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CERT ISO 9001

ACADEMIC YEAR 2021-2022

6.3.3 PROGRAMS ORGANIZED FOR THE STAFF MEMBERS

S.No	DEPARTMENT	PROGRAMS ORGANIZED	BENEFICIARIES COUNT
1.	Civil Engineering	8	9
2.	Computer Science and Engineering	5	13
3.	Electronics and Communication Engineering	7	13
4.	Electrical and Electronics Engineering	10	9
5.	Mechanical Engineering	2	15
6.	IQAC	3	74
	TOTAL	**35**	**133**

22/8/22

IQAC COORDINATOR

22/8/2022

PRINCIPAL

PRINCIPAL
Kings College of Engineering,
PUNALKULAM - 613 303.

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ACADEMIC YEAR 2021-2022

6.3.3 PROGRAMS ORGANIZED FOR THE STAFF MEMBERS

S.No	Department	Page Number
1.	Civil Engineering	3-37
2.	Computer Science and Engineering	38-67
3.	Electronics and Communication Engineering	68-90
4.	Electrical and Electronics Engineering	91-127
5.	Mechanical Engineering	128-135
6.	IQAC	136-145

DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR

2021-2022

INTERNAL STAFF SEMINAR

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DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2021-2022

INTERNAL STAFF SEMINAR SUMMARY

S.NO	DATE	TITLE	STAFF NAME	NO. OF PARTICIPANTS
ACADEMIC YEAR 2021-2022 (ODD SEMESTER)				
1.	15.09.2021	Internal Seminar on "Improving the durability properties of self-consolidating concrete made with recycled concrete".	Ms.T.Bhuvaneswari, AP/Civil	07
2.	30.09.2021	Internal Seminar on "Laboratory study on Dynamic properties of Municipal Solid waste in Saravan Landfill Iran".	Ms.V.Ishwarya, AP/Civil	07
3.	19.10.2021	Internal Seminar on "Plastic cell filled concrete road – A review".	Mr.K.Arun, AP/Civil	06
4.	23.11.2021	Internal Seminar on "Assessment of Glass fibre Reinforced polyster pipe powder in soil improvement".	Ms.D.Shrividhya, AP/Civil	09
ACADEMIC YEAR 2021-2022 (EVEN SEMESTER)				
5.	24.02.2022	Internal Seminar on "Flexural Performance of Composite Beams using High-Strength Steel and High-Strength Concrete"	Mr.K.Arun, AP/Civil	06
6.	04.03.2022	Internal Seminar on "Modeling The Temperature Development On Foamed Concrete Filled Steel Hollow Section Column"	Mr.R.Sundharam, AP/Civil	07
7.	28.03.2022	Internal Seminar on "Experiment and analysis of Mechanical properties of light weight concrete prefabricated building Structure beams"	Mr.M.Balaji, AP/Civil	07
8.	06.05.2022	Internal Seminar on "Geo-cell reinforcement for performance improvement of vertical plate anchors in sand - a review"	Mr.R.Ramchandar, AP/CIVIL	08

26/04/2022
STAFFIN-CHARGE

26/04/2022
HOD/CIVIL

HOD
Department of Civil Engineering
Kings College of Engineering,
Punalkulam, Thanjavur - 613 303

26/4/2022
PRINCIPAL

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DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2021 – 2022 (ODD)

CIRCULAR

DATE: 14.09.2021

This is to inform our department faculty that there will be an internal staff seminar. The details of the staff seminar are given below

Name of the faculty : Ms.T.Bhuvaneswari / AP / Civil

Date : 15.09.2021

Venue : Civil Department

Time : 01:00PM

14/9/21

DRC MEMBER

14/9/21

HOD/CIVIL

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DEPARTMENT OF CIVIL ENGINEERING **15/09/2021**

ACADEMIC YEAR 2021-2022/ODD

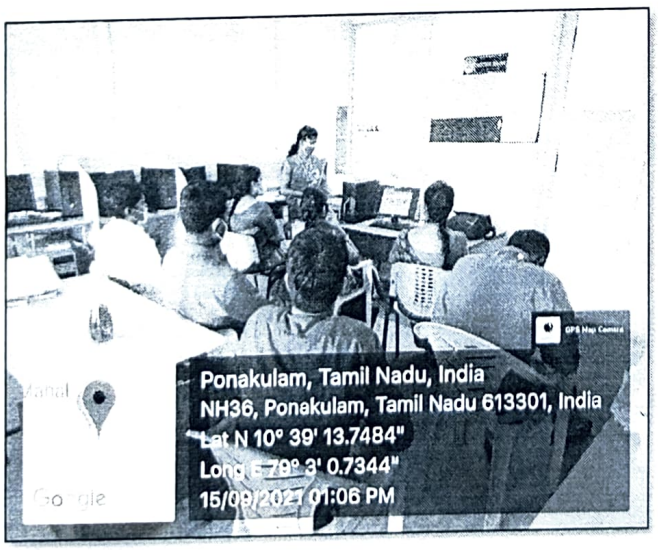
INTERNAL STAFF SEMINAR – REPORT

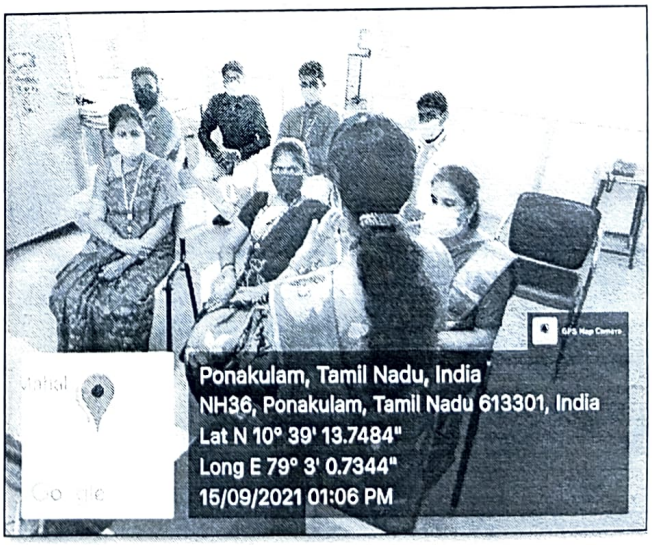
Background & Objective

Department of Civil Engineering in collaboration with Research and Development section had organized an Internal Seminar for the Department staff members for accessing online journals. The purpose of this seminar is to equip the faculty in new techniques through accessing online journals.

Seminar Session

A Seminar was held in the Department of Civil Engineering on 15th Sep, 2021 at 01:00PM. The seminar was presided over by **Ms.R.Revathi, HoD.**, Department of Civil Engineering. All the faculties were present in the seminar. **Ms.T.Bhuvaneswari/AP** delivered her seminar talk on "**Improving the Durability Properties of Self-Consolidating Concrete made with Recycled Concrete Aggregates using Blended Cements**"(SPRINGER – Journal of Civil Engineering).





Seminar talk by Ms.T.Bhuvaneswari/AP

The themes discussed were: Durability methods, Self-Consolidating Concrete, Fine Recycled Concrete Aggregates, Coarse Recycled Concrete Aggregates, Fly Ash, and Metakaolin.

- The growing scarcity of natural sources of aggregates has encouraged the researchers around the globe towards finding the substitute of these materials with attention concentrated to the potential use of **recycled concrete aggregates (RCA)** obtained from the **construction and demolition waste (CDW).**
- This paper evaluates the durability properties of Self-Consolidating Concrete (SCC) containing fine and coarse recycled concrete aggregates.
- The results obtained for strength and durability properties deteriorate with the introduction of FRCA and CRCA in SCC mixtures. All SCC mixtures with CRCA, FRCA and MK based mixtures can be classified in the category **"Excellent"** on the basis of their obtained result values.

Outcome

The Seminar clearly highlighted the new methods to find the durability properties of modified concrete. Staff Members also got an idea in various methods which can be implemented. Discussions were made among faculties in various new techniques. Staff members shared their views regarding seminar and gave their feedback.

From this paper I have understood the new tests to find out the durability of concrete. Further investigation regarding the durability properties of concrete with some other cementitious material can be made in future projects.

16/9/21

HOD/CIVIL

16/9/2021

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15/09/2021

DEPARTMENT OF CIVIL ENGINEERING

INTERNAL STAFF SEMINAR – ATTENDANCE AND FEED BACK

S.NO	NAME	FEEDBACK	SIGN
1	Ms. R. Revathi	New techniques & methods	15/9/21
2	Dr.R.Saravanan	–	–
3	Mr.R.Sundharam	Nice Presentation. Good	15/9/21
4	Mr.K.Arun	Innovative topic and clear presentation	15/9/21
5	Ms.V.Ishwarya	This file will be useful for guiding students Project. Nice presentation.	15/9/21
6	Mr.D.Shrividhya	Very Nice Presentation	15/9/21
7	Mr.M.Balaji	Good & Innovative	M.Balaji
8	Mr.R.Ramchandar	Good Explanation	R.Ramchandar 15/9/21

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ACADEMIC YEAR 2021 – 2022 (ODD)

CIRCULAR

DATE: 29.09.2021

This is to inform our department faculty that there will be an internal staff seminar. The details of the staff seminar are given below

Name of the faculty : Ms.V.Ishwarya / AP / Civil

Date : 30.09.2021

Venue : Civil Department

Time : 03:00PM

28/10/21

DRC MEMBER

28/6/21

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DEPARTMENT OF CIVIL ENGINEERING **30/09/2021**

ACADEMIC YEAR 2021-2022/ODD

INTERNAL STAFF SEMINAR – REPORT

Background & Objective

Department of Civil Engineering in collaboration with Research and Development section had organized an Internal Seminar for the Department staff members for accessing online journals. The purpose of this seminar is to equip the faculty in new techniques through accessing online journals.

Seminar Session

A Seminar was held in the Department of Civil Engineering on 30th Sep, 2021 at 3:00 P.M. The seminar was presided over by **Ms.R.Revathi, HoD.**, Department of Civil Engineering. All the faculties were present in the seminar. **Ms.V.ISHWARYA/AP** delivered her seminar talk on "**Laboratory Study on Dynamic Properties of Municipal Solid Waste in Saravan Landfill, Iran**"(SPRINGER – Journal of Civil Engineering).

Seminar talk by Ms.V.ISHWARYA, AP/CIVIL

The themes discussed were: Seismic analysis of landfills, Shear Wave Velocity and Maximum Shear Modulus, Cyclic Stress–Strain Loops, Damping Ratio Curves, Effect of Vertical Stress, Vertical Deformation Responses of MSW, Bender element test, cyclic direct shear.

- The seismic behaviour of municipal solid waste (MSW) is an important part of assessing landfill performance due to the potential devastating effects of earthquakes on landfills studied.
- This paper evaluates the MSW composition, age, durability, dampness with various tests on the selected site and conducted Seismic analysis of landfills by cyclic direct shear bender element tests.
- The laboratory study was performed by Shear Wave Velocity and Maximum Shear Modulus, Cyclic Stress–Strain Loops, Damping Ratio Curves, Effect of Vertical Stress, Vertical Deformation Responses of MSW on the selected landfills to analyze the MSW **effect of the age and degree of decomposition of the waste neglected in the seismic analysis of landfills and their effect on the waste dynamic properties.**

Outcome

The Seminar clearly highlighted the study of seismic analysis of landfills by new methods to find the MSW properties of various composition, age and different factors. Staff Members also got an idea in various test methods which are performed for dynamic property of MSW. Discussions were made among faculties in various new techniques. Staff members shared their views regarding seminar and gave their feedback.

11/10/21

HOD/CIVIL

11/10/2021

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30/09/2021

INTERNAL STAFF SEMINAR – ATTENDANCE AND FEED BACK

S.NO	NAME	FEEDBACK	SIGN
1	Ms. R. Revathi	New topic & Nice presentation	30/9/21
2	Dr.R.Saravanan	–	–
3	Ms.T.Bhuvaneswari	Innovative and useful presentation	30/9/21
4	Mr.R.Sundharam	Useful and nice presentation	30/9/21
5	Mr.K.Arun	Good Presentation	30/9/21
6	Mr.D.Shrividhya	Very Innovative & Nice Presentation	30/9/21
7	Mr.M.Balaji	Useful & good presentation	M.Balaji 30/9/21
8	Mr.R.Ramchandar	ExtraOrdinary Presentation	30/9/21

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ACADEMIC YEAR 2021 – 2022 (ODD)

CIRCULAR

DATE: 12.10.2021

This is to inform our department faculty that there will be a internal staff seminar. The details of the staff seminar are given below

Name of the faculty : Mr.K.Arun / AP / Civil

Date : 13.10.2021

Venue : Civil Department

Time : 01:00 PM

12/10/21

DRC MEMBER

12/10/21

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ACADEMIC YEAR 2021-2022 (ODD SEM)

INTERNAL STAFF SEMINAR – REPORT

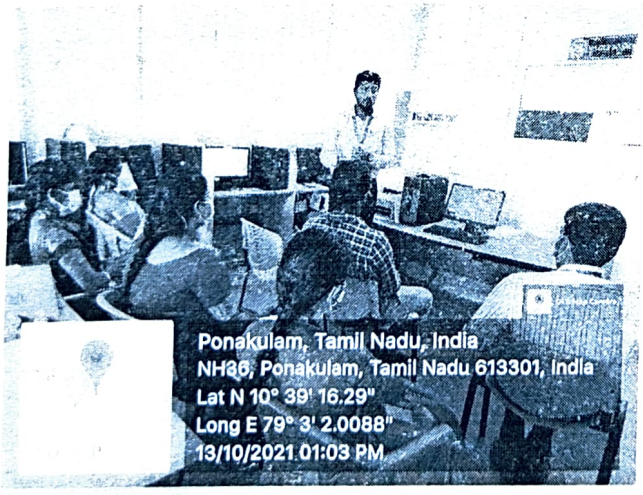
19/10/2021

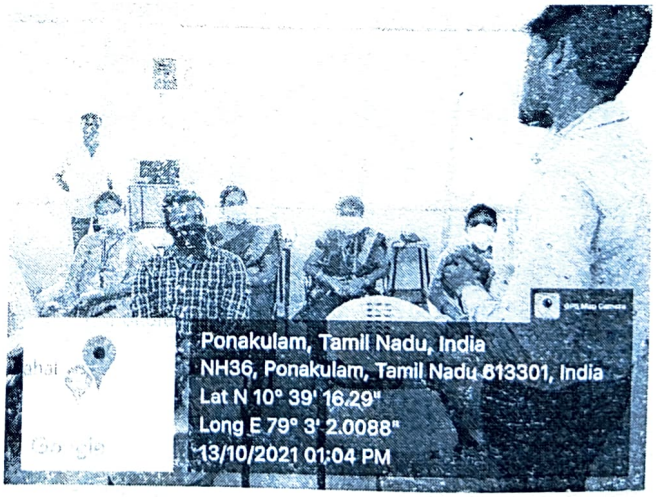
Background & Objective

Department of Civil Engineering had organized an Internal Seminar for the Department staff members for accessing online journals. The purpose of this seminar is to equip the faculty in new techniques through accessing online journals (MAT journal).

