

## ANNUAL REPORT 2023-24

### A. About IIC Institute

- Vision / Mission of IIC established at the Institute
  - a. **Vision:** To be a centre of excellence and build a conducive atmosphere in innovation, Research, and Entrepreneurship responsive to the needs of industry and society
  - b. **Mission:**
    1. To create an environment of nurturing and supporting innovative thought-provoking ideas
    2. To create entrepreneurship opportunities for all stakeholders
    3. To foster the startups by providing them with the necessary support
    4. To support commercialising innovative sustainable ideas in the form of IPR.
- **Journey of IIC established at the Institute**
  - a. The Institution's Innovation Council (IIC) was established at the Srinivas Institute of Technology in June 2021
  - b. In its inception year, the IIC included 12 members across various departments nurturing various themes related to IPR, Incubation and Startups, Entrepreneurship and Innovations.
  - c. In the subsequent months, Faculty and student members across different departments were added to cater to the college's innovative inquisitiveness as a whole. Today, the IIC of SIT has 28 faculty and 06 student members.
  - d. Under the aegis of IIC, the college has organised numerous workshops, seminars and events to inculcate the requirement of innovation amongst the stakeholders. Under the Impact Lecture Series, resource people were invited as guest speakers, wherein lectures related to IPR, startups and Entrepreneurship were given.
- **Diversified representation in the IIC established at the institute from industry, Interdisciplinary & Departments/ Units etc.**
  - a. College Representation:

1.	Dr. Shrinivasa Mayya D	President & Principal
2.	Dr. R K Hegde	Convenor,
3.	Dr. Shankar K S	Innovation Activity
4.	Dr. Prasad P	ARIIA Coordinator
5.	Dr. Sooryakrishna	Startup activity coordinator

6.	Prof. Jayaram Thumbe	IPR activity coordinator
7.	Mr. Sundara S M	Vice President
8.	Prof. Sathish Kumar K	Member, Dept. of Electronics & Communication
9.	Prof. Nithin Joshuva	Member, Dept. of Marine Engg.
10.	Prof. Lokesh K S	Member, Dept. of Aeronautical Engg.
11.	Prof. Sathyaprakash A	Member, Dept. of Mechanical Engg.
12.	Prof. Rakesh Mallya	Member, Dept. of Electronics & Communication
13.	Dr. Anoop B K	Internship Activity Coordinator
14.	Prof. Chandira Prakash N	Member, Dept. of Computer Science & Engg.
15.	Prof. Gourish Hegde	NIRF Coordinator
16.	Dr. Raghavendra M J	Member, Dept. of Mechanical Engg.
17.	Prof. Chandra Jogi	Member, Dept. of Mechanical Engg.
18.	Prof. Sowmya	Member, Dept. of Information Science
19.	Prof Rashmi	Member, Dept. of MBA
20.	Prof. Sudarshan K	Member, Dept. of Computer Science & Engg.
21.	Prof. Sandesh K S	Member, Dept. of Mechanical Engg.
22.	Prof. Madusudan S	Social Media, Dept. of Artificial Intelligence
23.	Prof. Sahana G Kunder	Member, Dept. of Electronics & Communication
24.	Prof. Shreeja M	Member, Dept. of Computer Science & Engg.
25.	Dr. Praveen Shenoy K	Member, Dept. of Aeronautical Engg.
26.	Prof. Sneha Bose	Member, Dept. of AI-DS
27.	Prof Steevan Robert Tellis	Member, Dept. of MBA
28.	Prof. Mallika	Member, Dept. of MBA
29.	Mr. Katharina K.	Member, Dept. of Information Science & Engineering
30.	Prof. Prakash ST	Member, Dept. of Automobile Engineering
31.	Ms. Nikshitha R S	Member, Dept. of MCA
32.	Mr.Nivin K S	Member, Dept. of AIML
33.	Mrs.Nitya B P	Member, Dept. of AIML
34.	Mr.vivek V Kumar	Member, Dept. of Marine
35.	Prof. Harishma	Member, Dept. of Computer Science & Engg.
36.	PratheekshaB. R	Member, Dept. of MCA

b. Industry Representation:

1.	Mr. Sundar S, MSME development institute, Ministry of MSME, GoI, Yeyyadi	Expert from nearby industry / Industry association / Ecosystem
2.	Nagarjun MG, Project Associate Coordinator, Karnataka State Council for Science & Technology	Patent Expert
3.	Gowtham K Mendon, ExtraMarks Education India Pvt. Ltd.	Startup / Alumni Entrepreneur
4.	Suhas Shetty, DevApps IT Solutions Pvt Ltd & TechSigma Global Technology, Pvt Ltd.	Startup / Alumni Entrepreneur

**B. Brief mention of key functionaries at the IIC Institute**

1.	Dr. Shrinivasa Mayya D	President
2.	Dr. R K Hegde	Convenor, Innovation Activity
3.	Dr. Shankar K S	Innovation Activity
4.	Dr. Sooryakrishna	Startup activity coordinator
5.	Dr. Prasad	ARIIA Coordinator
6.	Dr. Hariprakash	Social Media Coordinator
7.	Prof. Jayaram Thumbe	IPR activity coordinator
8.	Prof. Rakesh Mallya	NSS Coordinator
9.	Mr. Sundara S M	Vice President
10.	Dr. Anoop B K	Internship Activity coordinator
11.	Prof. Gourish Hegde	NIRF Coordinator
12.	Prof. Madusudan S	Social Media

**C. Portfolio/graphical/Tabular representation of Resource strength (human capital and Physical capital) of the IIC institution**

Total No. of IIC Members	36
Total No. of IAs	14
Total No. of Faculty Mentors from Portal	36
Pre-Incubation Units, If any	5
Incubation Units, If any	0
IP Facilitation Unit, If any	02

**D. Highlight Facilities, Infrastructure of Pre-Incubation & Incubation kind and Student bodies/clubs engaged in promotion of Innovation and Entrepreneurship in the campus.**

SI No	Department	Facilities / Infrastructure	Faculty in-charge
1	Mechanical	Activity room with a computer (M304)	Prof. SathyaPrakash A
2	Computer Science and Engineering	Project work lab with around 30 computer systems, 4GB RAM, 500GB Hard disk, I3 processor equipped	Prof. Shailesh
3	Marine	Activity room with computer (M204)	Prof. Chandra Jogi

4	ECE	Hardware lab with LED Display board, Power Supply, AFO, CRO	Mr. Sathish Kumar
5	College	Discussion Room, Innovation & Incubation club	Dr. Soorya Krishna

SI No	Department	Student Bodies / Club	Faculty in-charge
1	Computer Science and Engineering	ASCEE Association of Computer Engineers	Mr. Aravind Naik
		Computer Society of India	Mrs. Padmanayana
2	ECE	SSOSC Lab	Prof. Shailesh
3		STEADY	Mr. Sathish Kumar
4	Automobile	AMARA Association	Prof. Girish
5	Aeronautical	Aeroclub	Dr. Lokesh KS
6		Srinivas-Lakshya Innovation Centre	Dr. Praveen Shenoy
7	AI&DS	AADE	Prof. Sneha Bose
8	Marine	AIMES	Prof Sathish K G
9	Mechanical	SAMARTH (3D printer)	Sathya Prakash A

### E. Highlight Achievements (Narrative/Graphical/tabular representation)

SI No	Particulars	Mechanical	CS	E&C	Aero & Auto	Marine	AI&DS	ISE
a)	Number and Different types of I&E and IPR activities Conducted		01	06			6	9
b)	No. of student's & faculty ideas generated		56	10	13	10	-	1
c)	No. of students & faculty Innovation/prototypes developed		56	10	13	10	-	-
d)	No. of IPs generated, published and granted	03	01	01	01	01	-	01
e)	No. of Student & Faculty Startups/Ventures established.		01	-	02		-	-
f)	Amount spent on promotion and awareness generation on Innovation Entrepreneurship in the campus	-	-	-	-	-	-	-
g)	Amount grant or fund supported to student & Faculty lead Innovations, startups and IPR	7000/-	14000/-	-	21000/-	5500/-	-	5500/-
h)	No. of Technology Transfer and Commercialisation happened	-	01	-	-	-	-	-

