PROFORMA FOR SUBMISSION OF PROGRESS REPORT

Name of HI/NewGen IEDC : NewGenIEDC-Ramachandra college of engineering

Name of the Chief Coordinator :K.Venkatesh

Period under Review :2018-19

1. Initiatives/Activities Undertaken as per the Action Plan Submitted:

[A] To inculcate the spirit of innovation and entrepreneurship amongst S&T students

Sr. No.	Activities	Outcome/Achievements
1.	Entrepreneurship Development Program	• Create Awareness on Entrepreneurship Development. • Information given about government schemes MSME & KVIC. • Successful Entrepreneurs shared their experiences with the students. • Advised students to identify the local domestic, agriculture, industry, individual problems and work on it.
2.	Women Entrepreneurship Development	• Importance of women as an Entrepreneur. • Schemes of assistance& support available from government to women entrepreneurs. • Successful women entrepreneurs shared their experiences with the students.
3.	Entrepreneurship & Intellectual Property Rights	• 10 teams are in process to file patents
4.	Entrepreneurship Awareness Program	• Entrepreneurial development programme (EDP) is a way to achieve the aforesaid goal. EAPs are planned programmes developed to identify, inculcate, cultivate, develop, and polish the capabilities and skills as the prerequisites of a person to become an entrepreneur. Students Motivated and Come with

		Society problem solve Technology for Next year Project proposals

[B] To identify, develop & commercialize students' innovative ideas

Sr. No.	Activities	Outcome/Achievements
1.	IU-Tech Summit-2019, Narsapuram. Got Appreciation certificate and Prize for Technology enhancement in current trends	4 Projects exhibited in IU-Tech Summit Drone technology, Electric vehicles, Batteries, Fixtures, BLDC Motors. Got prize
2.	I-Tec, Reva University, Bangalore. Organized by IIC, MHRD.	Six Project Teams participated in contest and one project of Low cost battery production project Team got first prize for their technology
3.	Conducted Drone Technology Awareness camps in rural areas	Awareness camps conducted in 5 villages to create awareness about our product and marketing. (Darmajigudem, Singannagudem, Pinakadimi, Duggirala, Vatluru Villages)
4.	Smart India HACTHON	SIH Organized to develop problem solve capability to student

[C] To enhance Industry-Academia interaction

Sr. No.	Activities	Outcome/Achievements
1.	Interaction session with Aha 3D-Founder, CEO, Jaipur.	Program designed to Motivate the students to start a start-up and about 3D printing Technology
2	Interaction and training Program with Dr.Chandra sekhar, Program Director, Addwize,WIPRO-3D Bangalore,	Industry Interact session at Wipro Bangalore to analyze and to Know the current trends in Manufacturing.
3.		

2. Deviation (shortfall) from the proposed action plan (with reasons), if any:

- **No Deviation as per the given schedule.**

3. Other important highlights (new initiatives), if any:

a) Given awareness on entrepreneurship, patents to 2000 participants
b) Conducted Workshop on innovation-aqua culture.
c) 15 Days Training Program on Machine Learning
d) Conducted Workshop on Drone Technology
e) Organized Technical program on Additive manufacturing Technology

4. Student Projects (Please provide the following details for each student project)

Sr. No.	Team/Project Description	Project status at beginning of the Year	Interventions Made	Current Status
1	**Project Title :** Automatic Self Booking Cylinder **Team Members** K. Yasaswini S.Moulika Preethi M.SaiKrishna Mohan P. Pavan Sai **Mentor : Jagan Mohan Rao S.** **Project Description :** The main objective of our project is to measure the weight of the gas cylinder continuously, and to book the new refill automatically by sending an SMS to the gas agency, as soon as the gas reaches to a set value	Idea to implement	With the idea, we developed the prototype with Arduino and load cells, which is working satisfactorily. Tested with 50 kg single load cell (Cantilever beam). Also tested with 4X10 kg load cells (bridge) and working satisfactorily. We tested the heat run test also.	Prototype model with Arduino is working satisfactorily. Also modified the device with Node MCU and trying to connect with Mobile, in order to reduce the cost of product.