Seminar Session

A Seminar was held in the Department of Civil Engineering on 13th October, 2021 at 01:00PM. The seminar was presided over by **Ms.R.Revathi, HoD.**, Department of Civil Engineering. The faculty members of department of Civil Engineering were present for this seminar. **Mr.K.Arun /AP** delivered his seminar talk on **"PLASTIC CELL FILLED CONCRETE ROAD - A REVIEW".** This paper was reviewed from the MAT journals - Journal of Structural and Transportation Studies, Volume I, Issue 3, 2016.





Seminar talk by Mr.K.Arun /AP

Theme:

Researchers and architects are always looking for various emerging new trends and hence advanced materials & methods of construction are being adopted. The main role of this research work is to study the pavement performance evaluation of **Plastic cell-filled concrete block pavement (PCCBP)**. Low density poly-ethylene (LDPE) plastic sheet of thickness 0.49 mm is used to construct the cell-filled pavements. In order to evaluate the structural performance of the test sections with traffic passes, daily traffic volume data, performance criterion to limit rutting under traffic repetitions. Non-destructive structural evaluation was made by using falling weight deflectometer, by doing back calculation analytically based on genetic algorithm and NDT was done by Rebound Hammer Test. The evaluation of distress has been done considering pavement condition index (PCI) and found to be satisfactory as per PCI Rating. Considering its credibility, there is a wide scope for using this *Flexible-rigid cast-in-situ block pavement* in future.

Outcome :

The Seminar clearly highlighted the properties and characteristics of Plastic Cell-Filled block pavement (PCCBP). Staff Members also got an idea about the PCCBP pavement. This seminar proves to be effective in such a way that, it highlighted the potential replacement for conventional pavement methods. The construction and maintenance of PCCBP was found economical as compared to the conventional concrete and flexible pavement and also has satisfactory PCI. Also this seminar provided the wide scope for designing Flexible-rigid cast-in-situ block pavement in future. Finally, discussions were made among faculty members in various features of PCCB. Staff members shared their views regarding seminar and gave their valuable feedback.

19/10/21 — **PREPARED BY**

19/10/21 — **HOD/CIVIL**

19/10/2021 — **PRINCIPAL**

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DEPARTMENT OF CIVIL ENGINEERING

INTERNAL STAFF SEMINAR – ATTENDANCE AND FEED BACK

13/10/2021

S.NO	NAME	FEEDBACK	SIGN
1	Ms. R. Revathi	New topic, Nice Presentation	13/10/21
2	Ms.T.Bhuvaneswari	Innovative topic. Excellent	13/10/21
3	Mr.R.Sundharam	Useful Presentation. Good	13/10/21
4	Ms.V.Ishwarya	Nice presentation	13/10/21
5	Ms.D.Shrividhya	Useful and Excellent Presentation	13/10/21
6	Mr.M.Balaji	NICE PRESENTATION & INNOVATIVE TOPIC	13/10/21

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ACADEMIC YEAR 2021 – 2022 (ODD)

CIRCULAR

DATE: 22.11.2021

This is to inform our department faculty that there will be a internal staff seminar. The details of the staff seminar are given below

Name of the faculty : Ms.D.Shrividhya / AP / Civil

Date : 23.11.2021

Venue : Civil Department

Time : 01:00 PM

22/11/21
DRC MEMBER

22/11/21
HOD/CIVIL

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DEPARTMENT OF CIVIL ENGINEERING **23/11/2021**

ACADEMIC YEAR 2021-2022/ODD

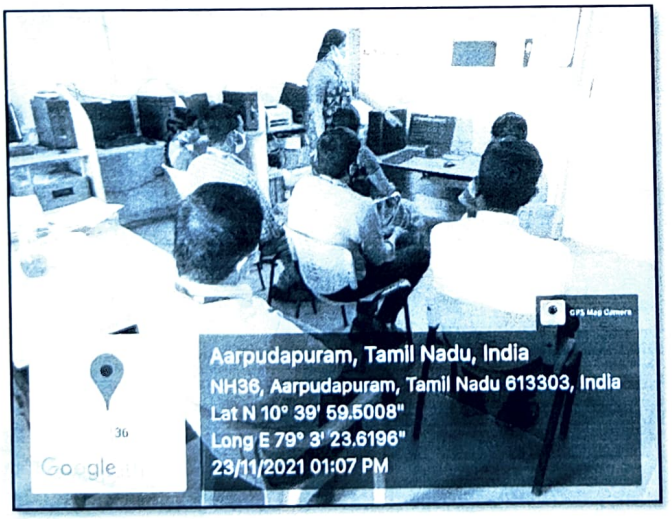
INTERNAL STAFF SEMINAR – REPORT

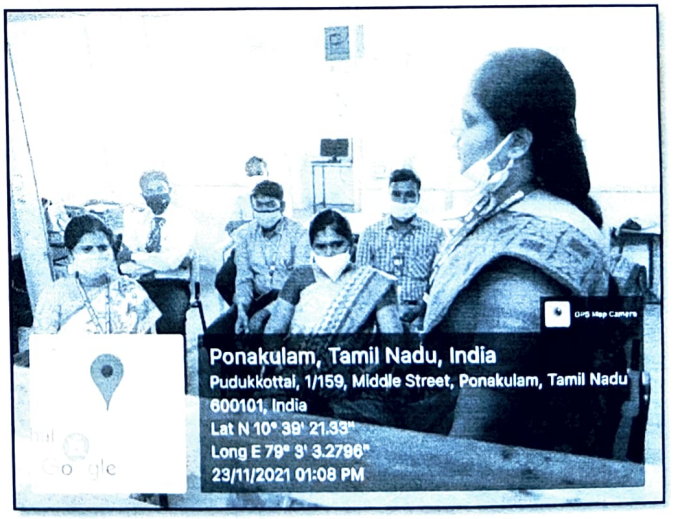
Background & Objective

Department of Civil Engineering in collaboration with Research and Development section had organized an Internal Seminar for the Department staff members for accessing online journals. The purpose of this seminar is to equip the faculty in new techniques through accessing online journals.

Seminar Session

A Seminar was held in the Department of Civil Engineering on 23rd Nov, 2021 at 01:00PM. The seminar was presided over by **Ms.R.Revathi, HoD.**, Department of Civil Engineering. All the faculties were present in the seminar. **Ms.D.Shrividhya,AP** delivered her seminar talk on "**Assessment of Glass Fibre Reinforced Polyester Pipe Powder in Soil Improvement**"(SPRINGER – Journal of Civil Engineering). 2021, 15(3) : 742 – 753





Seminar talk by Ms.D.Shrividhya/AP

The themes discussed were: Fundamental Test, Model Test, Glass-Fibre Reinforced Polyester (GRP) Pipe Powder, micro-sized chopped glass fibre (micro-CGF's).

- Owing to the worldwide urbanization and population growth, Geotechnical Engineers are facing various soil problems, including total and differential settlements, low bearing capacity of foundations, poor mechanical parameters of subgrade layers. This has encouraged the researchers around the globe towards finding the new techniques of soil improvement in construction.
- This paper evaluates the shear strength parameters and bearing capacity of weak soil by substitution of GRP pipe powder.
- The results obtained from direct shear test and model test using GRP pipe powder showing better increment in shear strength parameters and bearing capacity of poorly graded soil by up to 30.7%.

Outcome

The Seminar clearly highlighted the techniques of soil stabilization in poorly graded soil in foundation construction. Staff Members also got an idea in soil improvement techniques which can be implemented. Discussions were made among faculties in various new techniques. Staff members shared their views regarding seminar and gave their feedback.

Further investigation regarding the method of strengthening the poorly graded soil in the foundation of construction can be made in future projects.

Very good.

24/11/21

HOD/CIVIL

24/11/2021

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DEPARTMENT OF CIVIL ENGINEERING

23/11/2021

INTERNAL STAFF SEMINAR – ATTENDANCE AND FEED BACK

S.NO	NAME	FEEDBACK	SIGN
1	Ms. R. Revathi	Excellent presentation	23/11/21
2	Dr.R.Saravanan	Very Good Presentation – Very useful for Project work	R. Saravanan 23/11/2021
3	Ms.T.Bhuvaneswari	Innovative topic. Nice presentation	23/11/21
4	Mr.R.Arun	very nice Presentation with new topic	
5	Mr.R.Sundharam	Useful Presentation and good	23/11/21
7	Ms.V.Ishwarya	Advanced topic - will be useful for students	23/11/21
8	Mr.M.Balaji	Good presentation with new topic	M.Balaji 23/11/21
9	Mr.R.Ramchandar	Innovative Concept	R.Ramchandar 23/11/21

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ACADEMIC YEAR 2021 – 2022

CIRCULAR

DATE: 23.02.2022

This is to inform our department faculty that there will be a internal staff seminar. The details of the staff seminar are given below

Name of the faculty : Mr.K.Arun AP/CIVIL

Date : 24.02.2022

Venue : smart classroom (Hall no 236)

Time : 10:30 AM

23/2/22

DRC MEMBER

23/02/2022

HOD/CIVIL

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DEPARTMENT OF CIVIL ENGINEERING 25/02/2022

ACADEMIC YEAR 2021-2022/ODD SEMESTER

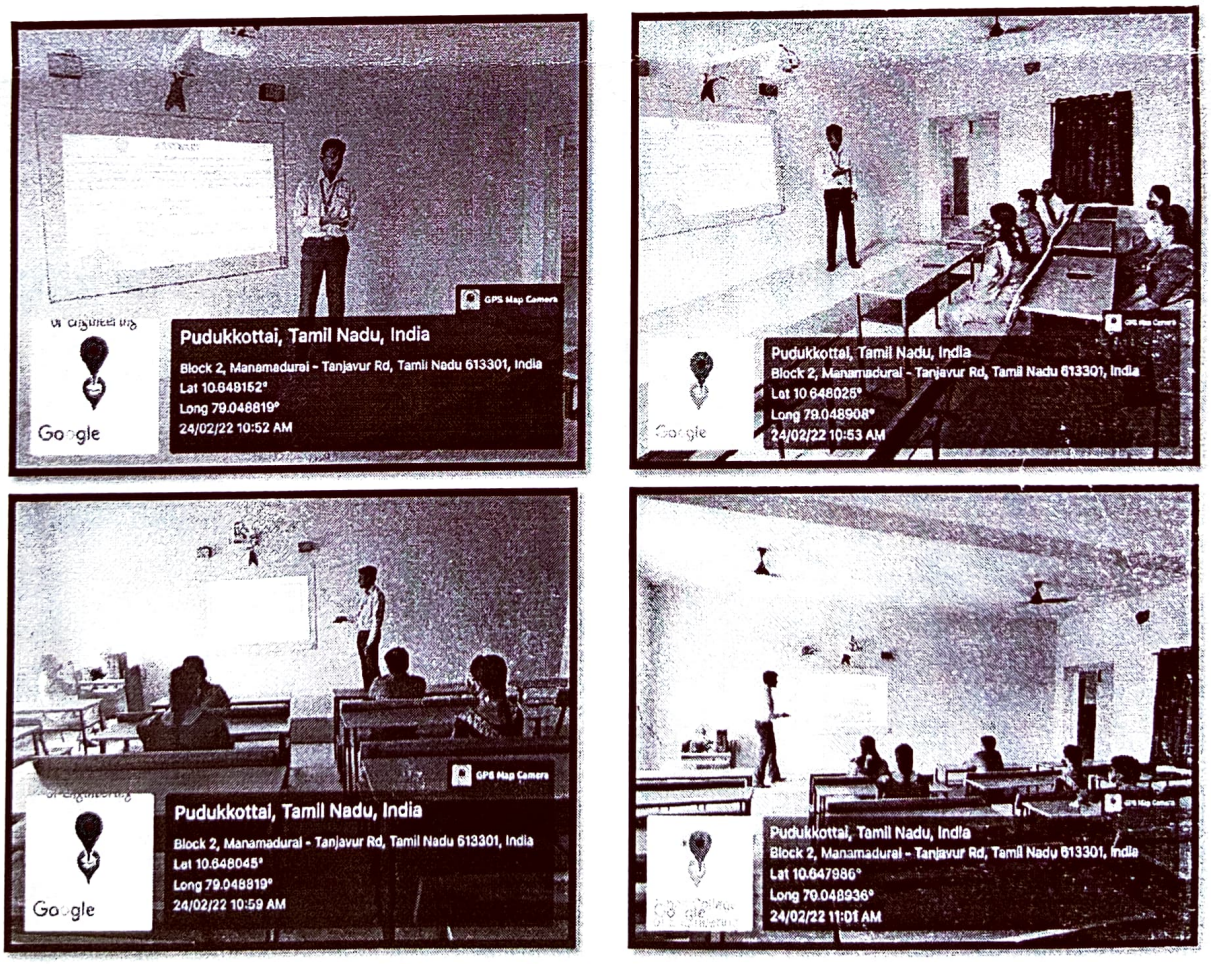
INTERNAL STAFF SEMINAR – REPORT

Background & Objective

Department of Civil Engineering had organized an Internal Seminar for the Department staff members for accessing online journals. The purpose of this seminar is to equip the faculty in new techniques through accessing online journals like MAT, Springer etc.

