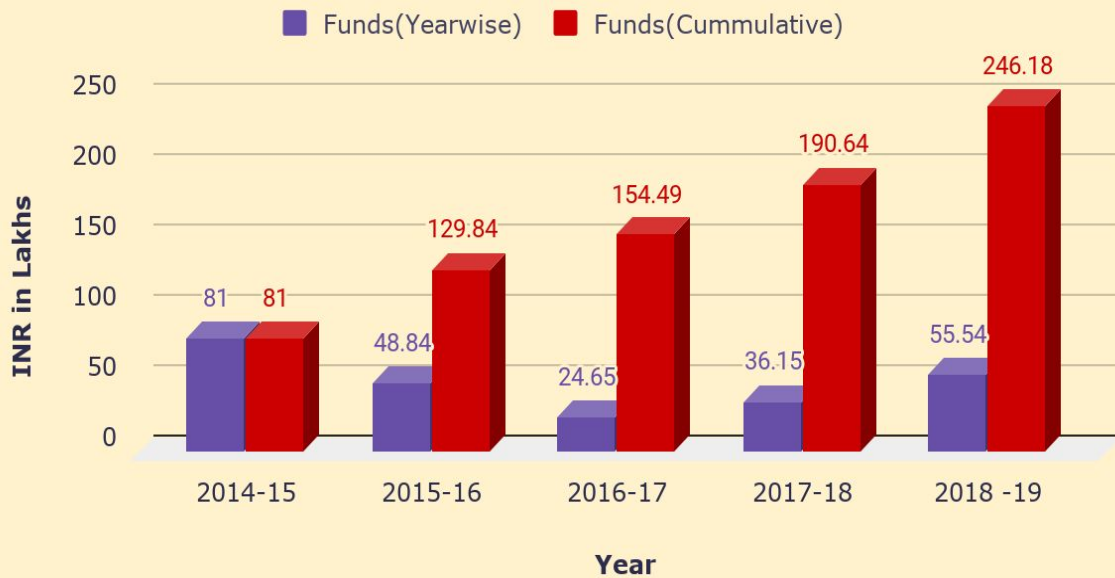
Revenue generated from consultancy by the institution during 2014-19