### F. Highlight few best IIC Faculty/Student members and their achievements/ Rewarded for the innovations at different forum

[Profile of few faculties with 2-3 line of their achievements]

Students	Faculty	Innovation	Achievements
1. Ms. Sharanya I. S. 2. Mr. Yashwanth H. L. 3. Ms. Hrithika Nikam 4. Mr. Channa Keshava 5. Reddy K. L.	Dr. Gangadhara Rao	Acoustic Study of Mechanically Characterized Rattan/Glass Fibre Hybrid Composite for Structural Application	Received a grant of Rs.7000/- from KSCST Funded Project
1. Mr. Harish V. 2. Ms. Meghana Ashok 3. Gundi 4. Mr. S. Keerthan 5. Ms. Shaik Zuhi Rafhath	Dr. Rajesh	Development of A Hybrid Green Propellant Rocket Engine	Received a grant of Rs.7000/- from KSCST Funded Project
1. Mr. Danny Damiaio Mantero	Dr. Rajesh	Fabrication and Development Of Lithium Silicon Battery for High	Received a grant of Rs.7000/- from KSCST Funded Project

2. Mr. Akhilesh 3. Mr. Hemanth S. 4. Ms. Shwetha K. P.		Payload Uav	
1. Ms. Aishwarya K. K. 2. Ms. Niveditha P. P. 3. Ms. Suchithra	Dr. Soorya Krishna K.	Design and Implementation of An Heat Sink for An Electric Vehicle	Received a grant of Rs.5500/- from KSCST Funded Project
1. Mr. Yajnesh J. Kulal 2. Mr. T. Vaishnav 3. Mr. Deepak Kumar A. 4. Mr. Dhanush	Mrs. Shreekshitha	Track Vision - Real Time Obstruction Tracking And Pedestrian Alert for Indian Railway's System	Received a grant of Rs.5000/- from KSCST Funded Project
1. Mr. Karthik H. K. 2. Mr. Avin V. K. 3. Mr. Chethan H. K. 4. Mr. Prashantha G. M.	Prof. Vivek Vijay Kumar	Application of Convolutional Neural Networks for Imagebased Detection, Inspection, And Analysis of Hull Corrosion	Received a grant of Rs.5500/- from KSCST Funded Project
1. Mr. Deekshith S. 2. Mr. AbinShaji 3. Mr. Aswinkrishna K. 4. Mr. S. Karthik Shetty	Prof. Jayaram Thumbe	Design and Fabrication of Smallscale Vertical Axis Wind Energy Device	Received a grant of Rs.7000/- from KSCST Funded Project




