

Mech'Časopis

Edition 5
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(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)

S.P.G.Chidambara Nadar - C.Nagammal Campus

S.P.G.C.Nagar, K.Vellakulam - 625 701, (Near Virudhunagar), Madurai District.

DEPARTMENT OF MECHANICAL ENGINEERING

ACCREDITED BY NBA, NEW DELHI

Mech'Časopis

CONTENTS

Particulars	Page No.
• About the department	1
• About Mech'Časopis	2
• Vision & Mission Statement	3
• PEO & PSO Statement	4
• Students Corner	5
• Events Organized	9
• Students Achievements	21
• Faculty Achievements	22
• Alumni Corner	27
• Editorial Team	29

ABOUT THE DEPARTMENT OF MECHANICAL ENGINEERING

THE DEPARTMENT OF MECHANICAL ENGINEERING WAS STARTED IN THE YEAR 2005 OFFERING THE BACHELOR'S DEGREE UNDER ANNA UNIVERSITY AND POST GRADUATE DEGREE OF MASTER OF ENGINEERING IN MANUFACTURING ENGINEERING IN THE YEAR 2012. THE DEPARTMENT HAS 25 FACULTY MEMBERS, WHO ARE HIGHLY QUALIFIED IN DIFFERENT AREAS OF SPECIALIZATION AND DEDICATED THEIR PROFESSION FOR THE STUDENTS. AMONGST THAT, 3 FACULTY MEMBERS HOLD THE 2018 -9 DOCTORATE DEGREE AND ALSO RECOGNIZED AS SUPERVISORS FOR GUIDING PH.D.

THE DEPARTMENT IS NOURISHED WITH THE MODERN EQUIPMENT AND COMPUTING FACILITIES WITH THE LATEST VERSION OF SOFTWARE VIZ., ANSYS, SOLIDWORKS, FEMAP NASTRAN, NX CAD CAM CAE, MASTERCAM AND AUTODESK INVENTOR. VALUE ADDED COURSES ARE PROVIDED FOR THE STUDENTS. OUR DEPARTMENT IS AN ANNA UNIVERSITY RECOGNIZED RESEARCH CENTRE.

About Mech'Časopis

The name Mech'Časopis is taken from the Croatian language; Časopis (Pronounced as Chasopis) means Newsletter. This newsletter brings the outline of the students and faculty achievements with the activities of the department.

Mechanical Engineering

VISION

TO MAKE DEPARTMENT OF MECHANICAL ENGINEERING THE UNIQUE OF ITS KIND IN THE FIELD OF RESEARCH AND DEVELOPMENT ACTIVITIES IN THE PROMINENT FIELD OF MECHANICAL ENGINEERING IN THIS PART OF THE WORLD

MISSION

TO IMPART HIGHLY INNOVATIVE AND TECHNICAL KNOWLEDGE IN THE FIELD OF MECHANICAL ENGINEERING TO THE URBAN AND UNREACHABLE RURAL STUDENT FOLKS, THROUGH "TOTAL QUALITY EDUCATION".

Mechanical Engineering

PROGRAM EDUCATIONAL OBJECTIVES

PEO1 - GRADUATES OF THE PROGRAMME WILL EXCEL IN TECHNICAL KNOWLEDGE AND APPLY INNOVATIVE SKILLS IN THE FIELD OF MECHANICAL ENGINEERING.

PEO2 - GRADUATES WILL CONTRIBUTE TO TECHNOLOGICAL DEVELOPMENT AND RESEARCH ACTIVITIES THROUGH "TOTAL QUALITY EDUCATION".

PEO3 - GRADUATE OF THE PROGRAMME WILL ACCOMPLISH LEADERSHIP QUALITIES AND SOCIAL RESPONSIBILITIES THROUGH "LIFE LONG LEARNING".

PROGRAM SPECIFIC OUTCOMES

PSO1 - GRADUATES WILL BE ABLE TO CREATE AND ANALYSE THE RESEARCH AND DEVELOPMENT ACTIVITIES RELATED TO DESIGN AND MANUFACTURING.

PSO2 - GRADUATES WILL BE ABLE TO DESIGN, DEVELOP NEED BASED PRODUCTS IN MECHANICAL ENGINEERING AND ALLIED INDUSTRIES.