Seminar Session

A Seminar was held in the Department of Civil Engineering on 24th February, 2022 at 10:30AM. **Mr.K.Arun /AP** delivered his seminar talk on **"Flexural Performance of Composite Beams using High-Strength Steel and High-Strength Concrete"**. The paper was referred from SPRINGER Journal, International Journal of Steel Structures.



Internal Seminar Session by Mr.K.Arun /AP CIVIL

Theme:

The composite beams having high-strength steel (HSS) and high-strength concrete (HSC) can fully exploit the mechanical behavior of both materials. The composite beam has been extensively used in building and bridge structures for the excellent structural behavior such as bearing capacity, stiffness, seismic performance, fire resistance and durability. Adopting high-strength steel is capable of reducing the member size, self-weight for the structure, welding and coating materials. High strength concrete characterized by high strength, early strength, small creep coefficient and large rigidity is more suitable for the harsh environment than the normal concrete for wear resistance, impermeability performance and corrosion resistance. As an efficient structural component, the composite beam is composed of the high-strength steel (HSS) beam in the tension area, the concrete slab (HSC) in the compression area and shear connectors at the interface. Therefore, the composite beam can fully exploit the mechanical behavior of both materials and expand the application field of the high-performance materials in the building and bridge construction. The objective of the research paper is to study the influences of shear connection degree and concrete strength on the flexural performance of composite beams using HSS and HSC.

Outcome:

The Seminar clearly highlighted the properties and characteristics of HSS and HSC composite beams. Staff members also got an idea about the composite beams and shear connection degrees. This seminar proves to be effective in such a way that, it highlighted the potential impact of shear connection degree in a composite beam irrespective of the concrete grades used. The failure mechanism of the fully connected composite beams was the bending failure of steel beam and crushing failure of concrete slab. The failure mode of the partially connected composite beams was the shear failure of stud connectors and bending failure of steel beam. Discussions were made among faculty members in various aspects of composite beams. Finally, Staff members shared their views regarding seminar and gave their valuable feedback.

R Saravanan 25/02/2022

HOD/CIVIL

[Dr. R. Saravanan]

Good.

J. Principal 25/02/2022

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DEPARTMENT OF CIVIL ENGINEERING 24/02/2022

INTERNAL STAFF SEMINAR – ATTENDANCE AND FEED BACK

S.NO	NAME	FEEDBACK	SIGN
1	Mr.R.Sundharam	Nice presentation & Useful topic	24/2/22
2	Ms.D.Shrividhya	Well Explained, Innovative topic & Excellent presentation	24/2/22
3	Mr.M.Balaji	Good topic & neat presentation	24/2/22
4	Mr.R.Ramchandar	Excellent Explanation	24/2/22
5	Ms.S.Gayathri	Handling Good, clear Explanation, I learned lot..	24/2/22
6	Ms.K.Elakkiya	Excellent presentation	24/2/22

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DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2021 – 2022

CIRCULAR

DATE: 03.03.2022

This is to inform our department faculty that there will be a internal staff seminar. The details of the staff seminar are given below

Name of the faculty : Mr.R.Sundharam AP/CIVIL

Date : 04.03.2022

Venue : smart classroom (Hall no 236)

Time : 03:00PM

3/3/22

DRC MEMBER

03/03/2022

HOD/CIVIL

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DEPARTMENT OF CIVIL ENGINEERING **10/03/2022**

ACADEMIC YEAR 2021-2022/EVEN

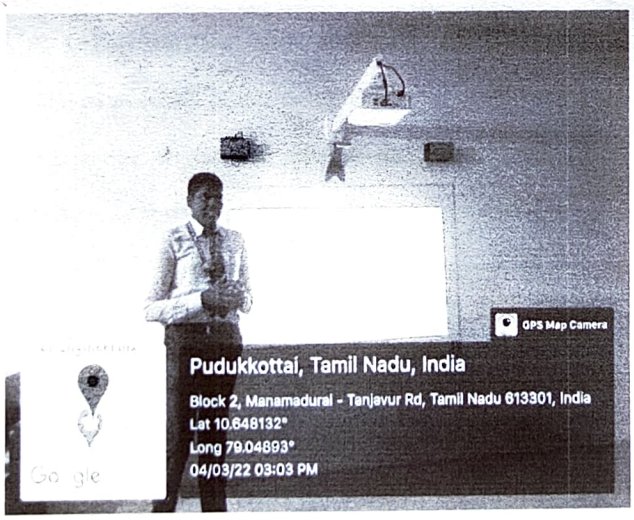
INTERNAL STAFF SEMINAR – REPORT

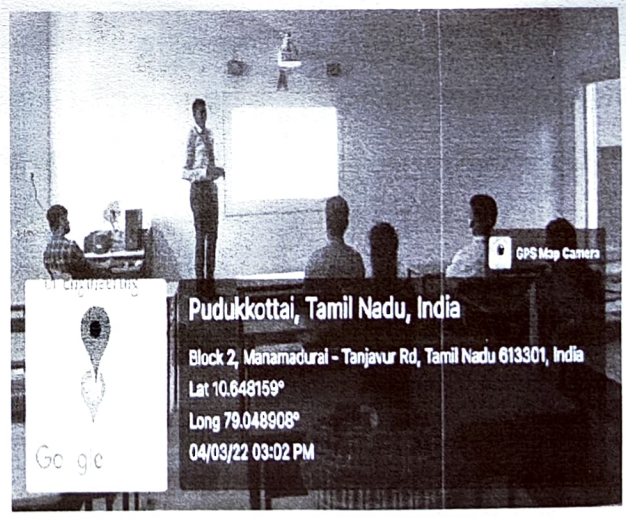
Background & Objective

Department of Civil Engineering had organized an Internal staff Seminar for the staff members for accessing online journals. The purpose of this seminar is to equip the faculty in new techniques through accessing online journals such as Springer, MAT, etc.

Seminar Session

A Seminar was held in the Department of Civil Engineering on 4th March, 2022 at 03:00PM. Mr.R.Sundharam/AP delivered his seminar talk on **"MODELING THE TEMPERATURE DEVELOPMENT ON FOAMED CONCRETE FILLED STEEL HOLLOW SECTION COLUMN"**. The paper was referred from MAT Journal, Journal of Construction and Building Materials Engineering.





Seminar talk by Mr.R.Sundharam /AP

Theme

Fire is one of the harsh environmental hazards that affect structures. Structural fire design is very crucial in the design of steel structures. Temperature distribution within the structural member is the first stage for the structural fire design available in EN1993-1-2 and EN1994-1-2; it is used for

the determination of stresses on the structure under fire. It is widely used in the construction of high-rise structures. Concrete-filled steel tube (CFST) columns have good properties at ambient temperature and high fire resistance ratings. These good characteristics make it more attractive in the construction industry, especially in high-rise structures. As a result of the benefit in reducing member size and self-weight of the structure, CFST columns have become acceptable in the construction of high-rise buildings. Higher load bearing capacity is achieved with a small cross-section size in CFST columns due to the combined action of steel tube and concrete core. However, a further decrease in self-weight of the structure can be achieved by incorporating lightweight concrete into the CFST columns as in-filled material. A numerical model was developed for predicting the temperature response of high-strength CFST columns exposed to standard fire. The effects of gap thermal conductance and emissivity influence at the steel-concrete interface were observed in the modeling. It was concluded that the thermal response of CFST columns filled with high-strength concrete can be accurately simulated. The main objective of this research paper is to understand the temperature distribution along the structural members and how to reduce the member size and self weight of the structural elements by using CFST columns in high-rise buildings.

Outcome

The Seminar clearly underlined the thermal response of FCFHS column under fire and predicted the temperature distribution for foamed concrete-filled steel hollow columns by the ABAQUS software. Staff members also got a thought about the temperature development on FCFHS column. This presentation shows to be effectual in such a way that, it underlined the sensitivity analysis and Finite element analysis for temperature development on foamed concrete filled hollow section (FCFHS) columns and for determining the value of gap thermal conductance between steel and foamed concrete that depict the best prediction of the temperature distributions respectively. At the end of seminar, discussions were done among the faculty membes how to develop a different numerical model for predicting the temperature response of high-strength CFST columns exposed to standard fire. Staff members shared their views regarding seminar and gave their feedback.

Good.

21/3/2022

HOD/CIVIL 21/03/2022

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DEPARTMENT OF CIVIL ENGINEERING

04/03/2022

INTERNAL STAFF SEMINAR – ATTENDANCE AND FEED BACK

S.NO	NAME	FEEDBACK	SIGN
1	Dr.R.Saravanan	Very Good Presentation.	4/3/22
2	Mr.K.Arun	Innovative topic and Neat Presentation	
3	Ms.D.Shrividhya	New Topic & Excellent Presentation	
4	Mr.M.Balaji	Excellent Presentation	
5	Mr.R.Ramchandar	Good Concept with wonderfull Presentation	
6	Ms.S.Gayathri	Good concept and Nice Presentation	4/3/22
7	Ms.K.Elakkiya	Excellent concept.	

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DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2021 – 2022

CIRCULAR

DATE: 25.03.2022

This is to inform our department faculty that there will be a internal staff seminar. The details of the staff seminar are given below

Name of the faculty : Mr.M.Balaji AP/CIVIL

Date : 26.03.2022

Venue : smart classroom (Hall no 236)

Time : 01:00PM

25/3/22

DRC MEMBER

27/03/2022

HOD/CIVIL

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DEPARTMENT OF CIVIL ENGINEERING **28/03/2022**

ACADEMIC YEAR 2021-2022/EVEN

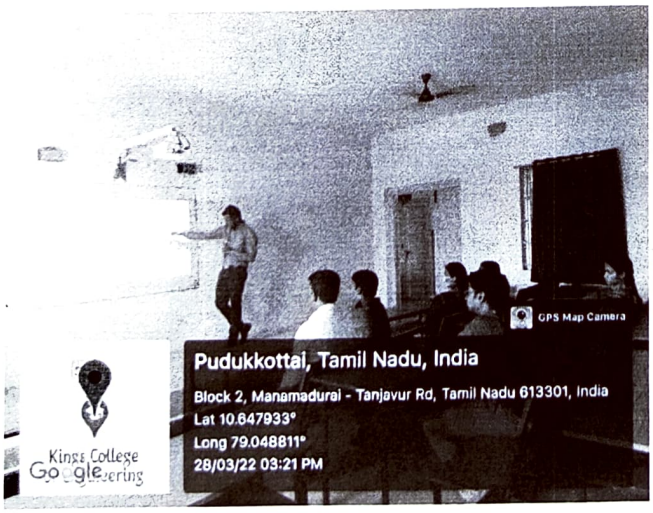
INTERNAL STAFF SEMINAR – REPORT

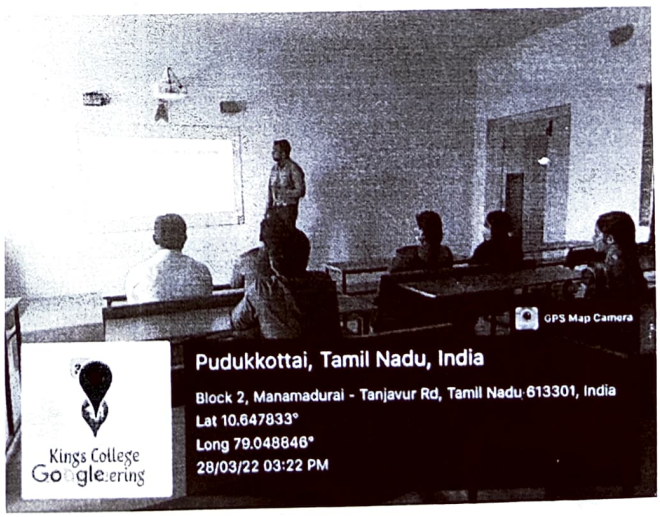
Background & Objective

Department of Civil Engineering had organized an Internal staff Seminar for the staff members for accessing online journals. The purpose of this seminar is to equip the faculty in new techniques through accessing online journals such as Springer, MAT, etc.

Seminar Session

A Seminar was held in the Department of Civil Engineering on **28th March, 2022 at 03:00PM. Mr.M.BALAJI/AP** delivered his seminar talk on ***"EXPERIMENT AND ANALYSIS OF MECHANICAL PROPERTIES OF LIGHTWEIGHT CONCRETE PREFABRICATED BUILDING STRUCTURE BEAMS"***. The paper was referred from Springer Journal ***International Journal of Concrete Structures and Materials.***





Seminar talk by Mr.M.BALAJI/AP

Theme

Recent years have witnessed that the prefabricated concrete structure is in the widespread use of building structures. This structure, however, still has some weaknesses, such as excessive weight of components, high requirements for construction equipment, difficult alignment of nodes, and poor installation accuracy.

In this context, ***this paper replaces ordinary coarse aggregate with lightweight ceramsite or foam based on the C60 concrete mix ratio so as to obtain a mix ratio of C40 lightweight concrete that meets the engineering standards.*** Besides, ceramsite concrete beams and foamed concrete beams are fabricated. Moreover, ***through three-point bending tests, this paper further explores the mechanical properties of lightweight concrete beams and plain concrete beams during normal use conditions.***

Outcome

The experiments and theoretical analysis, the following conclusions can be drawn from the results of this study.

- The mechanical properties of C40 foam concrete beams are similar to those of plain concrete beams. Compared to ***plain concrete beams, the density of foamed concrete was lower by 23.4%; moreover, the ductility and toughness of foamed concrete were higher by 13 and 3%, respectively.***
- Within the normal use defection limits, the calculated results are in good agreement with the defection of plain concrete beams and foam concrete beams, ***the absolute error is mostly within 0.2 mm, and the relative error is mostly 10–20% during the normal service period,*** verifying that the calculated value can be used as a design reference for defection of the foamed concrete beam during normal use.
- The mechanical properties of ***C40 ceramsite concrete beam have comparatively large discreteness.*** This may be caused by the strength discreteness of the ceramsite, the uneven distribution of ceramsite in the concrete beam, and the complexity and randomness of the combination of ceramsite interface and colloid.