Information on Corporate Training During 2014-19



Revenue generated from corporate training by the institution during 2014-2019

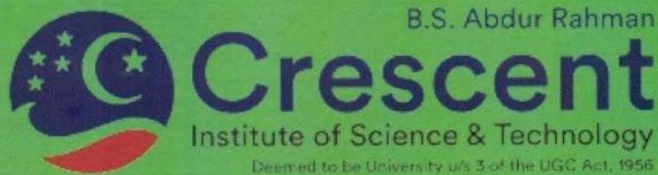


SIGNIFICANT ACHIEVEMENTS

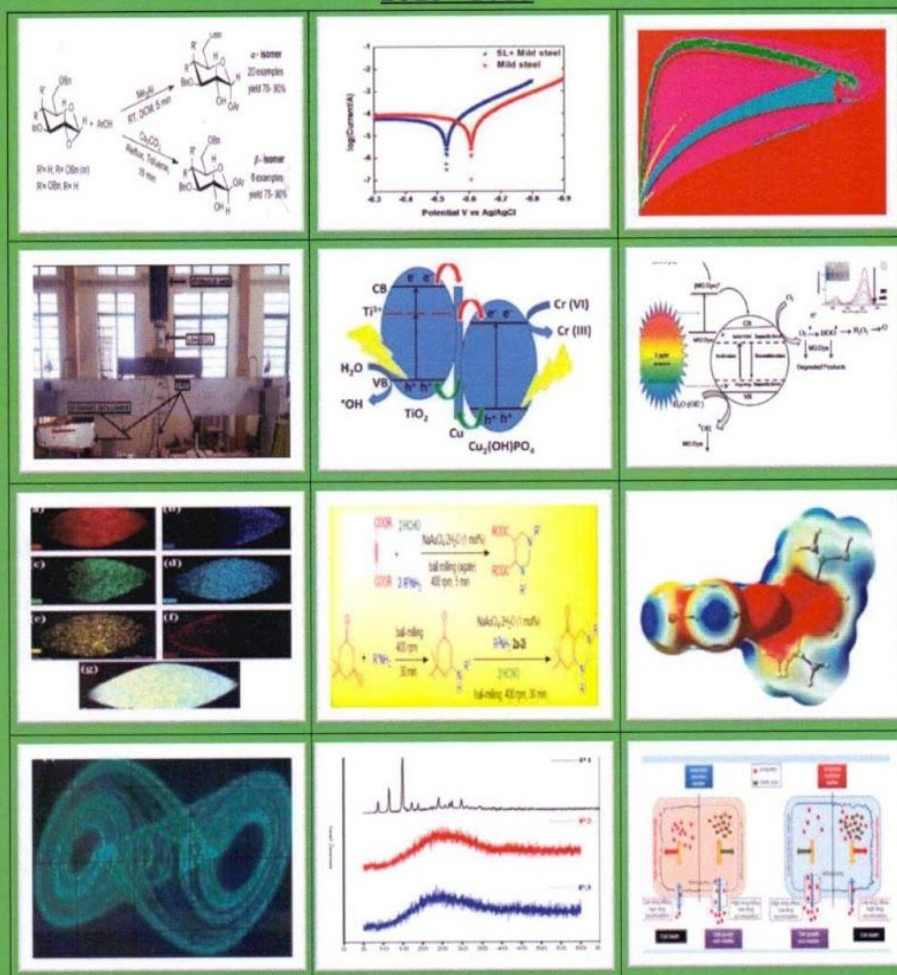
- **Steady improvement of Sponsored projects supported both by Govt. and Non-Govt. sources**
- **Gradual increase in revenue received through consultancy and training related activities.**
- **Implementation of new policies to encourage our faculty working towards sponsored projects and consultancy.**
- **Greater interaction of our Alumni with our faculty and research students.**
- **Implementation of pilot scale Energy projects in our campus to take up innovative experiments.**

FOLLOWING NEW INITIATIVES ARE UNDER PROGRESS TO PROMOTE PROJECTS, CONSULTANCY ETC.,

- **Disbursement of Seed money directly to Faculty twice in an year to do small research and write HQ proposals.**
- **Implementation of Consultancy Policy clearly sharing the revenue with the faculty doing consultancy work.**
- **Implementation of Sponsored projects policy clearly sharing the OH revenue from the projects with the faculty.**
- **More interaction of our Alumni with the faculty and research students to motivate them to take up industry projects/quality papers/ consultancy works etc.**



**REPORT ON OUTCOME OF EXTRAMURAL R & D PROJECTS
2010 – 2015**



**ESPAC – OFFICE OF CENTER FOR ENERGY,
SPONSORED PROJECTS AND CONSULTANCY
(GOVERNMENT OF INDIA FUNDED PROJECTS)**



Submitted to

**GOVERNMENT OF INDIA
DEPARTMENT OF SCIENCE & TECHNOLOGY, NEW DELHI
JULY – 2019**

Brief Details of EXTRAMURAL R & D PROJECTS OUTCOME - 2010-15

Sl. No	Name of Principal Investigator	Project Title	Project Cost (Rs. in Lakhs)
1	Dr. S. Bhagavathy	Palladium catalyzed Buchwald Hartwig coupling of 2-C hydroxymethyl- D-glycols and aryl halides : Synthesis of functionalized C – Aryl Glycosides	42.60
2	Dr. D.Easwaramoorthy	Design of Zeozymes as biomimetic catalyst for the treatment of organic pollutants	13.60
3	Dr. J. William John Bosco	A novel access to indolizidine and quinolozidine alkaloids through stereo selective N-tethered intramolecular cyclopropanation of pyridine	44.00
4	Dr. J. William John Bosco	Diastereoselective intramolecular cyclopropanation of enol ethers derived from aminoacids: a novel access to aza-c-glycosides	13.70
5	Dr. J. Revathy.	Seismic retrofitting of prestressed concrete beams externally bonded with fibre reinforced polymer composites	17.04
6	Ms. R. Saai Harini	Bismuth titanate quantum dots for photo voltaic application	15.68
7	Dr. J. Thirumalai.	Preparation of rare-earth doped molybdate nanostructures using soft chemical route for opto electronic applications	23.20
8	Dr. K. Karthikeyan	Applications of Gold Catalysis for the Synthesis of Bioactive Heterocyclic and Natural Product Mimic	14.00