STUDENT'S CORNER - TECHNICAL ARTICLE

DESIGN AND FABRICATION OF PESTICIDE SPRAYER USING QUAD COPTER.

S. NO.	ROLL NO.	TEAM MEMBERS
1	16UMECO45	VIGNESHWARAN.T
2	16UMECO59	RAJESH KANNAN.S
3	16UMECO87	SAYATHU ABTHAKIR.A

PROJECT SUPERVISOR
DR.S.S.SARAVANA KUMAR, M.E., PH.D.,

ABSTRACT

IN AGRICULTURAL FIELDS, THE USE OF PESTICIDES IS NECESSARY FOR BETTER CROP YIELDS. AN AUTOMATED AERIAL PESTICIDE SPRAYER IS BASICALLY QUAD COPTER WITH PESTICIDE SPRAYING MECHANISM. THIS PROJECT IS TO MAINLY OVERCOME THE ILL-EFFECTS OF PESTICIDES ON HUMAN BEINGS (MANUAL PESTICIDE SPRAYERS) AND ALSO TO COVER LARGER AREAS OF FIELDS WHILE SPRAYING PESTICIDES IN A SHORT SPAN OF TIME WHEN COMPARED TO A MANUAL SPRAYER.

DESIGN AND FABRICATION OF PESTICIDE SPRAYER USING QUAD COPTER.



DESIGN AND FABRICATION OF TORQUE MULTIPLIED NUT RUNNER USING COMPOUND GEAR TRAIN

S. NO.	ROLL NO.	TEAM MEMBERS
1	16UMECO20	R. ABISHEK
2	16UMECO40	M. HARISH KUMAR
3	16UMECO56	K. VIGNESH

PROJECT SUPERVISOR

DR.S.S.SARAVANA KUMAR, M.E., PH.D.,
ABSTRACT

- NUTS AND BOLTS ARE USED TO CONNECT MOST OF THE MECHANICAL COMPONENTS. THESE FASTENERS ARE USED DUE TO THEIR LESS COST AND EASE OF REPLACEMENT AND INSPECTION. NUT RUNNERS ARE IMPORTANT TOOLS USED FOR FASTENING NUTS AND BOLTS.
- TORQUE REQUIRED FOR TIGHTENING DEPENDS UPON THE APPLICATION WHERE THE FASTENER IS USED. THOUGH THERE ARE SEVERAL TYPES OF NUT RUNNERS ARE AVAILABLE IN THE MARKET,

- THEY DON'T MULTIPLY THE INPUT TORQUE I.E., WE HAVE TO GIVE THE MAXIMUM AMOUNT OF TORQUE WHICH WILL BE REQUIRED TO FASTEN THE NUT AS INPUT.
- THE TORQUE REQUIRED FOR FASTENING NUTS OF HEAVY LOAD APPLICATIONS SUCH AS TRUCK WHEELS (350 - 500 NM) AND FOR CAR WHEELS (150 - 200 NM). IT IS NOT POSSIBLE FOR EVERYONE TO GIVE THIS MUCH INPUT TORQUE. SO THE CONVENTIONAL NUT RUNNERS BECOME OBSOLETE.
- WE HAVE TO GO FOR A DEVICE WHICH WILL MINIMIZE OUR WORK.
- HENCE IT IS DECIDED TO DESIGN A DEVICE WHICH WILL MULTIPLY THE TORQUE WHICH WE GIVE AS INPUT AND PROVIDE A HIGHER TORQUE AS OUTPUT.
- THIS IS ACHIEVED BY USING GEAR TRAIN MECHANISM. GEARS ARE WELL KNOWN FOR THEIR BETTER POWER TRANSMISSION. USING PROPER ALIGNMENT OF GEARS, WE CAN MULTIPLY THE TORQUE AND GET BETTER OUTPUT. THIS WILL BE COST EFFICIENT AND IT WILL PROVIDE BETTER OUTPUT..

EVENTS ORGANIZED 2019 20



Guest lecture on “Ultra High vacuum machine and its applications on single crystal metal surfaces” on 02/07/19 by Dr.S.Nagarajan, Assistant Professor, Department of Chemistry NIT – Manipur.

EVENTS ORGANIZED 2019 20



Seminar on “Design Build Test using CATIA Portfolio”
on 03/07/19 by Mr.R.Nandha Kumar,
Product Head, ITA, CADD Centre, Chennai.