29/03/2022

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29/3/2022

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DEPARTMENT OF CIVIL ENGINEERING

28/03/2022

INTERNAL STAFF SEMINAR – ATTENDANCE AND FEED BACK

S.NO	NAME	FEEDBACK	SIGN
1	Mr.K.Arun	Presentation was nice with good explanations and detailed study	28/3/2022
2	Mr.R.Sundharam	Nice Presentation.	28/3/22
3	Ms.D.Shrividhya	Innovative Topic and Excellant Presentation	28/3/22
4	Mr.R.Ramchandar	Nice explanation.	28/3/22
5	Ms.S.Gayathri	New topic & nice explanation	28/3/22
6	Ms.K.Elakkiya	Good Presentation	28/3/22.

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DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2021 – 2022

CIRCULAR

DATE: 04.05.2022

This is to inform our department faculty that there will be an internal staff seminar. The details of the staff seminar are given below

Name of the faculty : Mr.R.Ramchandar, AP/CIVIL

Date : 05.05.2022

Venue : Smart classroom (Hall no 236)

Time : 12:50PM

04/05/22
DRC MEMBER

04/05/22
HOD/CIVIL

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DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2021-2022/EVEN

INTERNAL STAFF SEMINAR – REPORT

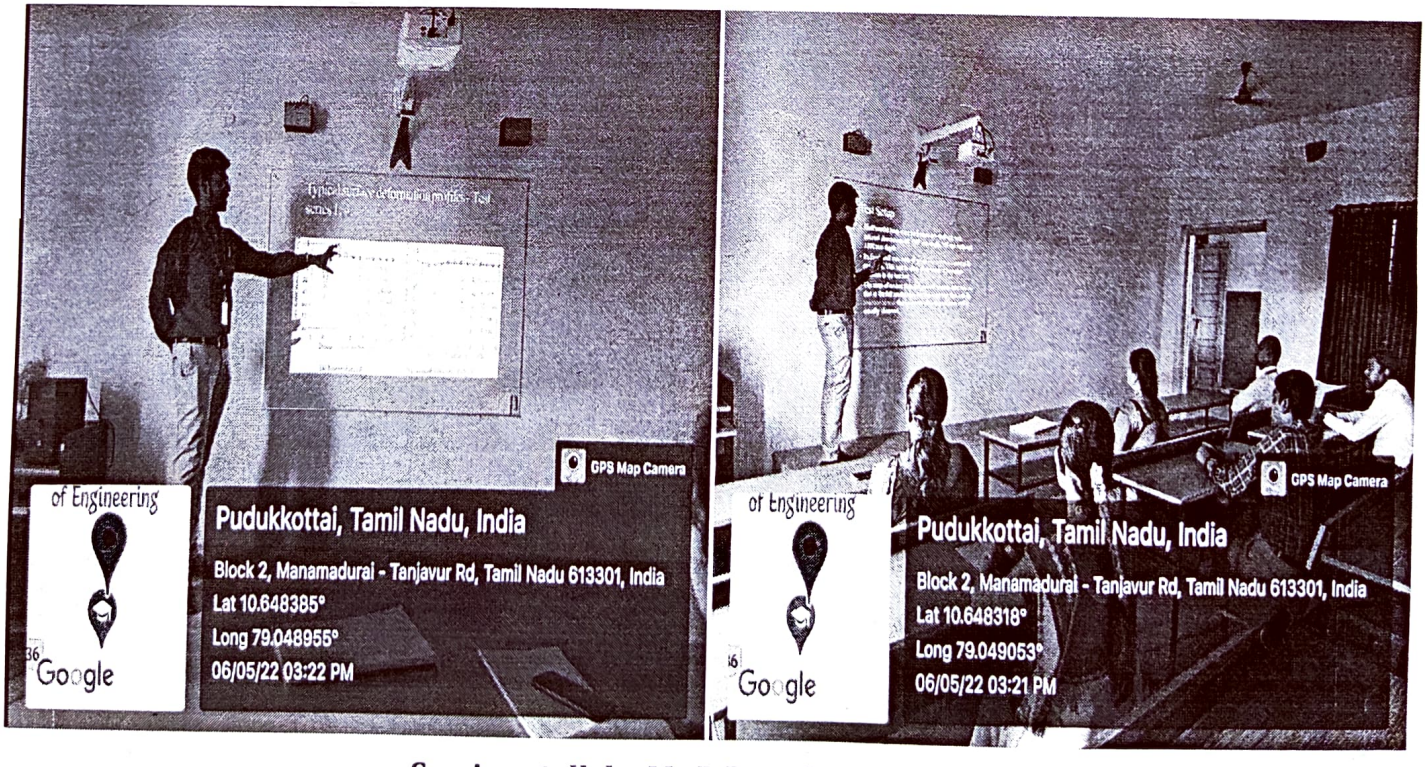
09/05/2022

Background & Objective

Department of Civil Engineering had organized an Internal Seminar for the Department staff members for accessing online journals. The purpose of this seminar is to equip the faculty in new techniques through accessing online journals (ELSEVIER journal).

Seminar Session

A Seminar was held in the Department of Civil Engineering on 06th May, 2022 at 03:10PM. The seminar was presided over by **Dr.R.Saravanan, HOD**, Department of Civil Engineering. All the faculties were present in the seminar. **Mr.R.Ramchandar /AP** delivered his seminar talk on **"GEO-CELL REINFORCEMENT FOR PERFORMANCE IMPROVEMENT OF VERTICAL PLATE ANCHORS IN SAND - A REVIEW"**



Seminar talk by Mr.R.Ramchandar /AP

Theme: Researchers and architects are always looking for new materials for basic frameworks; utilizing bamboo as conceivable support has picked up fame. Giant bamboos are the largest members of the grass family. In bamboo, the intermodal regions of the stem are usually hollow and the vascular bundles in the cross section are scattered throughout the stem instead of in a cylindrical arrangement. Bamboo includes some of the fastest growing plants in the world. Certain species of bamboo can grow 91cm within a 24 hour period. Bamboo culms are a cylindrical shell divided by solid transversal diaphragms at nodes and have some intriguing properties such as high strength in the direction parallel to the fibers, which run longitudinally along the length of the column, and low strength in a direction perpendicular to the fibers. Based on the different properties and characteristics of bamboo, it was concluded that Bamboo can potentially be used as substitute for steel reinforcement. Considering its credibility, there is a wide scope for designing multi story building using bamboo reinforcement in future.

Outcome : The Seminar clearly highlighted the properties and characteristics of bamboo as an alternate material for building construction. Staff Members also got an idea about the usage of bamboo in construction industry like columns, beams, purlins, rafters & reapers, flooring, doors & windows, walls, ceiling, man-hole covers etc. This seminar proves to be effective in such a way that, it highlighted the potential replacement for steel reinforcement. Also this seminar provided the wide scope for designing multi story building using bamboo reinforcement in future, considering the credibility of bamboo. Finally, discussions were made among faculty members in various features of bamboo as a construction material. Staff members shared their views regarding seminar and gave their valuable feedback.

09/05/2022

HOD/CIVIL

[Dr. R. Shravanan]

10/5/2022

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DEPARTMENT OF CIVIL ENGINEERING

INTERNAL STAFF SEMINAR – ATTENDANCE AND FEED BACK

09/05/2022

S.NO	NAME	FEEDBACK	SIGN
1	Dr. R. Saravanan	Very Good Presentation.	09/05/22
2	Mr. K. Arun	Interesting topic & Good presentation	09/05/2022
3	Mr. R. Sundharam	Useful topic and Presentation was good	9/5/22
4	Mr. M. Balaji	Nice presentation	09/5/22
5	Ms. D. Shrividhya	New Topic & Very Nice Presentation	9/5/22
6	Ms. S. Gayathri	Clear explanation & Good Presentation	9/5/22
7	Ms. K. Elakkiya	Innovative topic and Good presentation	9/5/22
8	Mr. R. Chandrasekar	Indepth explanation about topic and very good way of presentation.	9/5/22

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021 – 2022

INTERNAL STAFF SEMINAR

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021 – 2022

INTERNAL STAFF SEMINAR SUMMARY

S.No	Date	Title	Staff Name	No of Participants
ACADEMIC YEAR 2021 – 2022 ODD SEMESTER				
1.	15.9.21	IoT application using Tinkercad.com	Ms.S.Puvaneswari	10
2.	30.12.21	Energy Efficient Routing in WSNs Based on Dynamic Cuckoo Search Algorithm	Dr.D.Sivakumar	12
3.	31.1.22	IoT based application in Healthcare devices	Ms.R.Shanthi	13
ACADEMIC YEAR 2021 – 2022 EVEN SEMESTER				
4.	28.4.22	A Load Balancing Algorithm for data center to optimize cloud based application	Ms.R.S.Karthiga	11
5.	2.6.22	Implementation of fruit quality classification application using AI Algorithm	Ms.S.Priyadharshini	11

15/6/22
Coordinator

15/6/22
HOD/CSE

H.O.D of Computer Science & Engineering
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Pudukottai (Dt) - 613 303.

15/6/2022
Principal

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ACADEMIC YEAR 2021 – 2022 ODD SEMESTER

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021-22 (ODD SEM)

CIRCULAR **8.9.2021**

Staff members are requested to attend the staff seminar.

Resource Person: Ms.S.Puvaneswari AP/CSE

Date : 15.9.21

Venue: 223 (Smart Class room)

Timing: 3.00 pm – 3.30 pm

S.Puv 8/9/21
Staff Seminar Incharge
(Ms.S.Puvaneswari AP /CSE)

HOD/CSE 8/9/21

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021-22 (ODD SEM)

ATTENDANCE SHEET – INTERNAL STAFF SEMINAR

Date: 15.9.21

S.NO	STAFF NAME	SIGNATURE
1.	Dr.S.M.Uma	
2.	K.Abhirami	
3.	S.Puvaneswari	
4.	B.Sangeetha	
5.	S.Rajarajan	
6.	R.Ranitha	← AB →
7.	Dr.D.Sivakumar	
8.	R.Suganthalakshmi	
9.	R.Sriramkumar	
10.	M.Arun	
11.	G.Chandrapraba	

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

ACADEMIC YEAR 2021 – 2022 ODD SEMESTER

INTERNAL STAFF SEMINAR REPORT

Department of Computer Science & Engineering and students branch of IEEE jointly organized an internal staff seminar on 15.09.2021 at CSE Lab – I.

OBJECTIVE

The objective of the seminar is to enhance the technical skills of faculties and get them aligned with the current requirements of IT industry.

SESSION DETAILS

Ms.S.Puvaneswari AP/CSE handled the session in the topic of "IoT application using Tinkercad.Com". She described the procedure to create a workspace in that website. Tinkercad.com is a freeware website which is used to provide a platform to develop an IoT project. It allows the user to create 3D designs, new circuit designs. It consists of various components and simulates the functionalities of real sensors such as vibration sensor, thermal sensor and so on. To develop an IoT project, the website offers two kinds of coding Methods. First method contains the blocks. The blocks will be placed where it is required and executed when the project is started. Second type of coding follows the c++ syntax. It contains setup function and loop function. Based on the requirement, the number of functions varied. The resource person demonstrated three projects such as,

- Glowing an LED bulb
- Glowing an LED bulb using Arduino kit
- Displaying the meter reading using vibration sensor.

OUTCOME OF THE EVENT

- Got an idea about IoT projects
- Acquired skills to develop IoT projects using Tinkercad.com
- Understand the functionalities of each components and circuit designs
- Assist the students to develop project in this domain
- Acquired knowledge about Tinkercad.com

Internal seminar session snapshot

16/9/22

Co-ordinator

(Ms.S.Puvaneswari AP / CSE)

6/9/22

HOD/CSE

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021-22 (ODD SEM)

CIRCULAR

27.12.2021

Staff members are requested to attend the staff seminar.

Resource Person: Dr.D.Sivakumar AP/CSE

Venue: 223 (Smart Class room)

Timing: 3.00 pm – 3.30 pm

27/12/21
Staff Seminar Incharge
(Ms.S.Puvaneswari AP /CSE)

27/12/21
HOD/CSE

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021-22 (ODD SEM)

ATTENDANCE SHEET – INTERNAL STAFF SEMINAR

Date: 30.12.21

S.NO	STAFF NAME	SIGNATURE
1.	Dr.S.M.Uma	
2.	K.Abhirami	30/12/21
3.	S.Puvaneswari	30/12/21
4.	B.Sangeetha	30/12/21
5.	S.Rajarajan	30/12/21
6.	R.Ranitha	30/12/21
7.	Dr.D.Sivakumar	30/12/21
8.	R.Suganthalakshmi	30/12/21
9.	R.Sriramkumar	AB
10.	M.Arun	30/12/21
11.	G.Chandrapraba	30/12/21
12.	Santhi [R SHANTHI]	30/12/21
13.	Saranya [D.R. SARANYA]	30/12/21

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ACADEMIC YEAR 2021 – 2022 ODD SEMESTER

IEEE STUDENTS BRANCH STB 16621-DECEMBER, 2021

INTERNAL STAFF SEMINAR REPORT

Department of Computer Science & Engineering and students branch of IEEE jointly organized an internal staff seminar on 30.12.2021 at Smart Classroom (Room No.223).

OBJECTIVE

The objective of this seminar is to understand the performance of cuckoo search algorithms as energy saving mechanism in Wireless Sensor Networks.

SESSION DETAILS

Title: Energy Efficient Routing in WSNs Based on Dynamic Cuckoo Search Algorithm

Internal seminar for faculty of Computer Science Engineering department was conducted on 30.12.2021 from 3.15 P.M to 3.45 P.M in Smart Class room. Dr.D.Sivakumar, AP/CSE delivered the lecture on the topic "Trust-aware energy-efficient stable clustering approach using fuzzy type-2 Cuckoo Search optimization algorithm for wireless sensor networks". He explained how the cuckoo behaved in real time likewise the cluster head will be chosen. The node which has the high energy becomes the cluster head. To choose the node as cluster head, various parameters will be considered.