Sl. No	Name of Principal Investigator	Project Title	Project Cost (Rs. in Lakhs)
9	Dr. Revathi Purushothaman	Development of COF/ Polyimide composites with low dielectric constant for microelectronic applications	23.50
10	Dr. I. Raja mohamed	Investigation of chaotic and strange nonchaotic phenomena in coupled nonlinear circuits and systems	32.46
11	Dr. R. Vasanthakumari	Development of absorbing polymer product for efficient removal of oil spills in sea water	20.04
12	Dr. Soumen Bera	GPx1 gene polymorphisms and mitochondrial ROS signaling in cancer risk	24.70
13	Dr. Vajjiravel Murugesan	Synthesis of novel low bandgap polymer materials for solar cell applications	23.78
14	Dr. Noor Aman Ahrar Mundari	Development of Graphene Sr TIO 3 based hybrid photocatalytic system for the production of solar fuels	24.98
15	Dr. Shazia Jamal	To study the effect of Diclofenac and Osmolytes on protein stability in Renal Dysfunction	13.60
16	Dr. Md Khurshid Alam Khan	Identifying the molecular basis of peroxidase activity of peroxiredoxin 6 – an approach for designing antioxidant peptides and inhibitors	14.30
Total			361.18

CENTER FOR ENERGY, SPONSORED PROJECTS AND CONSULTANCY

EVENTS

BRIDGE 2020–Largest Industry-Institute Interaction Event of Asia

Name of the Event: BRIDGE 2020–Largest Industry-Institute Interaction Event of Asia

Organized by : ICT Academy and B. S. Abdur Rahman Crescent Institute of Science & Technology

Theme : Augmenting Skills, Accelerating Growth

Date of the Event : 25th Feb 2020

Venue : IIT-Madras Research Park, Chennai.

Objectives of the Event:

- To bridge the Industry – Academia gap on Leadership, Research and Talent summit
- To provide solutions to researchers, students and faculties on Augmenting Skills, Accelerating Growth



Giving memento to Dr. R. Govindaraj, Chief Scientist - CEERI Centre, CSIR, Chennai by Prof. T. Harinarayana, Director (ESPAC) and Dr. K. Ganesh, Director (Placement and Training) (Left to Right Dr. T. Harinarayana, Dr. R. Govindaraj, Dr. K. Ganesh)

(3rd from left to right: Dr. K. Ganesh, Dr. T. Harinaryana, Dr. R. Govindaraj, Dr. C. Sethuraman and Dr. G. Sainarayanan)



How to identify Research Problems, Write HQ Research Papers and Proposals by Prof. G.

Parthasarathy, Professor & Senior Scientist, FNA, IISC, Bangalore and Ms. Uma Maheshwari, from M/s. Kankyo CleanTech India Pvt Ltd, Chennai.

Event : How to identify Research Problem, Write HQ Research Papers and Proposals

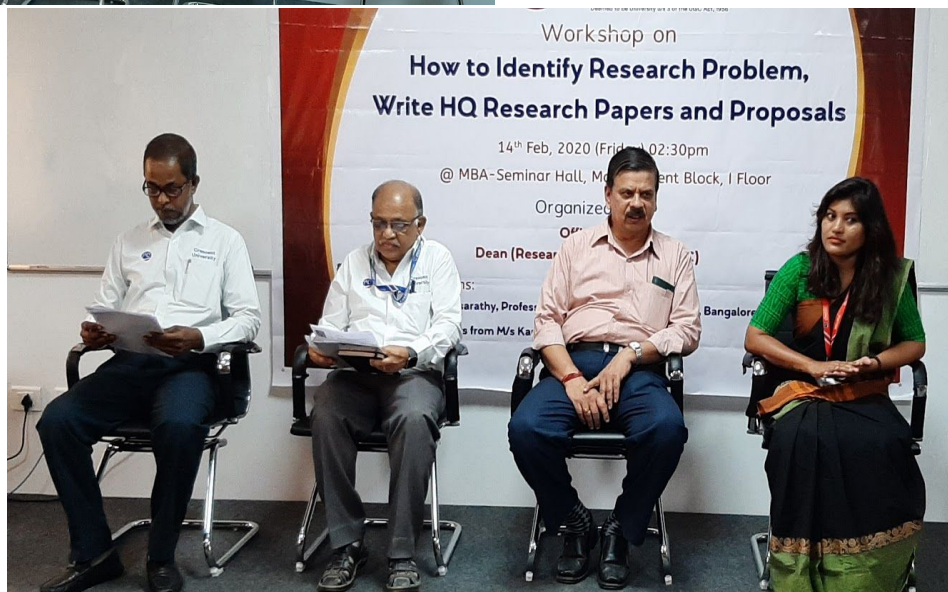
Date : 14.02.2020 (Friday)