EVENTS ORGANIZED 2019 20



Department of Mechanical Engineering Workshop on Intellectual property Rights & Patent Drafting on 17.07.19

Workshop on Intellectual Property Rights and Patent Drafting on 17/07/19 by Mr.P.Balamurugan, Deputy controller, Patent office, Chennai.

EVENTS ORGANIZED 2019 20



SAE Sponsored Seminar on “Supply Chain Management”
on 03/08/19 by Mr.K.Sivakumar, General Manager-
Materials, Tractors and Farm Equipment Ltd (TAFE),
Madurai.

EVENTS ORGANIZED 2019 20



Inauguration of Indian Society for Heating, Refrigerating and Air-conditioning Engineers (ISHRAE) chapter on 16/08/19 by Mr.K.Thirunavukkarasu, Regional Director ISHRAE

EVENTS ORGANIZED 2019 20



Guest Lecture on Campus to Corporate on 28/08/19 by
Mr. Dhinesh Tilton, Area Manager, Tamilnadu and Kerala,
IBS B-School, Coimbatore

EVENTS ORGANIZED 2019 20



Guest Lecture on Opportunities in Design Stream
on 31/08/19 by Er.P.Jayakumar, Proprietor, M/S Stepsin
Technologies, Coimbatore

EVENTS ORGANIZED 2019 20



ISHRAE Sponsored One day International Workshop on
"Heating, Ventilation & Air Conditioning system in
Industrial application HVACIA" on 05/09/19

Chief Guest - Dr.R.Manikumar,
Associate Professor/CEME, Addis Ababa Science and
Technology University, Addis, Ethiopia. & Er. T.G. Rajiv
Krishnan M.Tech. (IITK), ISHRAE Chapter.

EVENTS ORGANIZED 2019 20



Guest lecture on Six Sigma in Industry 4.0 on
13/09/19 by Mr.R.Gopinath, Director, Synergy School of
Business Skills, Madurai

EVENTS ORGANIZED 2019 20



Guest lecture on Learning from Campus to Corporate on 14/09/19 by Er.T.Shriraman, Engineer – Projects, Agnise Fire Protection Pvt Ltd, Chennai

EVENTS ORGANIZED 2019 20



Workshop on Entrepreneurship Opportunities in Solar Energy Devices on 19/09/19 by Mr.P.Selva Sundar Rajan, Director, AAdithiya Training & Consultants.

EVENTS ORGANIZED 2019 20



Guest lecture on Applications of IOT in Manufacturing on 20/09/19 by Er.R.Sudharsan, Regional Manager, CADD Centre, Chennai & Er.J.Gunabalan, Centre Head, Livewire, Madurai

EVENTS ORGANIZED 2019 20



Hands on workshop on “Dismantling and assembling of Automobile Components” on 23/09/19 by Er.R.Ragupathy, Works manager, M/s Indus Motor Ltd, Trivandrum

EVENTS ORGANIZED 2019 20



Guest Lecture on Opportunities for Mechanical Engineers
in abroad on 25/09/19 by Er.Pon Subbu Kutty
Ayyan, Production Engineer, Delta metallic construction
factory, LLC Sharjah, UAE

EVENTS ORGANIZED 2019 20



Guest lecture on Non Destructive Testing methods and applications on 27/09/19 by Er.R.ArulKumar, Managing Director, Mathira NDT training Institute, Pavorchatram

EVENTS ORGANIZED 2019 20



Guest Lecture on Digital Marketing on
01/10/19 by Mr.Subash Nagaraj, Product Specialist
Synergy School of Business Studies, Chennai

STUDENTS ACHIEVEMENTS

- TEN OF OUR MECHANICAL ENGINEERING STUDENTS PARTICIPATED IN MAKSFETE'19 EVENTS ORGANIZED BY DEPARTMENT OF MATHEMATICS AND WON PRIZES.
- K. YUVARAJ AND U.AAKASH KANNAN FROM FIRST YEAR MECHANICAL ENGINEERING PARTICIPATED IN THE EVENT OF EG MARATHON AND GOT SECOND PRIZE IN JANSONS INSTITUTE OF TECHNOLOGY, COIMBATORE ON 02.11.19.
- V.BHARATHKUMAR FROM THIRD YEAR MECHANICAL ENGINEERING STUDENT HAS BEEN SELECTED IN SOUTH ZONE INTER UNIVERSITY CRICKET TOURNAMENT 2019 -2020 BY ANNA UNIVERSITY CHENNAI ON 15.11.19.