OUTCOME OF THE EVENT

- Got an idea about Cuckoo Search algorithm
- Understand the basics of WSN
- Assist the students to develop project in this domain
- Acquired knowledge about energy saving mechanism

REFERENCE:

- Trust-aware energy-efficient stable clustering approach using fuzzy type-2 Cuckoo Search optimization algorithm for wireless sensor networks, Nitin Mittal, Simarandeep sign, Urvinder Singh, Rohit Salgotra, Wireless Networks, January 2021, Pg No:151 - 174,

Dr.D.Sivakumar delivered the lecture

4/1/2022
Co-ordinator
(Ms.S.Puvaneswari AP / CSE)

4/1/2022
HOD/CSE

4/1/2022
Principal

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021-22 (ODD SEM)

CIRCULAR

27.1.2022

Staff members are requested to attend the staff seminar.

Resource Person: Mrs.Santhi AP/CSE

Venue: 223 (Smart Class room)

Timing: 12.30 pm – 1.15 pm

27/1/22

Staff Seminar Incharge
(Ms.S.Puvaneswari AP /CSE)

27/1/22

HOD/CSE

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021-22 (ODD SEM)

ATTENDANCE SHEET – INTERNAL STAFF SEMINAR

Date: 27.1.22

S.NO	STAFF NAME	SIGNATURE
1.	Dr.S.M.Uma	
2.	K.Abhirami	
3.	S.Puvaneswari	
4.	B.Sangeetha	
5.	S.Rajarajan	
6.	R.Ranitha	
7.	Dr.D.Sivakumar	
8.	R.Suganthalakshmi	
9.	R.Sriramkumar	
10.	M.Arun	
11.	G.Chandrapraba	
12.	Santhi	
13.	Saranya	

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ACADEMIC YEAR 2021 – 2022 ODD SEMESTER

IEEE STUDENTS BRANCH STB 16621-DECEMBER, 2021

INTERNAL STAFF SEMINAR REPORT

Department of Computer Science & Engineering and students branch of IEEE jointly organized an internal staff seminar on 31.1.2022 at Smart Classroom (Room No.223).

OBJECTIVE

The objective of this seminar is to gain insight knowledge about different fields of application of Helathcare IoT(HIoT).

SESSION DETAILS

Title: IoT based application in Healthcare devices

Internal seminar for faculty of Computer Science Engineering department was conducted on 31.1.2022 from 12.30 P.M to 1.15 P.M in Smart Class room. Ms.R.Shanthi, AP/CSE delivered the lecture on the topic "IoT based application in Healthcare devices". She explained the architecture of HIoT and technologies involved in HIoT. She described the services and the applications of HIoT. She concluded the seminar with challenges and issues in HIoT Technologies to provide smart healthcare application in upcoming years.

OUTCOME OF THE EVENT

- Got an idea about HIoT Technology
- Understand the architecture of HIoT
- Assist the students to develop project in this domain
- Assist the faculty members to do their research in this domain

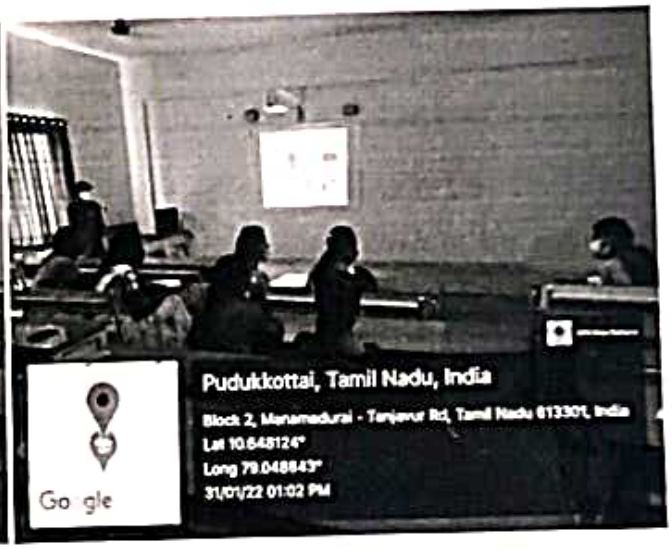
REFERENCE:

[1] Z. Ali, M. S. Hossain, G. Muhammad, and A. K. Sangaiah, "An intelligent healthcare system for detection and classification to discriminate vocal fold disorders," *Future Generation Computer Systems*, vol. 85, pp. 19–28, 2018.

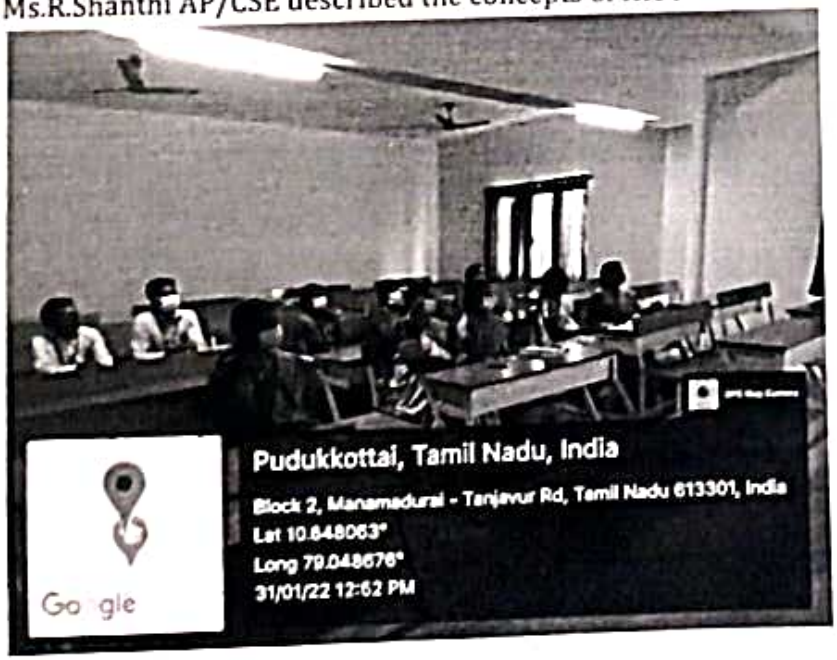
[2] G. Yang, L. Xie, M. Mantysalo et al., "A health-IoT platform based on the integration of intelligent packaging, unobtrusive bio-sensor, and intelligent medicine box," *IEEE Transactions on Industrial Informatics*, vol. 10, no. 4, pp. 2180–2191, 2014.

[3] Y. Yan, "A home-based health information acquisition system," *Health Information Science and Systems*, vol. 1, p. 12, 2013.

[4] M. Khan, K. Han, and S. Karthik, "Designing smart control systems based on internet of things and big data analytics," *Wireless Personal Communications*, vol. 99, no. 4, pp. 1683–1697, 2018.



Ms.R.Shanthi AP/CSE described the concepts of HIoT



Faculty members listen the seminar

4/2/22
Co-ordinator

4/2/22
HOD/CSE

J. Parvathi 05/2/2022
Principal

IoT-Based Applications in Healthcare Devices

Presented By
R.Shanthi M.Tech.,
AP/ CSE

Abstract

The last decade has witnessed extensive research in the field of healthcare services and their technological upgradation. To be more specific, the Internet of Things (IoT) has shown potential application in connecting various medical devices, sensors, and healthcare professionals to provide quality medical services in a remote location. This has improved patient safety, reduced healthcare costs, enhanced the accessibility of healthcare services, and increased operational efficiency in the healthcare industry. The current study gives an up-to-date summary of the potential **healthcare applications of IoT- (HIoT-)** based technologies. Herein, the advancement of the application of the HIoT has been reported from the perspective of enabling technologies, healthcare services, and applications in solving various healthcare issues. Moreover, potential challenges and issues in the HIoT system are also discussed.

Objective

- The current study provides a comprehensive source of information regarding the different fields of application of HIoT intending to help future researchers, who have the interest to work and make advancements in the field to gain insight into the topic.

Introduction

- In recent years, the healthcare industry has shown rapid growth and has been a major contributor to revenue and employment.
- The technological advancement that has been achieved through these years has now allowed the diagnosis of various diseases and health monitoring using miniaturized devices like smart watches.
- Moreover, technology has transformed a hospital-centric healthcare system into a patient-centric system.

Cont…

- The use of such communication services in conjunction with the rapidly growing technologies (e.g., machine learning, big data analysis, Internet of things (IoT), wireless sensing, mobile computing, and cloud computing) has improved the accessibility of the healthcare facilities.
- The IoT devices (sensors, actuators, and so on) have been integrated with other physical devices to monitor and exchange information using different communication protocols such as Bluetooth, Zigbee, IEEE 802.11 (Wi-Fi), and so on.

Architecture of HIoT

Hindawi
Journal of Healthcare Engineering
Volume 2021, Article ID 6632599, 18 pages
https://doi.org/10.1155/2021/6632599

Review Article

IoT-Based Applications in Healthcare Devices

Bikash Pradhan [1], **Saugat Bhattacharyya** [2], **and Kunal Pal** [1]

[1]*Department of Biotechnology and Medical Engineering, National Institute of Technology, Rourkela 769008, India*
[2]*School of Computing, Engineering & Intelligent System, Ulster University, Londonderry, UK*

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Received 25 December 2020; Revised 13 February 2021; Accepted 10 March 2021; Published 19 March 2021

Academic Editor: Mian Muhammand Sadiq Fareed

The last decade has witnessed extensive research in the field of healthcare services and their technological upgradation. To be more specific, the Internet of Things (IoT) has shown potential application in connecting various medical devices, sensors, and healthcare professionals to provide quality medical services in a remote location. This has improved patient safety, reduced healthcare costs, enhanced the accessibility of healthcare services, and increased operational efficiency in the healthcare industry. The current study gives an up-to-date summary of the potential healthcare applications of IoT- (HIoT-) based technologies. Herein, the advancement of the application of the HIoT has been reported from the perspective of enabling technologies, healthcare services, and applications in solving various healthcare issues. Moreover, potential challenges and issues in the HIoT system are also discussed. In sum, the current study provides a comprehensive source of information regarding the different fields of application of HIoT intending to help future researchers, who have the interest to work and make advancements in the field to gain insight into the topic.

1. Introduction

In recent years, the healthcare industry has shown rapid growth and has been a major contributor to revenue and employment [1]. A few years ago, the diagnosis of diseases and abnormality in the human body was only being possible after having a physical analysis in the hospital. Most of the patients had to stay in the hospital throughout their treatment period. This resulted in an increased healthcare cost and also strained the healthcare facility at rural and remote locations. The technological advancement that has been achieved through these years has now allowed the diagnosis of various diseases and health monitoring using miniaturized devices like smartwatches. Moreover, technology has transformed a hospital-centric healthcare system into a patient-centric system [2, 3]. For example, several clinical analyses (such as measuring blood pressure, blood glucose level, pO_2 level, and so on) can be performed at home without the help of a healthcare professional. Further, the clinical data can be communicated to healthcare centers from remote areas with the help of advanced telecommunication services. The use of such communication services in conjunction with the rapidly growing technologies (e.g., machine learning, big data analysis, Internet of things (IoT), wireless sensing, mobile computing, and cloud computing) has improved the accessibility of the healthcare facilities.

IoT has not only enhanced the independence but also diversified the ability of the human to interact with the external environment. IoT, with help of futuristic protocol and algorithms, became a major contributor to global communication. It connects a large number of devices, wireless sensors, home appliances, and electronic devices to the Internet [4]. The application of IoT can be found in the field of agriculture [5], automobiles [6, 7], home [8], and healthcare [1, 9]. The growing popularity of the IoT is due to its advantage of showing higher accuracy, lower cost, and its ability to predict future events in a better way. Further, increased knowledge of software and applications, with the upgradation of mobile and computer technologies, easy availability of wireless technology, and the increased digital economy have added to the rapid IoT revolution [10]. The IoT devices (sensors, actuators, and so on) have been integrated with other physical devices to monitor and exchange information using different communication

ACADEMIC YEAR 2021 – 2022 EVEN SEMESTER

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021-22 (EVEN SEM)

CIRCULAR

20.4.2022

Staff members are requested to attend the staff seminar.

Resource Person: Mrs.R.S.Karthiga

Venue: 223 (Smart Class room)

Timing: 12.30 pm – 1.15 pm

Date : 28.4.2022

20/4/22
Staff Seminar Incharge
(Ms.S.Puvaneswari AP /CSE)

20/4/22
HOD/CSE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021-22 (EVEN SEM)

ATTENDANCE SHEET – INTERNAL STAFF SEMINAR

Date: 28.4.22

Resource Person: Ms.R.S.Karthiga

S.NO	STAFF NAME	SIGNATURE
1.	Dr.S.M.Uma	
2.	K.Abhirami	
3.	S.Puvaneswari	
4.	B.Sangeetha	
5.	S.Rajarajan	
6.	R.Suganthalakshmi	
7.	M.Arun	
8.	G.Chandrapraba	
9.	R.Shanthi	
10.	D.R.Saranya	
11.	S.Priyadharshini	

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ACADEMIC YEAR 2021 – 2022 EVEN SEMESTER

INTERNAL STAFF SEMINAR REPORT

Department of Computer Science & Engineering and students branch of IEEE jointly organized an internal staff seminar on 28.4.2022 at smart classroom.

OBJECTIVE

The objective of this seminar is to gain insight knowledge to improve service delivery by scheduling a task in the Iaas of Cloud Computing.