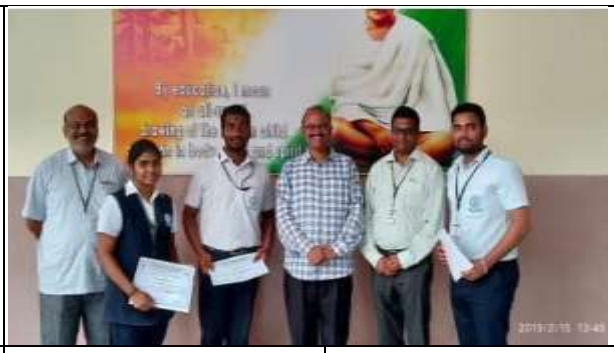
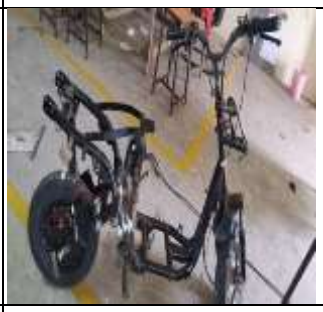
	Photos			
2.	**Title of Project:** Industrial Safety Helmet **Team Members :** M. Vamsi Srinivas N.M.V.Sai Kumar P.Sata vani sri M.Pooja **Mentor :** Jagan Mohan Rao.S **Project Description** The main objective of our project is providing immediate medical assistance to employees/workers in work place environments such as industrial or construction sites, when he/she meets an accident, due to falling objects or impact with other objects or accidental falling down or falling down because of illness, by alerting the medical team	Idea to implement	With the idea, we developed the prototype with Arduino and 3D accelerometer for the safety helmet. Initially, we faced technical issues in integrating the accelerometer in 3 dimensions. Later, we succeeded and the developed model is working satisfactorily. We tested the heat run test also. In order to make commercialize, we thought of making it as a complete safety system suitable for all the employees in an industry. We changed the concept. The has to work with Wi-Fi integrated microcontrollers and with a single alerting system. Now we are working on the same and succeeded to the integration of helmet with Node MCU and 3D accelerometer. Testing and development of is in process.	Prototype model with Arduino is working satisfactorily. Also modified the device with Node MCU and trying to connect with centralized microcontroller, in order to reduce the cost of complete safety system.

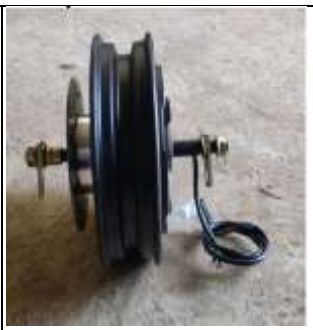
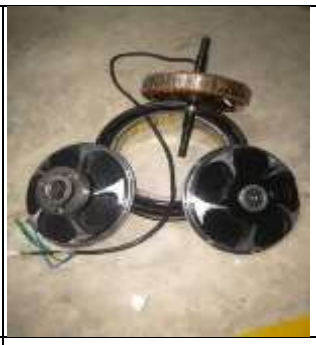
	Photo			
3.	**Project Title :** Pulse in your hand using wireless communication **Team Members :** S.JanaPriya N.Indira S.Divya Bindu V.L.Anitha **Mentor :** Sudhakar.P **Project Description** Pulse in your hand using wireless communication To design a system which continuously monitors the pulse rate of a person and notifies his family member if the condition is serious? It also requests the nearest hospital for an ambulance facility. When person was effected went outside then his location will be traced. Moreover the condition of the patient regarding BP, pulse rate can be seen in a mobile application. Owing to	Idea with Theoretical analysis	a.Adopted GPS technology b.Implemented GSM Technique c.Pulse sensing with Optic sensor structure	Developed working model Prototype

	late diagnosis of heart attack we are inadequate to save the lives of many humans.			
	Photos			
4	**Title of Project:** Designing Of Dc-Dc Converters , Chargers , Digital Multimeters For Electrical Vehicles. **Team Members** 1.Gantasala Pavan 2.K.Pavan 3.Putti Tulasi 4.P.Ratna Kumar 5.Gollapudi sowmya **Mentor :** Dr. Dola Sanjay .S At present we are working on DC-DC Converters. The input of this Converter is connected to the battery which voltage is about 36volts-72volts dc.The output of this converter is connected to operate low voltage devices which voltage is about 12volts dc. In the market the cost of the converter is a bit high. So we need to design this with	Ideology stage	The higher quality charger, converters & controllers are designed for electric scooty & bikes	Proto-type is developed and planning for mass development.