**Patent Details:**

	Faculty	Patent title	Patent body	Department	Year
1	Mr. Sudarshan K	Track Vision – Real Time Obstruction Tracking and Pedestrian Alert System	Indian Patent (Published)	Information's Science	2023-24
	Mr. Athmaranjan K				
	Mrs. Sowmya				
	Mrs. Shreekshitha				
	Mr. Kiran				
	Ms. Aparna				
	Mr. Yajnesh J Kulal				
	Mr. Deepak Kumar A				
	Mr. Dhanush				
	Mr. T. Vaishnav				
2	Mr.Rakesh Sharma K	Connect Care- A Food Donation App	Indian Patent (Published)	Computer Science	2023-24
	Dr.Jithendra P R Nayak				
	Mr. Sathish Kumar.K	Portable CHATGPT Terminal Setup Using Esp32 And TFT Screen	Indian Patent (Published)	Electronics and Communication	2023-24
	Mr.Clitus Neil D Souza				
	Mrs. Sahana g kundar				
	Akhil K				
	Arun B S				
	Neha Y Naik				
4	Dr. Praveen Shenoy K	Flight Dynamics and Control Study of Co-Axial Rotor	Indian Patent (Published)	Aeronautical	2023-24
	Dr. Shrinivasa Mayya D			Mechanical	
	Varuna T			Aeronautical	
	Laxmi IshappaItagi				
	Suma K S				
	Sangam Bhaskar Devadiga				
5	Mr. Sudheendra H N	Design and Fabrication of Automated Weighing and Packing Device	Indian Patent (Published)	Mechanical	2023-24
	Mr. Jayaram Thumbe				
	Dr. Shrinivasa Mayya D				
	Mr. Kapthi Mohammed Sahil				
	Mr. Nityanand Manjunath Naik				
	Mr. Chandan Venkatraman Naik				

	Mr. AbinShaji				
	Mr. Aswin Krishna K				
	Mr. Deekshith S				
6	Alistair Jonathan Pinto	Design and Implementation Of Ai-Powered Humanoid Service Robot	Indian Patent (Published)	Electrical & Electronics	
	Frenil Rohan Crasta				
	Sumana				
	Chaithanya				
	Akash				
	Sagar Charodi				
	Dhanush K				
	Dr.Shrinivasa Mayya D.			Mechanical	
	Mr.Lokesha B			Electrical & Electronics	
7	Vivek V Kumar	Application of Convolutional Neural Networks for Image-Based Detection, Inspection, And Analysis of Hull Corrosion	Indian Patent (Published)	Marine	
	Sunil P Rodrigues				
	Karthik H K				
	Avin V K				
	Chethan H K				
	Prashantha G M				
	Stephin Jose				
	Kiran Janardhanan C				
8	Dr Anoop B K	Baravu-Tulu LipiIdentification	Indian Patent (Published)	AIML	
	Mrs Daya Naik				
	Mr. Parvathraj K M M				
	Mr Ganesh M S				
	Mr. Nivin K S				
	Mrs.Nithya B P				
	Mr.Madhusudhan S				
	Mrs.Aneesha P V				
	Mrs.Reshma P K				
	Mr. Midhun Varghese				
	Ms. Suraksha				
	Mr. Abhinav Vinod				
	Mr. Suhail Abdul Nazir				
Mr. Jibin T V					
9	Dr.Lokesh K S	Electronic Waste Management Practice	Australian Patent		
10	Dr. Praveen Shenoy K	Weather Forecasting Using Arduino Based Cubesatellites	Indian Patent (Published)	Aeronautical	
11	Prof. Girish AR	Fabrication and Development ofBLDC Motor and Controller for Designed Electric Vehicle	Indian Patent (Published)	Automobile	2022-23
	Dr. Gangadhara Rao			Aeronautical	
	Prof. Varun			Automobile	
	Dr. Lokesh K S			Aeronautical	
	Prof. Prakash ST			Automobile	
	Prof. Jagadeesh			Aeronautical	
12	Venkatesh Rao S N	Automatic Brake Failure Indicator with Automatic	Indian Patent (Published)	Mechanical	
	Sudheendra H N				





	SathyaprakashAnekallu	Braking By Electromagnet Coil Type Braking		
13	Aravind Naik	Grow -N-Know	Indian Patent (Published)	Computer Science
14	Dr. Padmanayana	Detection of Phishing Website	Indian Patent (Published)	Computer Science
15	Madhusudhan S	Crime Predictive Model & Hotspot Mapping Using Machine Learning	Indian Patent (Published)	AIML
	Athmaranjan K			Computer Science
	Sowmya			Information Science
	Parvathraj K M M			AIML
	Dr. JOSE ALEX MATHEW			AI&DS
	Nithya B P			AIML
	Nivin			AIML
16	Sathish Kumar.K	Wireless Quiz Buzzer Using Esp8266	Indian Patent (Published)	ECE
	Soorya Krishna K			
	Clitus Neil D Souza			
17	Vivek Vijay Kumar	Calculation and Analysis of Carbon Intensity Indicator For Merchant Vessels	Indian Patent (Published)	Marine
	Sunil Prakash Rodrigues			
	NithinJoshuva			
	Sathisha K G			
	Mohamed Gowspeer			
	Tony K Sebastian			Mechanical
				Marine