SESSION DETAILS

Title: A Load Balancing Algorithm for data center to optimize cloud based application

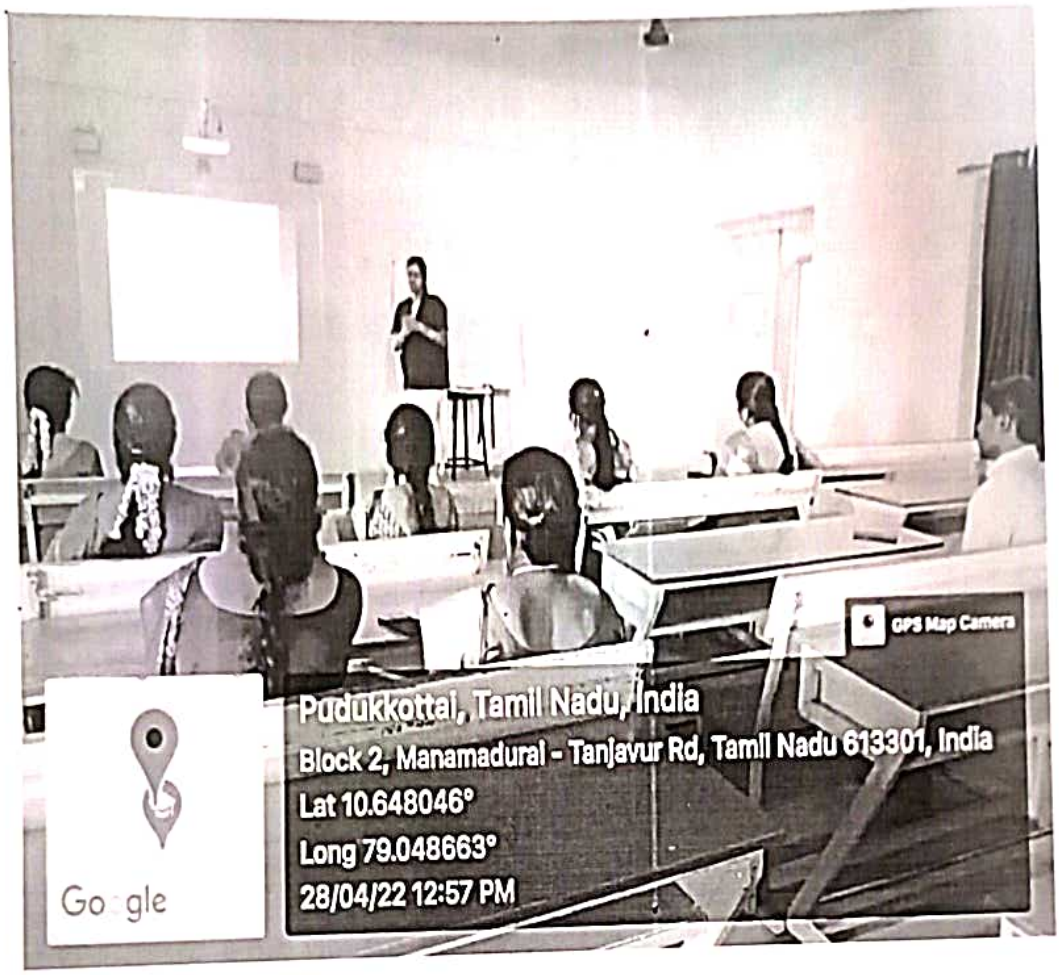
Internal seminar for faculty of Computer Science Engineering department was conducted on 28.4.2022 from 12.30 P.M to 1.15 P.M in Smart Class room. Ms.R.S.Karthiga, AP/CSE delivered the lecture on the topic "A Load Balancing Algorithm for data center to optimize cloud based application". She explained the purpose of improving service delivery of a resource in cloud based applications. She described the Load Balancing algorithm and its various parameters which determines the load of a resource. She concluded the seminar that the authors described a resource utilization formula which is used by the load balancing algorithm and it will be helpful to complete the task in cloud based domain.

OUTCOME OF THE EVENT

- Got an idea about load balancing algorithm
- Understand the performance of that algorithm
- Assist the students to develop project in this domain
- Assist the faculty members to do their research in this domain

REFERENCE:

[1]. A Load Balancing Algorithm for data center to optimize cloud based application



Internal seminar session snapshot

30/4/22

Co-ordinator

(Ms.S.Puvaneswari AP / CSE)

30/4

HOD/CSE

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ACADEMIC YEAR 2021-22 (EVEN SEM)

CIRCULAR

30.5.2022

Staff members are requested to attend the staff seminar.

Resource Person: Mrs.S.Priyadharshini

Date: 2.6.22

Venue: 223 (Smart Class room)

Timing: 12.30 pm – 1.15 pm

30/5/22
Staff Seminar Incharge
(Ms.S.Puvaneswari AP /CSE)

30/5/22
HOD/CSE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021-22 (EVEN SEM)

ATTENDANCE SHEET – INTERNAL STAFF SEMINAR

Date: 2.6.22 **Resource Person: Ms.S.Priyadharshini**

S.NO	STAFF NAME	SIGNATURE
1.	Dr.S.M.Uma	
2.	K.Abhirami	
3.	S.Puvaneswari	
4.	B.Sangeetha	
5.	S.Rajarajan	
6.	R.Suganthalakshmi	
7.	M.Arun	
8.	G.Chandrapraba	
9.	R.Shanthi	
10.	D.R.Saranya	
11.	S.Priyadharshini	

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

ACADEMIC YEAR 2021 – 2022 EVEN SEMESTER

INTERNAL STAFF SEMINAR REPORT

Department of Computer Science & Engineering and students branch of IEEE jointly organized an internal staff seminar on 2.6.2022 at smart classroom.

OBJECTIVE

The objective of this seminar is to gain insight knowledge about the application of AI algorithm in fruit quality classification.

SESSION DETAILS

Title: Implementation of fruit quality classification application using AI Algorithm

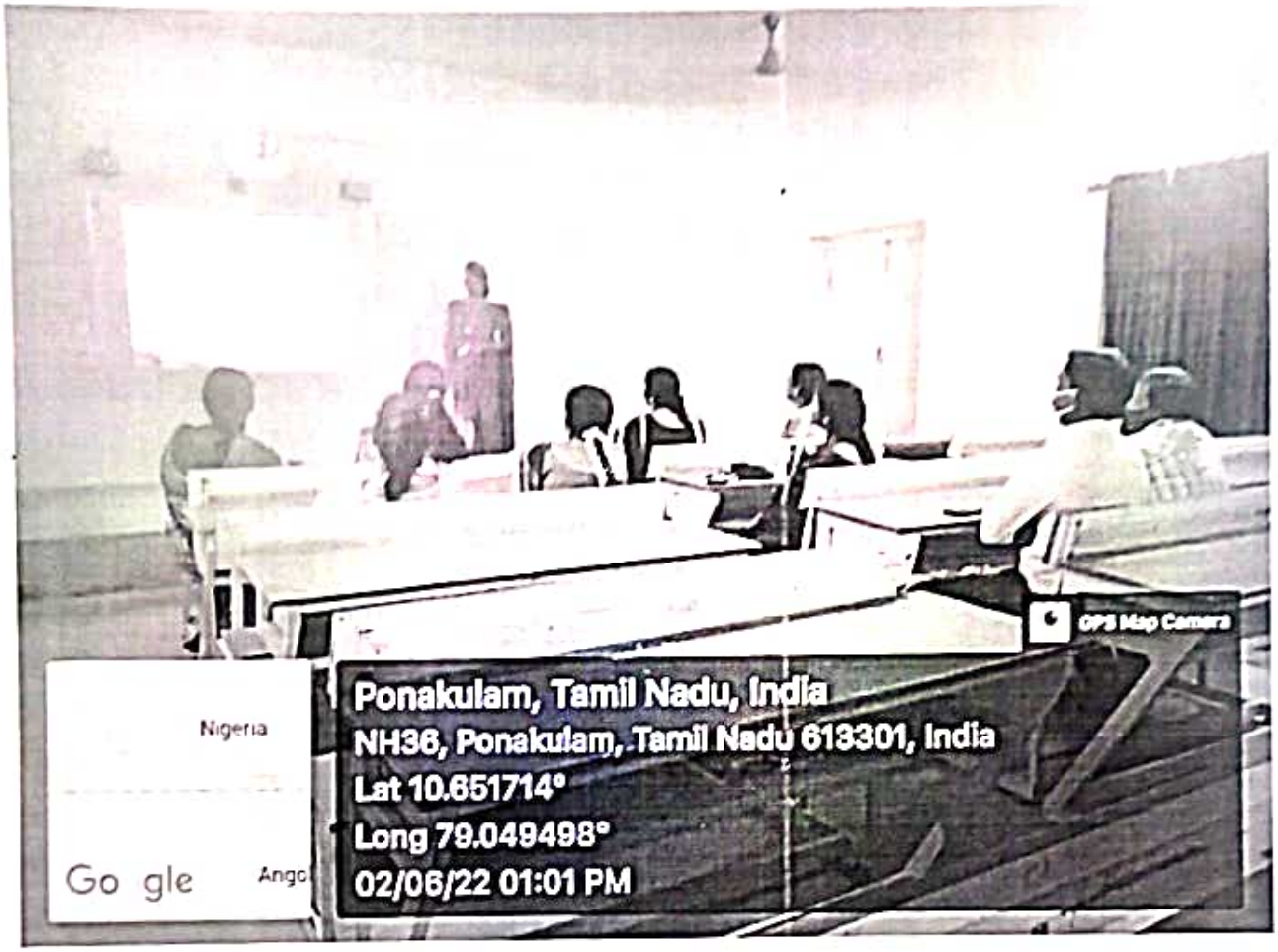
Internal seminar for faculty of Computer Science Engineering department was conducted on 2.6.2022 from 12.30 P.M to 1.15 P.M in Smart Class room. Ms.S.Priyadhashini, AP/CSE delivered the lecture on the topic "Implementation of fruit quality classification application using AI Algorithm". She explained the current issues to detect the quality of a fruit. She described an algorithm called "You only look once - (YOLO)-V3" which is used to track the quality of a fruit by tracking the image, size, height and size of a fruit. She concluded the seminar that the authors applied the Tiny - YOLO neural network model to perform object detection and compared several other models in terms of structural performance.

OUTCOME OF THE EVENT

- Got an idea about YOLO-V3 algorithm
- Understand the performance of that algorithm
- Assist the students to develop project in this domain
- Assist the faculty members to do their research in this domain

REFERENCE:

[1] Ming-Chih Chen, Yin-Ting Cheng and Chun - Yu Liu, "Implementation of a Fruit Quality Classification Application Using an AI Algorithm," *Sensors & Materials*, vol. 34, pp. 151 - 163, Nov, 2021.



Internal seminar session snapshot

3/6/22
Co-ordinator
(Ms.S.Puvaneswari AP / CSE)

3/6/22
HOD/CSE

FEEDBACK

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021 – 2022 ODD SEMESTER

INTERNAL STAFF SEMINAR FEEDBACK

Date of Event: 15.9.21

Resource Person: Ms.S.Puvaneswari

Title: IoT Application using Tinkercad.com

S.No	Staff Name	Comments	Signature
1.	R. Sugantha Lakshmi	Learnt a new tool	15/9/21
2.	K. Abhirami	Learn a new tool & found interesting	
3.	B. Sanjeethan	New knowledge learned thank you	
4.	M. ARUN	Really useful session	
5.	R. Sriram Kumar.	Learnt new tool	
6.	Dr. S. M. Uma	Gained knowledge about the tool	
7.	S. Rajagopalan	Informative Session	
8.	Dr. D. Swaminathan	Got an idea about tinkercad.com	
9.	G. Chandraprabha	Informative Session & Useful application	

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ACADEMIC YEAR 2021 – 2022 EVEN SEMESTER

INTERNAL STAFF SEMINAR FEEDBACK

Date of Event: 28.4.22

Resource Person: Ms.R.S.Karthiga

Title: A Load Balancing Algorithm for data center to optimize cloud based application

S.No	Staff Name	Comments	Signature
1.	R. Sugunthadevi	Informative	28/4/22
2.	S. PUVANESWARI	Useful for our research	S. Puv 28/4/22
3.	R. Shanthi	Algorithms explained clearly	R. Shanthi
4.	M. ARUN	Load balancing Algorithm explanation was good	
5.	G. Chandra Phraba.	Informative Session.	G. Chandra
6.	Dr. S. M. Uma	Gained knowledge on cloud based application	
7.	S. priyadharshini	Interesting session	
8	S. RAJARAJAN	Cloud explanation super	

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ACADEMIC YEAR 2021 – 2022 EVEN SEMESTER

INTERNAL STAFF SEMINAR FEEDBACK

Date of Event: 2.6.22

Resource Person: Ms.S.Priyadharshini

Title: Implementation of fruit quality classification application using AI Algorithm

S.No	Staff Name	Comments	Signature
1.	S. PUVANESWARI	Useful Content	S. Puv 2/6/22
2.	R. Shanthi	Applying Concept detailed understanding	R. Shanthi
3.	G. chandra prabha	Gain a New idea.	G. Cha.
4.	M. ARUN	very informative Session	
5.	R. Shyantha Lakshmi	Useful Session	2/6/22
6.	Dr. S. M. Uma	Informative Session	2/6/22
7	S. RAJARAJAN	Informative, Knowledge	

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ACADEMIC YEAR 2021-2022

Internal Staff Seminar

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ACADEMIC YEAR 2021-2022

INTERNAL STAFF SEMINAR – SUMMARY

S.No	Date	Title of the Seminar	Name of the Staff	Number of Participants
Academic Year 2021-22 **(ODD SEM)**				
1	15.09.2021	Efficient Power Saving Algorithm for WSN	Mr. S. Ramarajan, AP/ECE, KCE	13
2	06.10.2021	Arduino Simulation with TinkerCad	Mr.S.Sathyaraj, Assistant Professor /ECE	12
3	24.11.2021	Internet of Things (IoT) in Healthcare	Mr. T. Jeyaseelan AP/ECE	10
4	16.12.2021	Design of higher order tip-tilt mitigation system using wavefront sensorless Adaptive optics system in Terrestrial Free Space Optical Communication	Mr. T. Pasupathi, AP/ECE	11
5	28.12.2021	A Survey in Space Communications emerging technologies	Mr.W.Newton David Raj	10
Academic Year 2021-22 **(EVEN SEM)**				
6	22.04.2022	Healthcare Applications using Wireless Sensor Networks	Mr.R.Thandayuthapani, Assistant Professor/ECE	08
7	23.05.2022	Energy Management in smart buildings & homes Current approaches, a hypothetical solutions	Mr.S.Ramarajan	09

T.Pasupathi
Staff Incharge

22/11/2022
HOD

J. 22/11/2022
Principal

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year 2021-22(ODD SEM)

IEEE STUDENTS BRANCH STB 16621- September, 2021

INTERNAL STAFF TECHNICAL SEMINAR

Summary of the seminar:

Department of Electronics and Communication Engineering in association with IEEE student branch (16621) organized an Internal Seminar on 15th Sep, 2021 at 01:00PM for the teaching staffs of Department of ECE to provide a platform to get exposure in the field of recent trends in Electronics and Communication Engineering by accessing online journals facility available at our campus. Mrs.N.Mangaiyarkarasi, HOD/ECE welcomed the faculties. Mr.S.Ramarajan, Assistant Professor/ECE delivered a talk on "**Efficient Power Saving Algorithm for WSN**". All the faculties were attended the seminar.