	low cost and with good reliability and quality			
	Photos			
5	**Title of Project:** Designing of Fixtures for moped electric vehicles **Team Members:** S.Bharath, K.Chaitanya Varma, B.Sujith, P.Madhubabu, P.Harika, **Mentor :** V. IndraTeja **Project Description:** Due to increase of pollution & decrease of fossil fuels, the interest towards electric vehicles is increasing day by day. Even though there are various new electric vehicle growth is slow. The major reasons for the slow growth is the customers are not willing to switch over to electric vehicles from traditional combustion engine since its efforts more money as well as un-usage of existing	Ideology stage	The structure of the chassis is redesigned for retrofitted electric vehicles.	Proto-type is developed and planning for mass development

	combustion vehicles.			
	Photos			
6	**Title of Project**: Pro MAC –Progressive Mechanised Air conditioning system **Team members :** G.Uma Naveen D Ravi sai E.Novah G.Sumanth **Mentor:** Bhavanarayana.K **Project Description :** Developed a technology to save the electrical energy by increase the efficiency of Air conditioner system. In the study of sub cooling technology, theoretically proved it has the feasibility to work in Ac. Air conditioner works on Vapour compression cycle our technology is placed in condenser.	Idea with Theoretical analysis	a. Adopted Sub cooling technology b. Implemented Evaporative cooling Technique c. Cooling pads with honey comb structure	Developed working model Prototype
	Photos :			

7	**Title of Project:** Construction Of Low Cost Brushless Dc Motor For Moped Electric Vehicle **Team Members:** 1 P. Jaya Ram 2.B.Sowjanya 3.K.KusumaPriya 4.Ch.Nagaraju 5.G.Yamuna 6.B.Nanaji **Mentor:** Dr. Suryanaryana.V **Project Description:** •When converting electricity into mechanical power, brushless motor are more efficient than brushed motor. It is due to better performance of position sensor. •Under high mechanical loads, brushless motors high efficiency. •The major drawback in brushless Dc motors is expensive than brushed Dc motors. •The various types of sensors used in BLDC motors are optical sensors, Magnetic sensors, Hall sensors and Capacitive sensors .	Ideology stage only .	The higher quality motors are designed for electric scooty & bikes.	Proto-type is developed and planning for mass development

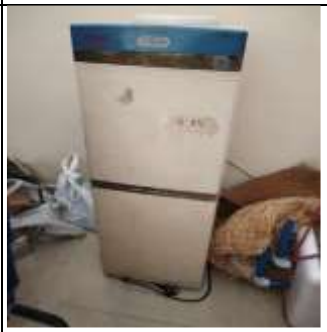
	Photos			
8.	**Title of Project:** Drone Technology for Pesticide Spraying **Team Members:** P. Sai Harish G. Chiranjeevi **Mentor :** Mr.P Rajesh **Project Description :** •An agricultural drone is an unmanned aerial vehicle applied to farming in order to help increase crop production and monitor crop growth. •By implementing drone technology, farms and agriculture businesses can improve crop yields, save time, and make land management decisions that'll improve long-term success. • Farmer's today have a variety of complex factors that influence the success of their farms. From water access to changing			

	climate, wind, soil quality, the presence of weeds and insects, variable growing seasons, and more.			
	Photos :			
9	**Title of Project:** Fire and Smoke Detection in Tobacco Barren **Team Members :** Gaayathre G.LeelaDeepthi J.SravaniDurga B.P.Nagaambica Afreen Begum P.RaniSalomi K.Goutham M.N.R.S.Kamesh **Mentor :** Dr.M.N.Rao **Project Description:** To detect fire and smoke issues in tobacco using fire detection system.The innovative idea of our project, Many of the farmers where commiting suicide So we came with a idea that is nothing but a Fire and Smoke Detection In	Idea with theoretical analysis	Added Water Sprinklers	Developed working model prototype

	Tobacco Barren.When the fire detects in the tobacco barren fire detector detects the fire and we are using sprinklers which are used to sprinkle the water.The sprinklers won't sprinkle the water entire tobacco barren it only sprinkle where is the starting of a fire we place a nozzle at a certain place.So, That the nozzles will activate the and start sprinkling the water.So the tobacco barren won't be filled with water			
	Photos :			
10	**Title Of Project :** **Team members :** M V S R Sudheer SK Kalesha Y K Kalyan I Venkateswara Rao **Name of the Mentor** : Mr. V Nagarjuna **Broad Area of the project** Aquaculture Technologies **Project Description**	Theoretical Analysis with Idea		