**G. Highlight selected best Innovations & images with mention of inventor/innovation name**

SI No	Department	Innovations name	Images
1	Aeronautical	Tool Wear Analysis and Machinability Aspects ofGFRP Based Composites Plates	
2		User Interface Design for Reliability Analysis	
3		Optimization of Modified Blended Wing Body	

4		<p>Fabrication and Development Of Lithium Silicon Battery For Heavy Payload UAV's</p>	
5		<p>Comparative Study on Structural property Evaluation of Pvc Plates with Recycled Pvc/Polythene Materials</p>	
6		<p>Acoustic and Vibration Studies of Mechanically characterized Rattan/Glass Fibre Hybrid Composite for Structural Application</p>	
7		<p>Development of Ballistic Evaluation Motor for KNSU Burn Rate Measurements</p>	
8		<p>Flight Dynamics and Control Study of Co-Axial Rotor</p>	
9		<p>Development of Hybrid Green Propellant Rocket Engine</p>	



10		Thermal Performance Enhancement Studies of Double Pipe Heat Exchanger with Turbulator Inserts and Ethylene Glycol	
11	Automobile	Fabrication and Installation of Brakes and Suspension System	
12		Installation of Permanent Magnet Synchronous Motor(PMSM) And Controller for Designed Electric Vehicle	
13		Design of Chassis, Battery and BMS For the Electric Vehicle	

**H. Highlight selected start-ups established by students/faculties with mention of founder/cofounder name**

SI No	Department	Startups names	Year	Founder name
1	Computer Science and Engineering	Ethical Security Experts	2024	1. K.S.Monish, 2. Mr. Rohan A.Gajare, 3. Mr. Chinmaya Ramana 4. Mr. Shravan VK 5. Mr. H P Kishan Rao

**I. List if any break through Innovations / Technology Developed at the institute (2-3 technology with 2-3 lines about technology and innovation**

SI No	Department	breakthrough Innovations	Year	Details (2-3 lines about technology and innovation)
1	Marine Engineering	A Comprehensive Study on Nano-material-enhanced Hydrophobic Jute and Hemp Composite		This work investigates the enhancement of the mechanical properties of natural fibers, specifically jute and hemp, through the incorporation of nano particles, namely titanium dioxide (TiO <sub>2</sub> ) and graphene. The primary objective is to explore the synergistic effects of these nanoparticles on the