Online Journal Paper Referred: Kanoun O, Bradai S, Khriji S, Bouattour G, El Houssaini D, Ben Ammar M, Naifar S, Bouhamed A, Derbel F, Viehweger C, **Energy aware system design for autonomous Wireless Sensor Nodes: A comprehensive review.** Sensors 2021, 21, 548.

Aim and the themes discussed:

Nowadays, wireless sensor networks are becoming increasingly important in several sectors including industry, transportation, environment and medicine. Autonomous energy supply is thereby an essential aspect as it decides the flexible positioning and easy maintenance, which are decisive for the acceptance of this technology, its wide use and sustainability.

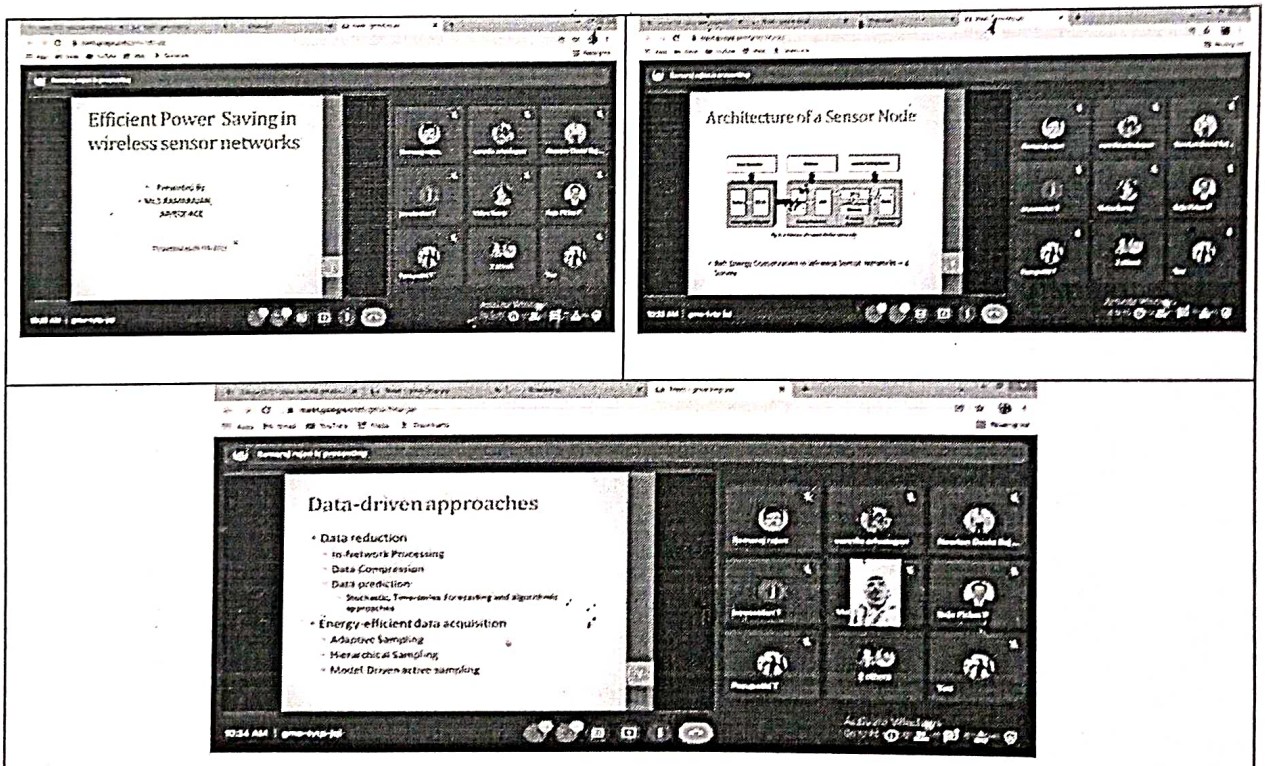
Significant improvements made in the last years have shown interesting possibilities for realizing energy-aware wireless sensor nodes (WSNs) by designing manifold and highly efficient energy converters and reducing energy consumption of hardware, software and communication protocols.

Using only a few of these techniques or focusing on only one aspect is not sufficient to realize practicable and market relevant solutions. This seminar therefore provides a comprehensive

review on system design for battery-free and energy-aware WSN, making use of ambient energy or wireless energy transmission. Also addresses energy supply strategies and gives a deep insight in energy management methods as well as possibilities for energy saving on node and network level.

Outcomes

- The seminar provides deep insight into system design and increase awareness of suitable techniques for realizing battery-free and energy-aware wireless sensor nodes and to introduce the basics of Wireless Sensor Networks (WSN), Classification, Topologies and Applications.
- The seminar briefed the different strategies to reduce the power consumption in WSN based on Clustering Routing Protocol. Finally Mr.S.Ramarajan clarified the questions raised by the faculty members. Mr.T.Pasupathi, AP/ECE, event coordinator delivered vote of thanks.



Mr.S.Ramarajan Presenting the topic

T.Pasupathi
Staff In charge 6/10/22

06/10/2022
Principal

PRINCIPAL
Kings College of Engineering.
PUNALKULAM - 613 303.

HOD 6/10/22

H.O.D.
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GANDARVAKOTTAI TALUK, PUDUKOTTAI DISTRICT

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Department of Electronics and Communication Engineering

Academic Year 2021-22 (ODD)

Circular – Internal Staff Seminar

All the faculty members of ECE are requested to attend an internal Staff Seminar scheduled on 06.10.2021 at 01.00 PM.

The details of the seminar are,

Resource Person: Mr. R.Sathyaraj, AP/ECE, KCE

Topic of the Seminar: Arduino Simulation with TinkerCad

T.Pas 4/10/21
Staff Incharge

HOD/ECE 4/10/2021

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year 2021-22(ODD SEM)

IEEE STUDENTS BRANCH STB 16621- October, 2021

INTERNAL STAFF TECHNICAL SEMINAR

06.10.2021

Summary of the seminar:

Department of Electronics and Communication Engineering & IEEE Students Branch STB 16621 jointly organized an Internal Staff Technical Seminar on **"Arduino Simulation with TinkerCad"** on **06.10.2021** through online mode. Mrs.N.Mangaiyarkarasi, HOD/ECE welcomed the faculties. Mr.S.Sathyaraj, Assistant Professor /ECE delivered lecture.

Objectives:

The technical seminar was organized with the following objective:

- Introducing the basic idea about Arduino.
- Creating different projects and real time applications.

Themes discussed:

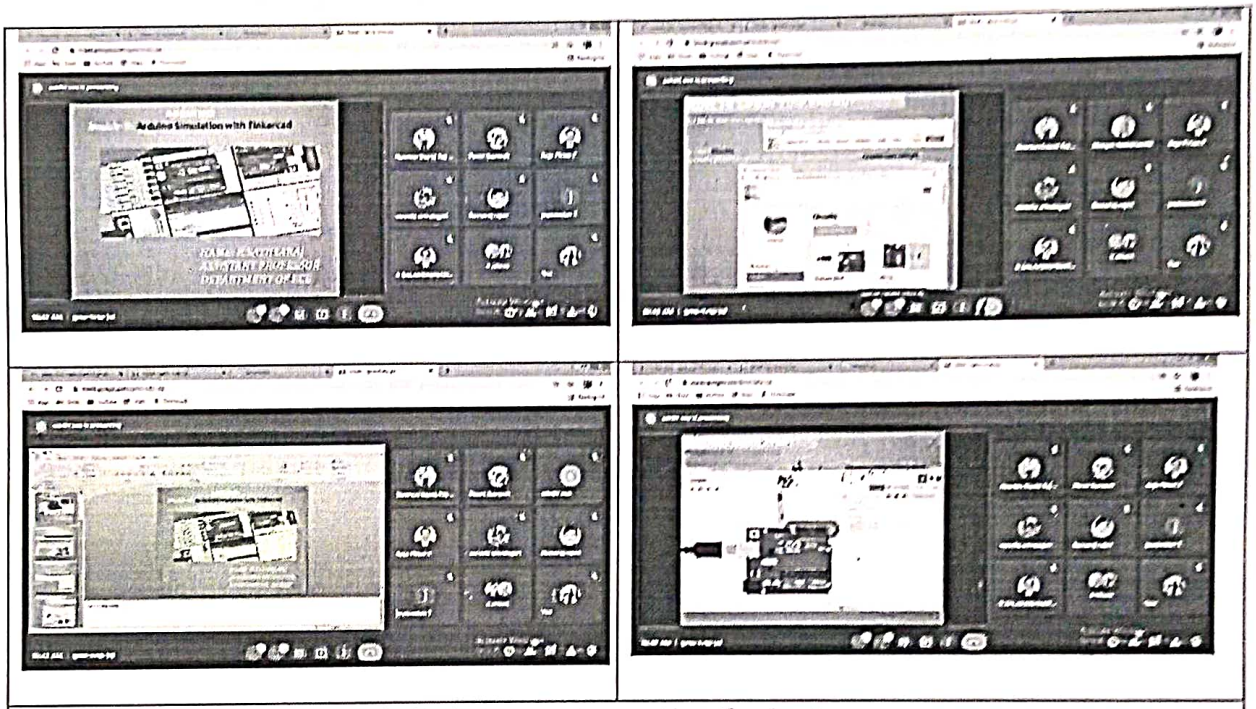
The Arduino is an open-source prototyping platform in electronics based on easy-to-use hardware and software flexible enough for advanced users. Arduino is a microcontroller based prototyping board which can be used in developing digital devices that can read inputs like finger on a button, touch on a screen, light on a sensor etc. and turning it in to output like switching on an LED, rotating a motor, playing songs through a speaker etc .Participants were indeed curious to provide various solutions.

Arduino runs on different Operating Systems such as Windows, and Linux etc. Seminar started with basic introduction about different variants of Arduino board and then simulation on Arduino using Tinkercad application.

He also demonstrated the programming and simulation of reading inputs from a various input devices and turning it into output like switching on an LED and controlling the speed of a motor, etc.,

Outcomes:

The session provided the insights of how we can use Arduino board to build low cost scientific instruments.



Mr.R.Sathyaraj Presenting the Lecture

T.Pasupathi 7/10/21
Staff In charge

7/10/2021
Principal
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7/10/2021
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Department of Electronics and Communication Engineering

Academic Year 2021-22 (ODD)

Circular – Internal Staff Seminar

All the faculty members of ECE are requested to attend an internal Staff Seminar scheduled on 24.11.2021 at 01.00 PM.

The details of the seminar are,

Resource Person: Mr. T. Jayaseelan, AP/ECE, KCE

Topic of the Seminar: Internet of Things (IoT) in Healthcare

T. Jayaseelan 24/11/21
Staff Incharge

24/11/2021
HOD/ECE

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year 2021-22(ODD SEM)

IEEE STUDENTS BRANCH STB 16621- November, 2021

INTERNAL STAFF TECHNICAL SEMINAR

24.11.2021

Summary of the seminar:

Department of Electronics and Communication Engineering in association with IEEE student branch (16621) organized an Internal Seminar on **24.11.2021** for the teaching staffs of Department of ECE to provide a platform to get exposure in the field of recent trends in Electronics and Communication Engineering by accessing reputed online journals. **Mrs.N.Mangaiyarkarasi**, HOD/ECE welcomed the faculties. **Mr.T.Jayaseelan**, Assistant Professor/ECE delivered a talk on "**Internet of Things (IoT) in Healthcare**". All the faculties were attended the seminar.

Online Journal Paper Referred:

Bikash Pradhan, Saugat Bhattacharyya, and Kunal Pal, **IoT-Based Applications in Healthcare Devices**, **Journal of Healthcare Engineering**, Volume 2021, Article ID 6632599, https://doi.org/10.1155/2021/6632599.