	: Optimal Recirculation aquaculture systems (ORAS) represent a new and unique way to farm fish. Instead of the traditional method of growing fish outdoors in open ponds and raceways, this system rears fish at high densities, in indoor tanks with a controlled environment. Recirculating systems filter and clean the water for recycling back to fish culture tanks			
	Photos :			
				
11	**Title of Project :** Plastic to fuel conversion	Theoretical Analysis with Idea	Evaluated the existed conversions Developed a simple	Proved prototype setup for

	Team members : **Mentor : S.Sarma** **Project description :**		condenser Optimized the condensation process	plastic to fuel conversion technology
	Photos :			
12	**Title of Project :** Advanced Thermoelectric water cooler **Team members :** **Mentor :** K.Venkatesh **Project Description :** Basically we are using refrigerators for extract heat from any object, process is well known as refrigeration a refrigerant is working fluid to produce chilling effect, it consist of chlorofluorocarbons etc., it causes effect on environment when it was escaped to atmosphere: by eliminations the refrigerant in refrigeration process it will helps to save environment in one small factor. To overcome this problem we have to develop a refrigerator without refrigerant. By using	Idea to develop in to prototype	Different variant of models evaluated according to capacit	Prototype developed

	peltier effect we aim to develop a system without a refrigerant. In the presented paper we make research on peltier based refrigeration to avoid above mentioned **drawbacks**			
	Photos :			
13	**Project Title:** CIL cards(comapct information and live location). **Team Members :** G s s v vijaydeepak K sai sruthi J goutham sree ram P eswar kumar **Mentor name** G.Hari Hara kumar **Project description** The project is dealing with the complete information about the student's education and the live location of the particular student. The data is available to the parent by scanning a QR code that is assigned to the specific student.	Collect data from the schools and make website and generate QR codes.	Data implementation technique is change by software change	-Location has to be set into the id cards. -ID With software tagging is completed - Product ready with different variants of options
	Photos:			

				
14	**Title of Project :** Wireless Communication Network For Building Monitoring **Team members :** **Mentor :** R.Mehar Chaitanya, U. Venu, D. Sai Teja, A.Chandu Kumar, G.Sai Thrilok **Project Description :** Advanced Design of Wireless Communication Network for Building Monitoring Apartments, Multiple storied buildings, Large Government offices, Shopping malls, Large educational institutions etc, where large people residing and servicing.	Idea to develop in to prototype	Different variant of models evaluated according to capacity	Prototype developed
	Photos:			

15	**Project Title :** Battery pack Assembling Unit for Electric vehicles and Drones **Team Members :** S. Tej mani pavan Ch. Chaitanya K. Krishna sashank K.Chaitanya Varma **Mentor :** Dr.J.Ranga **Project Description :** From the time Electric Vehicles (EV) came in to Indian market, the growth is slow but steady. This is due to huge initial cost. ▪Nowadays, the most expensive part of an electric vehicle is the battery, which represents 25 ... 50 % of the price of the electric vehicle, depending of the technology used. ▪A decrease in the acquisition price of the electric vehicles is mandatory until it reaches a level closer to that of the internal combustion engine vehicles. ▪Which will determine a significate decrease in the acquisition price of the electric vehicles. ▪The costing of	Idea to develop prototype	Improved 1st prototype and conducted durability and some other tests on the battery pack and obtained best results	We are at the stage of start-up ,once if we commenced with start-up we can accelerate our sales into market

	batteries is reducing in recent days but still it shares the major cost ▪The pricing of battery can be reduced by importing the cell of thebatteries and then assembling them			
	Photos:			

- Submit three/four high resolution (at least 300 dpi) pics in jpeg format showing the prototype/product along with the students and their mentor

5. Provide a minimum two page case-let each on the two best student projects (either prototype developed or commercialized) from the above list. The case-let should include:

- Student team details (with contact information)
- Brief description about the student start-up
- Startups entrepreneurial journey from ideation to prototype or commercialization along-with 2-3 high resolution photographs
- Contribution of NewGen IEDC in the same
- Future plan

PROFORMA FOR SUBMISSION OF PROGRESS REPORT BEST PROJECT-1

1. **Title of Project: Pro MAC –Progressive Mechanised Air conditioning system**

2. **Team Details**

Project Batch members:				
Sno	Roll no	Name	Email id	Mobile
01	17ME5A0311	Uma Naveen Kumar	umanaveen0772@gmail.	33039416
02	17ME5A0309	D.Ravi sai	udiravisai217@gmail.com	86869938
03	17ME5A0310	E.Novah	kanovah@gmail.com	86776458
04	17ME5A0312	G.Sumanth	llapallisumanth123@gmail	31854822