			<p>tensile strength, flexural strength, and impact resistance of jute and hemp composites. The binding element utilized in this study is epoxy resin, with a resin to hardener ratio of 1:10, to create a matrix for the composite materials. The experimental methodology involves the dispersion of TiO<sub>2</sub> and graphene nanoparticles within the epoxy resin matrix, followed by impregnation of jute and hemp fibers. Mechanical testing, including tensile, flexural, and impact tests, will be conducted to evaluate the performance of the composites. Characterization techniques such as scanning electron microscopy (SEM) Transmission Electron Microscopy (TEM), Fourier Transform Infrared Spectrometer (FTIR) and X-ray diffraction (XRD) will be employed to analyze the microstructure and crystalline properties of the developed composites. The outcomes of this research aim to provide insights into the feasibility and effectiveness of using nano-reinforcements to enhance the mechanical properties of natural fiber composites, thus contributing to the advancement of sustainable and high-performance materials in Marine applications.</p>
2		<p>Drone-Based Surveillance System for Enhanced Monitoring of Vessels in Port Areas and Detection of Encroachments.</p>	<p>This project addresses the need for an efficient surveillance system tailored for vessels navigating within port areas, focusing on water bodies with licenses issued to marine vessels for plying within designated limits, the imperative for a cost-effective solution is evident. Our objective is to develop a drone-based surveillance system capable of tracking and reporting vessels within the port's water limits. Furthermore, the system aims to detect and report encroachments within the port boundaries in real-time. Through a comprehensive methodology encompassing data collection, analysis, programming, and system integration involving drones, processors, and cameras, we seek to create a robust solution. This project not only addresses the immediate need for vessel tracking but also contributes to a Management Information System providing insights into violators and encroachments. By enhancing surveillance capabilities and streamlining reporting mechanisms, our solution ensures proactive management of port activities, safeguarding against potential encroachments and facilitating efficient port operations. By leveraging advanced technologies and systematic methodologies, our project contributes to enhancing port security, promoting adherence to regulations, and facilitating informed decision-making through a comprehensive Management Information System. Through rigorous testing and continuous improvement, we aim to deliver a reliable and efficient system that meets the operational needs of port authorities while ensuring cost-effectiveness and scalability.</p>
3		<p>Gas Detection system using IOT for confined spaces</p>	<p>This paper presents a novel IoT-based gas detection system designed to ensure the safety of sewage cleaning personnel by providing real-time monitoring of gas levels for sewers. The system dynamically adjusts alert thresholds based on the</p>

				<p>depth of the sewage-pit, accounting for the varying depths of the cleaning process. By integrating gas sensors, a microcontroller, and a communication module, the system continuously measures the concentrations of hazardous gases such as H<sub>2</sub>S, CH<sub>4</sub>, CO, and O<sub>2</sub>. Upon detecting gas levels exceeding the pre-defined thresholds, the system immediately alerts the personnel and relevant authorities via SMS, ensuring prompt action to prevent hazardous situations. The system's adaptive nature enhances safety measures, reducing the risk of gas exposure and improving the working conditions for sewage cleaning personnel.</p>
4		Detection, Inspection and analysis of hull corrosion using CNN		<p>This paper outlines a novel approach using Convolutional Neural Networks (CNNs) for detecting, inspecting, and analyzing hull corrosion. Traditional methods in the maritime sector are noted for their labor-intensive nature and susceptibility to errors, whereas CNNs offer automated capabilities for corrosion detection. The CNN model is trained on a comprehensive dataset of corrosion images, enhanced through preprocessing techniques. Real-time optimizations and integration of drone imagery improve efficiency and coverage, even in challenging maritime environments. A user-friendly interface is developed for professionals, enhancing accessibility and usability. Performance evaluation demonstrates the CNN model's accuracy and efficiency, indicating its potential to minimize costs and safety risks. Overall, the research underscores the efficacy of CNNs in transforming corrosion management, advancing safety and sustainability.</p>
9		Centralized monitoring system for streetlight fault detection and location tracking		<p>This project examines the development and implementation of a digital maritime record keeping system. Maintaining accurate and up-to-date records is essential for the maritime industry, but traditional paper-based systems are increasingly inefficient and error-prone. The report explores the key features and capabilities of a digital record keeping system designed specifically for maritime applications. This includes the ability to digitally log and store important documentation such as ship logs, crew manifests, cargo manifests, and port entry/exit records. The Data Base Management System(DBMS) built using react language for front end, MERN language for back end and a database management system (DBMS) for storing data of Engine Record Book(ERB), ORB1(Oil Record Book) and ORB2. The responsible engineer in charge will input readings daily or regularly. Afterwards, the Chief Engineer will review these values, assess the machinery's condition, and give approval. Once approved, the information will be updated either to the ship's owner or to the office for further action or record-keeping. This system helps keep track of important data about the ship's operations and ensures that everything is properly checked and recorded.</p> <p>The system also incorporates data analytics and reporting tools to enable more effective monitoring, auditing, and decision-making. The report discusses the potential benefits of adopting such a system,</p>