Venue : MBA – Seminar Hall (I Floor, Management Block)



Prof. G. Parthasarathy, Professor & Senior Scientist, FNA, IISC, Bangalore has provided his valuable speech through power point presentation

((Left to Right) Dr. Dr. I. Raja Mohamed, Professor & Dean (Research), Dr. T. Harinarayana, Professor & Director (ESPAC) and Prof. G. Parthasarathy, Professor & Senior Scientist and Ms. Uma Maheshwari, from M/s. Kankyo CleanTech India Pvt Ltd, Chennai)



(Talk and presentation by the resources persons with participants)

Visit of Prof. Shakeel Ahmed, Chief Scientist at CSIR-National Geophysical Research Institute and Team Leader (India), Jamia Millia Islamia, New Delhi to Crescent

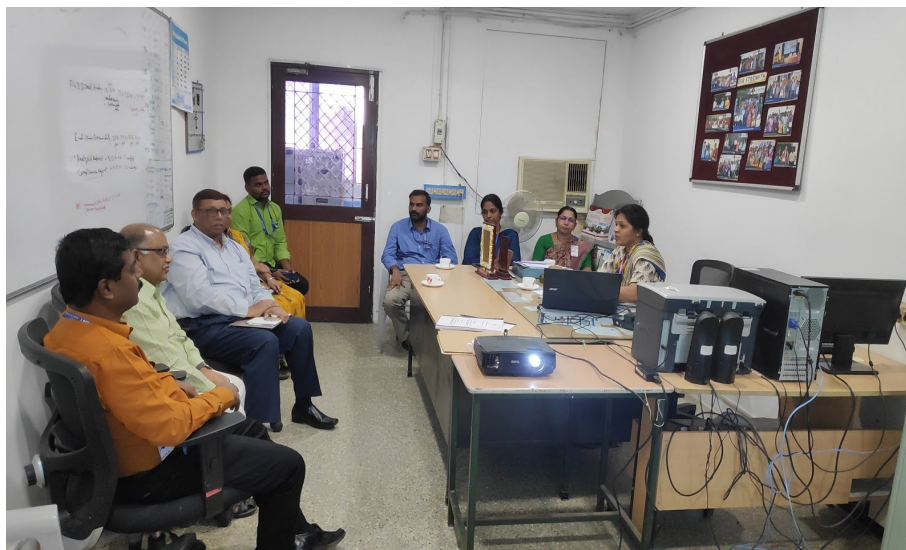
Date : 16th December 2019

Venue : B.S.A Crescent Institute of Science and Technology (Civil, ECE & MECH)

Objectives of the visit: To promote sponsored projects, research, consultancy and training.



(Interaction with Dean & Faculty members of School of Mechanical Sciences)



Interaction with HOD, Dean & Faculty members of School of Electrical Sciences



Interaction with Dean & Faculty members of School of Infrastructure

**Special Guest Lecture on Promotion of Research, Funded Projects, Patterns and Consultancy
by Prof. T. Harinarayana, Director - ESPAC.**

Date : 24th October 2019

Venue : B.S.A R. Crescent Institute of Science and Technology, Department of Computer Science and Engineering (Seminar Hall)

Objective : To promote sponsored projects, research, patent, consultancy and training.