Details of The Mentor				
.no	**Name**	**Designation & department**	**Email id**	**Mobile**
	Bhavanarayana.K	Assistant Professor, Mechanical Dept	havanarayanakotte@gmail.com	8333039416

3. **Project Description**

Air conditioning (often referred to as **AC**, **A/C**, or **air con**) is the process of removing heat and moisture from the interior of an occupied space, to improve the comfort of occupants. Air conditioning can be used in both domestic and commercial environments. This process is most commonly used to achieve a more comfortable interior environment. In further days AC are becoming essential appliance for human, But AC electricity consumption is very high it will state a impact on power demand and financially. We aim to develop a technology to save

the electrical energy by increase the efficiency of Air conditioner system. In the study of sub cooling technology, theoretically proved it has the feasibility to work in Ac. Air conditioner works on Vapour compression cycle our technology is placed in condenser. **Objective**: Developing a technology to save the electrical consumption in Air conditioners.

The market (the size of the market and its growth potential): We can clearly observe that how the air conditioners become a necessary appliances in our daily life. In the present market air conditioners are available with 2 to 5 star rating and recently inverter air conditioners are also available. This technology representing that air conditioners have low energy consumption and those will save energy. As compared that our product gives higher savings of electricity. When this product is fixed to inverter air conditioner then also it will saves energy. So, by this entire analysis we can easily estimate how much market potential our product has. Cost of product is 2000/-, It is also an additional feature and it will become best product with less cost.

4. **Project status at beginning of the Year**

   Idea with Theoretical analysis

5. **Interventions Made**

a. Adopted Sub cooling technology

b. Implemented Evaporative cooling Technique

c. Cooling pads with honey comb structure

6. **Current Status of Project**

   Developed working model Prototype

7. **Brief description about the student start-up**

    a. . Conduct demonstration features of this product to customers and dealers

    b. conduct awareness program about this product to village peoples

    c. Printing and distribution of brochures

    d. Tie up with local Suppliers and dealers

    e. Creating publicity to our product at national level to get more investment for further development and up gradation.

8. **Start-up entrepreneurial journey from ideation to prototype or commercialization along-with 2-3 high resolution photographs**

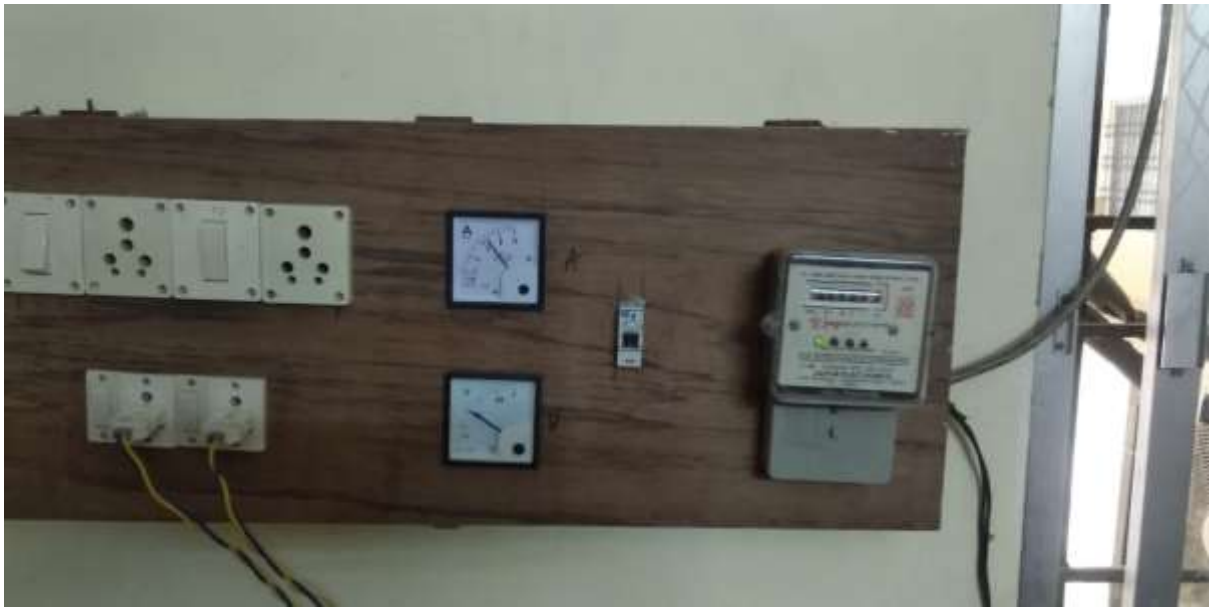
9. **Contribution of NewGen IEDC in the same**