				including improved data integrity, enhanced regulatory compliance, streamlined operations, and better visibility across maritime supply chains. Additionally, the report covers the technical architecture, implementation considerations, and lessons learned from real-world deployments of digital maritime record keeping systems. Overall, the report concludes that digital record keeping represents a transformative opportunity for the maritime industry to modernize its information management practices and drive greater efficiency, transparency, and competitiveness.
10		Effective Management of construction and demolition waste		The design and fabrication of a crusher machine tailored for demolition waste management in construction endeavors to address the pressing need for efficient and sustainable waste disposal practices in the industry. This project endeavors to develop a versatile and robust crusher capable of processing a wide range of demolition waste materials, including concrete, wood, metal, and rubble. Through meticulous design considerations rooted in mechanical engineering, materials science, and waste management principles, the crusher machine will be optimized for performance, durability, and environmental responsibility. Emphasis will be placed on selecting durable materials, such as high-strength steel and abrasion-resistant components, to withstand the harsh conditions encountered during demolition waste processing while minimizing maintenance requirements. Innovative design features, such as adjustable crushing configurations and interchangeable components, will enhance adaptability to various demolition waste types and processing needs. Safety measures, including emergency stop mechanisms and protective enclosures, will be integrated to ensure the safety of operators and bystanders during machine operation. The fabrication process will prioritize cost-effective manufacturing techniques, such as machining and welding, while adhering to stringent quality standards and regulatory guidelines. Rigorous testing protocols will be employed to validate the performance, efficiency, and reliability of the crusher machine under realistic operating conditions. Ultimately, the development of this specialized crusher machine represents a significant advancement in sustainable waste management practices within the construction industry, offering a practical solution for reducing waste volume, conserving resources, and promoting environmental stewardship in demolition waste disposal processes.
11		Prevention of Bio fouling using shell waste		Chemical extraction offers a reliable method for obtaining chitin from shells. Chemical extraction stands as a well-established method for retrieving chitin from the abundant waste generated by crustacean shells. This multi-step process tackles various unwanted components in the shells to isolate the desired chitin. This process typically involves three key steps: demineralization, deproteinization, and sometimes deacetylation. The first step, demineralization, utilizes diluted acids

			<p>like hydrochloric acid to dissolve and remove calcium carbonate and other minerals. This treatment leaves behind a protein- chitin complex. Subsequently, deproteinization employs an alkaline solution normal uses sodium hydroxide and it is heated for 2hours for dissolving proteins. This step effectively isolates chitin from the remaining components. However, depending on the final product goal, an additional deacetylation step might be implemented. Here, concentrated sodium hydroxide transforms some of the acetyl groups present in chitin into amine groups, yielding chitosan, a derivative with unique properties. In this extraction process the efficiency of chitin extraction hinges on various factors. Shell pre-treatment methods, the specific chemicals chosen, their concentrations, reaction temperatures, and durations all significantly influence the yield and quality of the final chitin product. Optimizing these parameters is essential to achieve a successful extraction process. While chemical extraction offers a reliable approach and also has its own drawbacks. The use of hazardous chemicals and the generation of waste streams during the process are significant concern</p>
		Design and Analysis of Crank Shaft of Parallel Twin Engine	<p>The crankshaft is a critical component of any engines which is essential in converting linear motion to rotational motion that drives the machinery. Understanding the inner workings of the crankshaft is mandatory for improving their efficiency, power output and overall reliability. This research work involves modelling, dynamic analysis, shape optimization, conduction of transient structural analysis with the aid of computer aided software. This study presents a comprehensive analysis of the crankshaft of a parallel twin engine using finite element analysis (FEA) software ANSYS. The analysis begins with the modeling of the crankshaft geometry and material properties within the ANSYS environment. Various loading scenarios, including static loads, dynamic loads, and thermal loads, are considered to simulate realistic operating conditions. The finite element analysis results provide insights into the stress and deformation distributions across the crankshaft under different loading conditions. High-stress concentrations are observed at critical locations that are prone to fatigue failure and require careful attention during design optimization. Adjustments to the crankshaft's geometry or material properties may be necessary to mitigate resonance issues and improve overall structural performance.</p>
12		A Digital ship records management system	<p>This project examines the development and implementation of a digital maritime record keeping system. Maintaining accurate and up-to-date records is essential for the maritime industry, but traditional paper-based systems are increasingly inefficient and error-prone. The report explores the key features and capabilities of a digital record keeping system designed specifically for maritime applications. This includes the ability to digitally log and store important documentation such as ship logs, crew</p>