**(Prof. T. Harinarayana, Director - ESPAC, Giving Special Guest Lecture
on
Promotion of Research, Funded Projects, Patterns and Consultancy)**

Brief Report on the visit of UGC Expert Committee by Prof. M.K. Durgaprasad, Prof. Ashok Thorat, and Prof. R. Rajaram Zirange, has visited our institute for inspection under Swachhta Bharat Mission

Date : 19th September 2019

Objective of the visit: To visit 3 pilot units for promotion of sponsored projects, research, consultancy and training.



(Left to right:
Dr. J. Revathy madam,
Dr. R. Raja Prabu,
Dr. T. Harinarayana,
Mr. Nandagopal (Kankyo),
Prof. R. Rajaram Zirange,
Prof.M.K. Durga Prasad,
Prof. Ashok Thorat,
Sr. Manager Shri. V. N. A.
Jalal, Mr. S.Shafeer Ahamed,
Mr. A .Sheik Farid and other
faculty members of Crescent)



(Photos of Interaction and
discussion at 3 pilot plants with
UGC expert Committee
members)

Visit of Japanese officers Mr. Yorkio Yanagimoto, Ms. Shodai Yanagimoto, Mr. Yathi Rajesh, K along with Mr. Nandagopal of kankyo to Crescent

Date : 18th September 2019

Objective of the visit : To promote sponsored projects, research, consultancy and training.

**Interaction with
Prof. T. Harinarayana at
ESPAC office**



**Interaction & discussion
with Prof. A. Azad,
Registrar**

Visit of Prof. Parthasarathy, Senior Scientist, INSA & Adjunct Prof.@Crescent

Date : 13th September 2019

Venue : B.S.A Crescent Institute of Science and Technology



Interaction at ESPAC with Prof .T. Harinarayana & ECE department

Visit of Prof. K. Ramarathnam, Chairman, BASIL Energetic Pvt Ltd

Date : 06th September 2019

Venue : B.S.A Crescent Institute of Science and Technology (MECH, CA, CSE, ECE & Chemistry dept)



Interaction at ESPAC with Prof .T. Harinarayana & visit to Pilot Plant

Visit of Dr. JVSSN. Murthy, Ex. General Manager , Oil Natural Gas Corporation Ltd.

Date : 28th August 2019

Venue : B.S.A Crescent Institute of Science and Technology (IT, CSE, CA & Aerospace Engg.)



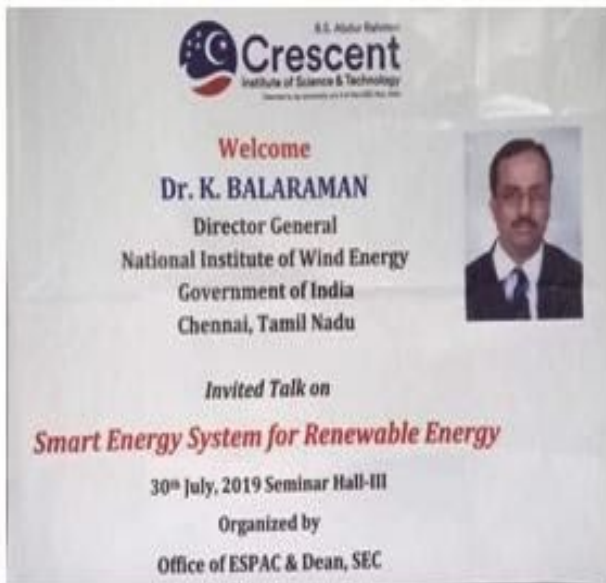
Visiting with our honorable VC sir's & Visit to Pilot scale plants

Visit of Dr. K. Balaraman, Director General, NIWE, Government of India, Chennai, Tamil Nadu

Topic of the invited talk : Smart Energy System for Renewable Energy

Date : 30th July 2019

Venue : Seminar Hall – III



Book on Extra-Mural R & D Projects of Govt. of India, released by Dr. K. Balaraman, Director General, National Institute of Wind Energy, Chennai and our Vice Chancellor, Registrar of BSARCIST

ESPAC

B.S. Abdur Rahman

Crescent

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