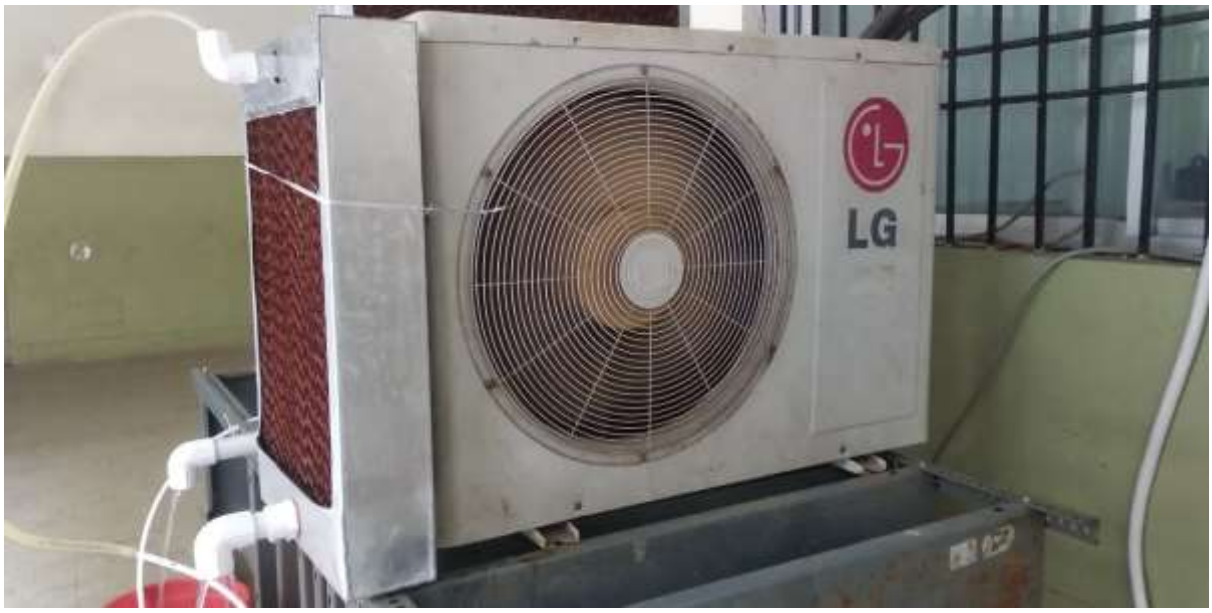
New GEN IEDC channelizes our knowledge and the energy of our team towards becomes active partners in the economic development process. It catalyzes and promotes development of knowledge-based and innovation things in my team and it help us to promote employment opportunities among the students

10. **Future plan**

Starting a start up by acquiring fund from financial support banks etc

11. **Submit three/four high resolution (at least 300 dpi) pics in jpeg format showing the prototype/product along with the students and their mentor**