			<p>manifests, cargo manifests, and port entry/exit records. The Data Base Management System(DBMS) built using react language for front end, MERN language for back end and a database management system (DBMS) for storing data of Engine Record Book(ERB), ORB1(Oil Record Book) and ORB2. The responsible engineer in charge will input readings daily or regularly. Afterwards, the Chief Engineer will review these values, assess the machinery's condition, and give approval. Once approved, the information will be updated either to the ship's owner or to the office for further action or record-keeping. This system helps keep track of important data about the ship's operations and ensures that everything is properly checked and recorded.</p> <p>The system also incorporates data analytics and reporting tools to enable more effective monitoring, auditing, and decision-making. The report discusses the potential benefits of adopting such a system, including improved data integrity, enhanced regulatory compliance, streamlined operations, and better visibility across maritime supply chains. Additionally, the report covers the technical architecture, implementation considerations, and lessons learned from real-world deployments of digital maritime record keeping systems. Overall, the report concludes that digital record keeping represents a transformative opportunity for the maritime industry to modernize its information management practices and drive greater efficiency, transparency, and competitiveness.</p>
10		Safeguarding Aquatic eco system and waste identification by Underwater drone	<p>This project work describes a fabrication of this study presents a novel approach for the safeguarding aqua system and waste identification by using under water drone. Remotely operated vehicles (ROVs) allow humans to take pictures, videos, and scientific samples of underwater life and habitats while safely operating the vehicle from a boat or from shore. In this project you will design and build your own small ROV that you can test in a bathtub, pool, or nearby body of water. and in this project you will build your own small ROV using a plastic food storage container and an Arduino. The project instructions will provide you with the basic design, parts list, circuit diagram, and code to build a simple ROV with motors.</p>

**J. Participation of IIC-institute in various programs of Central and Stage Govt. Highlighting specially for the schemes or programs**

- NISP Adoption status - Trained Faculty, Policy Formulation, Policy Implementation
- Smart India Hackathon etc.
- YUKTI Innovation Challenge

**K. Detail of Social Media &Connections of IIC institute**

- i. Website: <https://www.sitmng.ac.in/>
- ii. Twitter: <https://twitter.com/sitmangalore>
- iii. Facebook: <https://shorturl.at/pryLQ>
- iv. Instagram: [https://www.instagram.com/p/Cq2GT58ru3D/?img\\_index=1](https://www.instagram.com/p/Cq2GT58ru3D/?img_index=1)

**L. Testimonials from IIC members and external about IIC institute and IIC of MoE's Innovation Cell**

- i. *“The Institute has a well-oiled group of clubs that provide the thrust for innovative thinking. I commend the work of the management, principal, staff and the students in creating such an atmosphere.”* Mr. Bajpe Zakaria, CEO, AI-Muzain
- ii. *“There is so much potential within the young family members that such a club will surely help inculcate innovative ideas in them.”* Dr. CA Sri. Raghavendra Rao, Chancellor – Srinivas University, President -A Shama Rao foundation,

**M. Images**

**N. Contact :** <https://www.sitmng.ac.in/Contact-Us/Contact>



Convener

(Dr Ramakrishna N Hegde)