FACULTY ACHIEVEMENTS

DR. S. SENTHIL RECEIVED RULA RESEARCH PEACE AWARD AND ALSO BECOME A MEMBER IN WORLD RESEARCH COUNCIL AT TRICHY.



DR. P.NARAYANASAMY RECEIVED TOP PEER REVIEWER AWARD IN MATERIALS SCIENCE & CROSS-FIELD - SEPTEMBER 2019 FROM PUBLON & WEB OF SCIENCE GROUP.



ALUMNI CORNER - TECHNICAL ARTICLE

AN INNOVATIVE DESIGN FOR THE DESALINATION OF THE SEA WATER - USING SOLAR ENERGY.

IN THIS PRESENT SCENARIO, WATER BECOMES A SCARY LIQUID LIKE DIESEL, PETROL AND SO ON. NOW, WE ARE IN NEED TO FIND AN ALTERNATE RESOURCE FOR FRESH WATER AT LOW COST AND ALSO CONTINUOUSLY AVAILABLE FOR A LONGER DURATION OF TIME. AS WE ALL KNOW THAT, FROM RISING OF OUR EYES TO SETTING OF OUR EYES WE USE WATER EVER WHERE. BUT,

THE AVAILABILITY OF FRESH WATER IS MUCH LESSER WHEN COMPARED TO ITS REQUIREMENT. MANY RESEARCHES WERE CARRIED OUT TO FIND SOLUTION TO OVERRULE THE DEMAND OF FRESH WATER. SO IN THIS WORK, WE HAVE DESIGNED A DESALINATION VESSEL FOR PRODUCING FRESH WATER USING SOLAR POWER.

ALUMNI CORNER – TECHNICAL ARTICLE

- SINCE THE EXISTING DESALINATION PLANTS LEAKS A LOT OF CHEMICAL WASTES. WE HAVE PLANNED TO USE SOLAR POWER (REFLECTION AND REFRACTION (USING MIRROR)) AS A SOURCE OF ENERGY.
- IN THIS PROCESS THE SEA WATER INSIDE THE VESSEL GETS EVAPORATED BY LEAVING THE DISSOLVED SALT (NACL) IN THE VESSEL.
- THE EVAPORATED WATER IS COLLECTED IN THE TUBE. PURE WATER IS CONTINUOUSLY PRODUCED AND NO CHEMICALS WERE ADDED IN THIS PROCESS. WE HAVE ALSO PLANNED TO PLACE MIRROR AROUND THE VESSEL FOR PROVIDING EXCESS HEAT ENERGY. EVEN THE COLLECTED SOLID CONTENT CAN BE USED FOR AGRICULTURE BASIS.



Sriraman T,
Project Manager,
Agnice Fire Protection Pvt. Ltd.,
Alappakam, Porur, Chennai.

EDITORIAL TEAM

TEAM MEMBERS

ROLL NO.	NAME	YEAR
18UMECO66	SASIKUMAR.K	II-MECH-A
18UMECO82	RAMANA.S	II-MECH-A
18UMECO64	ARUNPRAKASH.P	II-MECH-B
18UMECO65	RAM PRASATH.S	II-MECH-B
17UMECO09	HARISH KUMAR.M	III-MECH-A
17UMECO30	VISHWAK.S	III-MECH-A
17UMECO59	VIGNESH.B	III-MECH-A
17UMECO48	BALAGANESH K B	III-MECH-B
17UMEC110	BALAJI KUMARADHAN SINGH B	III-MECH-B
17UMEC131	VIGNESH.B	III-MECH-B
16UMECO07	RISHI.R	IV-MECH-A
16UMECO39	KRISHNAMOORTHY.R	IV-MECH-A
16UMECO51	NANDHAKUMAR.M	IV-MECH-A
16UMEC116	GERALD ANTONY KIRUBAGAR.R	IV-MECH-A
16UMECO37	PONDAVID.S	IV-MECH-B
16UMECO91	ARUMUGA AJITHKUMAR.B	IV-MECH-B
16UMEC136	VENKATESH.K	IV-MECH-B

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