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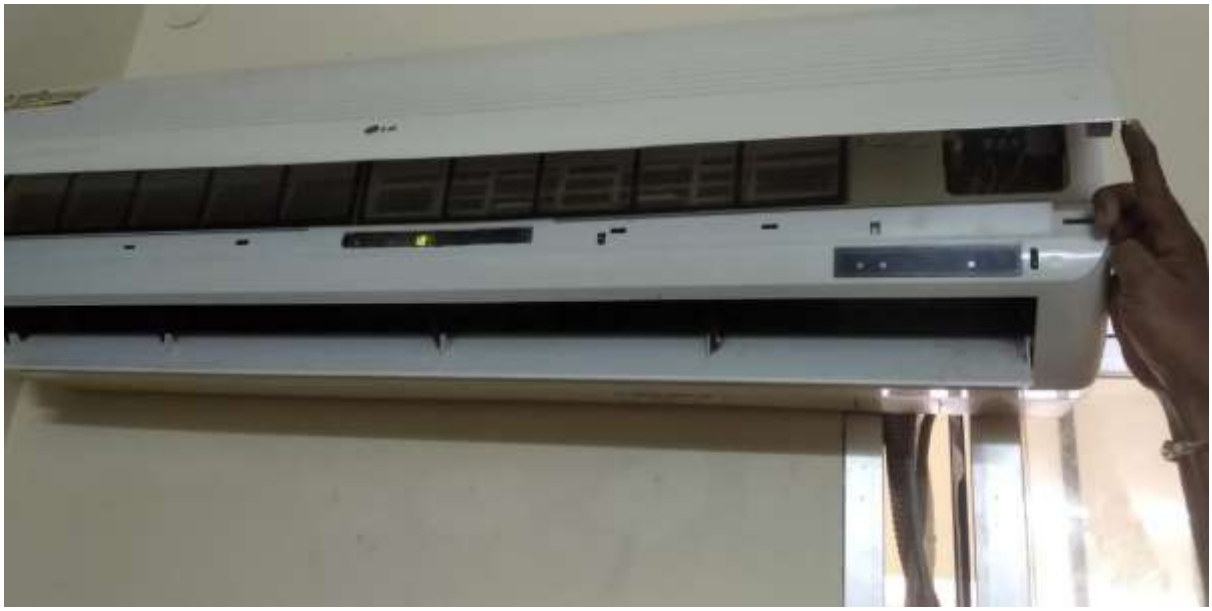


12. Other important highlights

Air conditioning (often referred to as **AC**, **A/C**, or **air con**) is the process of removing heat and moisture from the interior of an occupied space, to improve the comfort of occupants. Air conditioning can be used in both domestic and commercial environments. Based on analysis Ac consumes 2 unit energy per hour.

On average in domestic usage AC working hours = 5hr/day.

Total consumption =10 units/day.

Buy installation of Pro MAC technology in AC we can save 2.1 units/day on the basis of 5 hours of working per day.

PROFORMA FOR SUBMISSION OF PROGRESS REPORT BEST PROJECT-2

Title of the Project: Optimal Recirculation Aqua System

Project Batch members				
Sno	Roll no	Name	Email id	Mobile
01	17ME5A0322	M V S R Sudheer	Sudheermallapureddy 595@gmail.com	7013592071
02	16ME1A0385	Y K Kalyan	courageouskalyan@g mail.com	9494499255
03	17ME5A0302	A Yashwanth Sai	Yash.amruthaluri@g mail. com	8074542486
04	16ME1A0350	I Venkateswara Rao	Ivenkatesh352@gmai l .com	8639268280

Details of The Mentors				
S.no	Name	Designation & department	Email id	Mobilenumber
01	Mr V Nagarjuna	Associate Professor- Mech(Dept)	nvalleboyina@gmail.co m	8978571600
02	Dr. J S Suresh	Head Of Department - Mech	mechhod@rcee.ac.i n	9848499599

Optimal Recirculation aquaculture systems (ORAS) represent a new and unique way to farm fish. Instead of the traditional method of growing fish outdoors in open ponds and raceways, this system rears fish at high densities, in indoor tanks with a controlled environment. Recirculating systems filter and clean the water for recycling back to fish culture tanks. This report, Recirculating Aquaculture Systems, provides an introduction to Recirculating Aquaculture Systems (RAS). This closed-loop fish farming facilities that retain and treat water within the systems. This form of aquaculture is quickly gaining popularity in the United States. Recirculating Aquaculture Systems also provides commercial case studies of existing successful RAS operations in the United States. Optimal Recirculation aquaculture systems (ORAS) represent a new and unique way to farm fish. **Instead** of the traditional method of growing fish outdoors in open ponds and raceways, this system rears fish at high densities, in indoor tanks with a "**controlled**" environment. Recirculating systems filter and clean the water for recycling back through fish culture tanks. Land-Based Recirculating Aquaculture Systems, provides an introduction to Recirculating Aquaculture Systems (RAS). RAS are closed-loop fish farming facilities that retain

and treat water within the systems. This form of land- based aquaculture is quickly gaining popularity in the United States. Land-Based Recirculating Aquaculture Systems addresses why RAS could be an important method of producing more fish for the United States; highlights research, development and technical innovations in RAS; and discusses concerns and recommendations for the future of these systems. Land-Based Recirculating Aquaculture Systems also provides commercial case studies of existing successful RAS operations in the United States.

Consumer demand for cleaner, greener, safer seafood is on the rise. Many popular fish, like tuna, cod and certain snapper are depleted in the wild from many years of poor management, overfishing and other ecological problems like pollution and damage to key habitat areas. There is a need to supplement wild-caught fish to meet consumer demand for seafood. One method to produce more fish is known broadly as aquaculture — the rearing of aquatic animals in captivity. Aquaculture is also often called “fish farming,” as it can be likened to the farming of other food animals, like chickens, pigs and cattle. Aquaculture is increasing worldwide; between 2004 and 2006 the annual growth rate of this industry was 6.1 percent in volume and 11 percent in value. Fortunately, RAS can likely provide a cleaner, greener, safer alternative to open-water farms that does not compete with other ocean uses. These systems are usually land-based and reuse virtually all of the water initially put into the system. As a result, RAS can reduce the discharge of waste and the need for antibiotics or chemicals used to combat disease and fish and parasite escapes — all serious concerns raised with open-water aquaculture

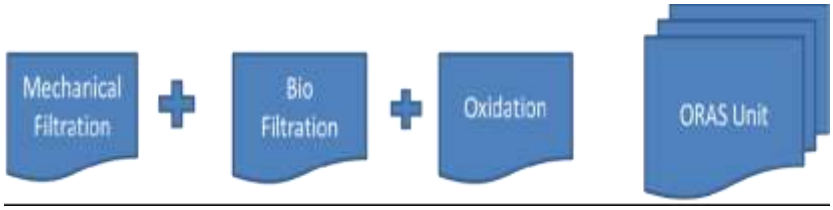
This technology/process is classified into 3 different stages:-

Mechanical Filtration: Solid waste are separated from the waste water. In this project we used a old and effective conventional filtering method using various sizes of metal and sand.

Bio-Filtration : Ammonia contaminants are separated from water. Here we are using fab media and bio-balls in large quantities to create area for growing nitrification bacteria with converts ammonia into nitrites and nitrates.

Oxidation : Oxygen was added to the water. Here we use blowers to pump oxygen from the atmosphere to the deep water using air tubes and air stones for effective

dissolve of oxygen into air. Thus, the waste water is turned into normal water by using this 3 stage process and we name it as**"Optimal Recirculation Aqua System".**



Current status of the project

Using the prototype of the ORAS unit we conducted live analysis with around 9000 fishes in a pond with a volume of 3 lakh litre's of water for around 5 months of span.

The ORAS unit can actually filters the whole volume of the pond in about 36 hours and continuously turning the pond into fish friendly environment by reducing the solid waste , ammonia contaminants and also it balancing the oxygen levels in the pond.

And the growth of the fishes are also satisfactory but depending on the results we can improve the growth of the fishes for further by taking some extra measures.

Brief description about the student startup

From the Project ORAS (Optical Recirculating Aqua System) we are going to develop a Unit which supports aqua formers to farm their fishes at higher density with lower volume of area and water. And also reducing in chemicals with are used in conventional methods.

Our idea is to combine all the three filters into an unibody structure without any efficiency drop and also making it into cost effective for the customers (aqua farmers). For that we want to establish a start-up which has the capacity of building and assembling of various components used for our ORAS unit.

Start-up entrepreneurial journey from ideation to prototype

Start-up entrepreneurial journey from ideation to prototype

Contribution of NEWGEN IEDC

Actually NewGen IEDC RCE was the first board which identifies our idea and understand our proposal and their support us in every aspect from the beginning of the project ORAS prototype , In the Analysis of the outcomes of the project, Keeping safe the project 24/7 by providing us required security to it.

Future Plan

As we know that the aqua related exports from our country is **high and gradually** increasing every year.

Aqua farmers are high in number for example in our state we have around 65,000 ponds so, by implementing our Project/Product they can **easily double their production**.

AP itself having a great market for our product due to our neighbouring districts has approx more than 5000 ponds for aquaculture. So we make ORAS unit to cover the maximum market and production of the aqua culture by supplying our newly designed ORAS unit into the market.

6. Minutes of the Advisory Board Meetings (held twice a year):

a) Action and Activities Plan for A.Y-2018-2019.
b) Interaction with student projects and giving suggestions to their ideas

1. Progress Summary

1	**Total number of Student Projects supported**	15
2	**Total fund provided towards supporting Student Projects**	37,50,000
3	**No. of Patents filed by students (Refer Enclosure)**	10 patents In process of filing. The process will be completed in 20 days
4	**No. of Patents Granted**	-----
5	**No. of companies/Starts up Set up by Students (Refer Enclosure)**	3 startups are ready to register.