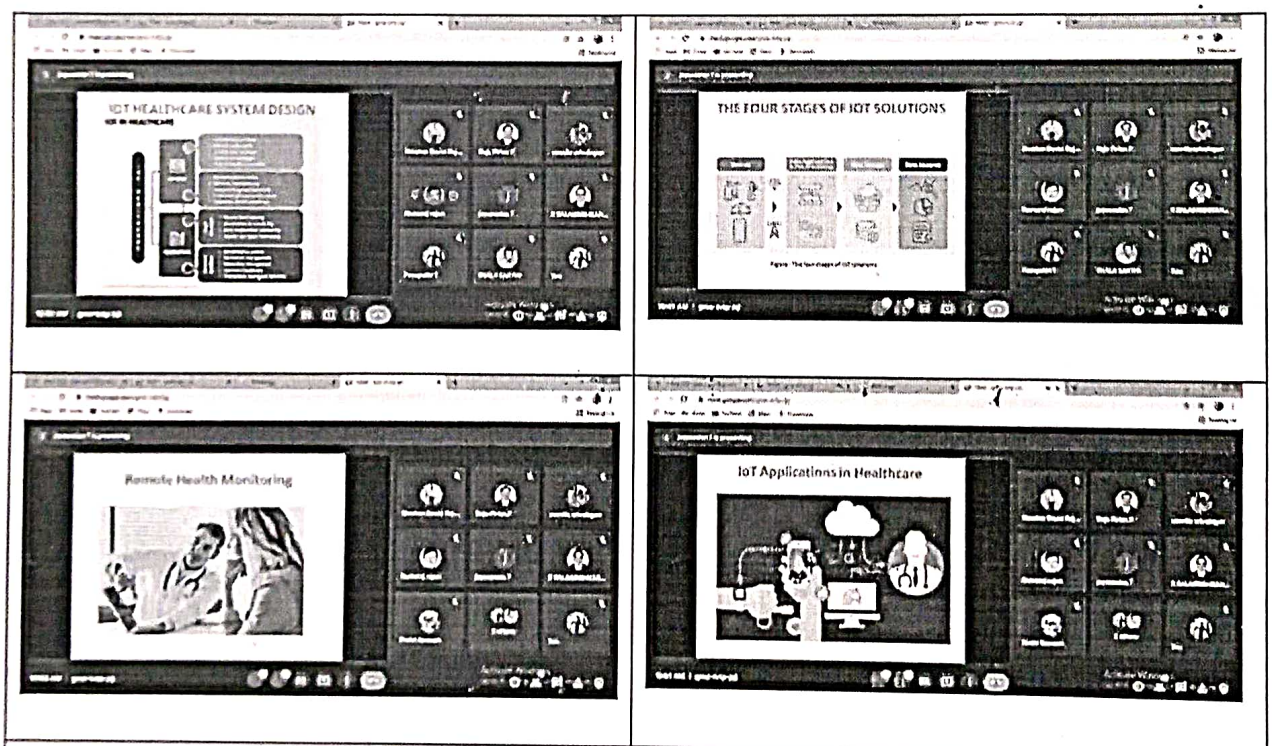
Aim and the themes discussed:

The Internet of Things (IoT) refers to new types of wireless, networked technologies that go beyond the traditional desktop screen and are instead embedded in various objects and tools. Through a wide variety of increasingly cheap sensors (implanted, wearable, mobile, environmental, and so on) the IoT opens up a variety of new socio-technical scenarios. The seminar focuses various applications of IoT in healthcare to improve the patient safety,

reduce healthcare costs, enhance the accessibility of healthcare services, and to increase operational efficiency in the healthcare industry.

Outcomes:

- The seminar gives an up-to-date summary of the potential healthcare applications of IoT- (HIoT-) based technologies. Herein, the advancement of the application of the HIoT is summarized from the perspective of enabling technologies, healthcare services, and applications in solving various healthcare issues.
- Potential challenges and research issues in the HIoT system are also discussed.
- Overall the seminar was helpful for the future researchers, who have the interest to work and make advancements in the field to gain insight into the topic.



Mr.T.Jayaseelan Presenting the topic

T. Pauramraj 25/11/21
Staff In charge

25/11/2021
HOD

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J. Mohan 25/11/2021
Principal

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Department of Electronics and Communication Engineering

Academic Year 2021-22 (ODD)

Circular – Internal Staff Seminar

All the faculty members of ECE are requested to attend an internal Staff Seminar scheduled on 16.12.2021 at 01.00 PM.

The details of the seminar are,

Resource Person: Mr. T.Pasupathi, AP/ECE, KCE

Topic of the Seminar: Design of higher order tip-tilt mitigation system using wavefront sensorless Adaptive optics system in Terrestrial Free Space Optical Communication

T.Pasupathi
Staff Incharge 14/12/21

14/12/2021
HOD/ECE

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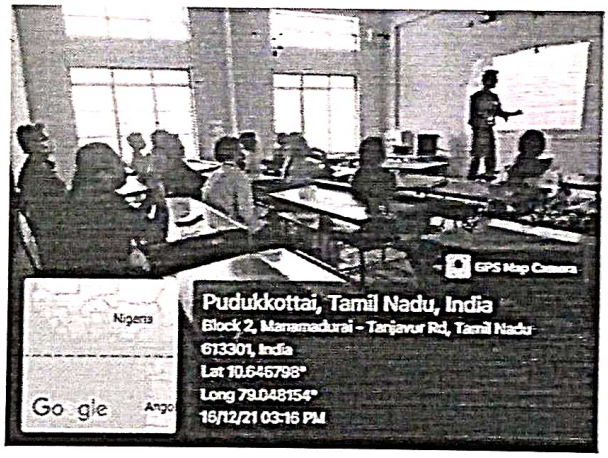
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year 2021-22(ODD SEM)

Internal Staff Seminar on 16.12.2021

Internal seminar for the faculty of Electronics and Communication Engineering Department was conducted on 16.12.2021 from 3.00 P.M to 4.00 P.M in ECE Smart Classroom. Mr. T. Pasupathi, AP/ECE delivered the lecture on the topic **Design of higher order tip-tilt mitigation system using wavefront sensorless Adaptive optics system in Terrestrial Free Space Optical Communication.** In his presentation, he briefed the introduction, features and applications of Free Space Optical Communication system. Also he explained the design of FSOC transmitter, receiver and the challenges faced during the design of FSOC system.



Mr.T.Pasupathi delivering the lecture

T.Pasupathi
Reported by 19/12/21

HOD/ECE 19/12/21

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KANDIYAROTTAI TALUK. PUDUKOTTAI DISTRICT.

T. Pasupathi 19/12/2021
Principal

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Department of Electronics and Communication Engineering

Academic Year 2021-22 (ODD)

Circular – Internal Staff Seminar

All the faculty members of ECE are requested to attend an internal Staff Seminar scheduled on 28.12.2021 at 01.00 PM.

The details of the seminar are,

Resource Person: Mr.W.Newton David Raj, AP/ECE, KCE

Topic of the Seminar: A Survey in Space Communications emerging technologies

T.Parameshwari 27/12/21
Staff Incharge

27/12/2021
HOD/ECE

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year 2021-22(ODD SEM)

IEEE STUDENTS BRANCH STB 16621- December, 2021

INTERNAL STAFF TECHNICAL SEMINAR

31.12.2021

Summary of the seminar:

Department of Electronics and Communication Engineering in association with IEEE student branch (16621) organized an Internal Seminar on 28.12.2021 for the teaching staffs of Department of ECE to provide a platform to get exposure in the field of recent trends in Electronics and Communication Engineering by accessing online journals facility available at our campus. Mrs.N.Mangaiyarkarasi, HOD/ECE welcomed the faculties. **Mr.W.Newton David Raj**, Assistant Professor/ECE delivered a talk on "**A Survey in Space Communications emerging technologies**". All the faculties were attended the seminar.

Reference Paper:

Oltjon Kodheli , Eva Lagunas , Nicola Maturo, Shree Krishna Sharma, Bhavani Shankar et al, **Satellite Communications in the New Space Era: A Survey and Future Challenges, IEEE communications surveys & tutorials**, Vol. 23, No. 1, First quarter 2021.

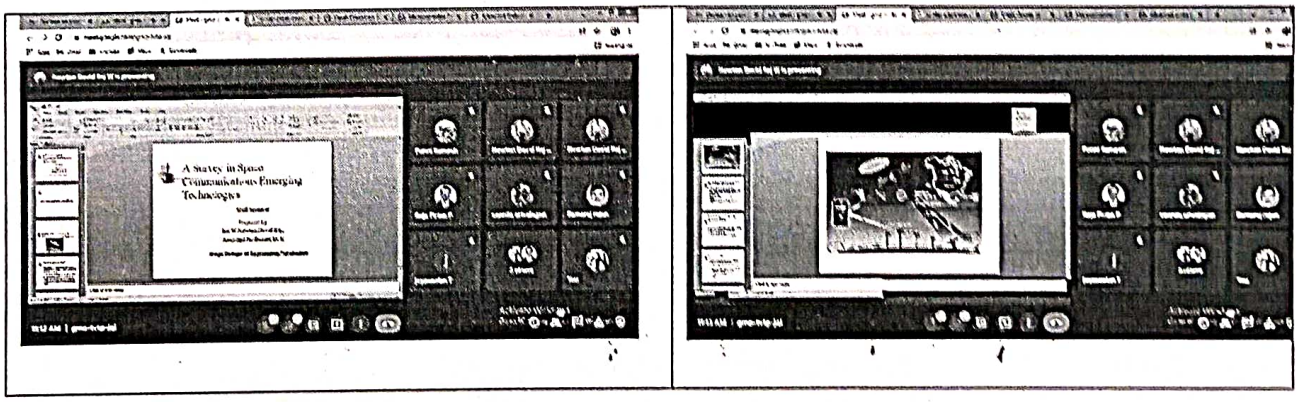
Aim and the themes discussed:

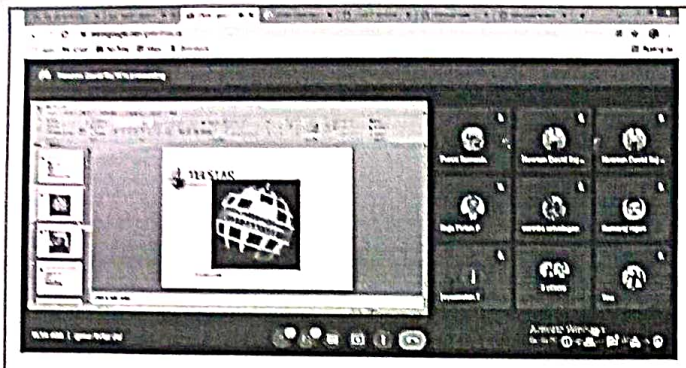
Satellite communications often called as SatComs have recently entered a period of renewed attention and motivated by technological improvement and raised through private investment and ventures. The seminar on **A Survey in Space Communications Emerging**

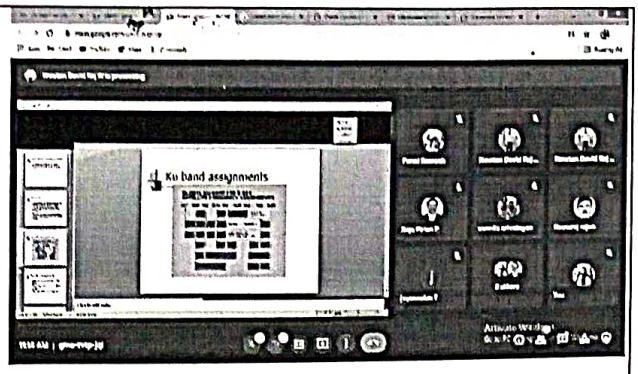
technologies is organized with aim at introducing the state of the art in SatComs, and highlighting the most promising open research topics. Firstly, the main innovation drivers are summarized, such as new constellation types, on-board processing capabilities, non-terrestrial networks and space-based data collection/processing. Secondly, the most promising applications such as 5G integration, space communications, Earth observation, aeronautical and maritime tracking and communication are described.

Outcome

- The seminar provides deep insight into latest technical advances in scientific, industrial and standardization analyses in the domain of satellite communications.
- In particular, the most important applications and use cases under the current focus of SatCom research have been highlighted.
- Also, some important future challenges and their respective open research topics have been described.
- Finally Mr.W.Newton David Raj clarified the questions raised by the faculty members. Mr.T.Pasupathi, AP/ECE, event coordinator delivered vote of thanks.







Mr.W.Newton David Raj presenting the topic

T.Parameshwar 31/12/21
Staff In Charge

31/12/2021
HOD

T. Rao 31/12/2021.
Principal

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Department of Electronics and Communication Engineering

Academic Year 2021-22 (EVEN)

Circular – Internal Staff Seminar

All the faculty members of ECE are requested to attend an internal Staff Seminar scheduled on 22.04.2022 at 01.00 PM.

The details of the seminar are,

Resource Person: Mr. R. Thandayuthapani, AP/ECE, KCE

Topic of the Seminar: Healthcare Applications using Wireless Sensor Networks

T.Pasumpon 20/4/22
Staff Incharge

20/4/2022
HOD/ECE

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year 2021-22(Even Sem)

IEEE STUDENTS BRANCH STB 16621- September, 2021

INTERNAL STAFF TECHNICAL SEMINAR

22.04.2022

Summary of the seminar:

Department of Electronics and Communication Engineering in association with IEEE student branch (16621) organized an Internal Seminar on 22.04.2022 at 01:00PM for the teaching staffs of Department of ECE to provide a platform to get exposure in the ffeld of recent trends in Electronics and Communication Engineering by accessing online journals facility available at our campus. Mrs.N.Mangaiyarkarasi, HOD/ECE welcomed the faculties. Mr.R.Thandayuthapani, Assistant Professor/ECE delivered a talk on **"Healthcare Applications using Wireless Sensor Networks"**. 08 faculties of ECE were attended the seminar.

Online Journal Paper Referred: Naila Nawaz Malik, Wael Alosaimi, M. Irfan Uddin, Bader Alouffi, Hashem Alyami, **"Wireless Sensor Network Applications in Healthcare and Precision Agriculture"**, Journal of Healthcare Engineering, vol. 2020, Article ID 8836613, 9 pages, 2020. https://doi.org/10.1155/2020/8836613

Aim and the themes discussed:

Nowadays, wireless sensor networks are becoming increasingly important in several sectors including industry, transportation, environment and medicine. Autonomous energy supply is thereby an essential aspect as it decides the flexible positioning and easy maintenance, which are decisive for the acceptance of this technology, its wide use and sustainability.

Significant improvements made in the last years have shown interesting possibilities for realizing energy-aware wireless sensor nodes (WSNs) by designing manifold and highly efficient energy converters and reducing energy consumption of hardware, software and communication protocols.

Using only a few of these techniques or focusing on only one aspect is not sufficient to realize practicable and market relevant solutions. This seminar therefore provides a comprehensive review on system design for battery-free and energy-aware WSN, making use of ambient energy or wireless energy transmission. Also addresses energy supply strategies and gives a deep insight in energy management methods as well as possibilities for energy saving on node and network level.

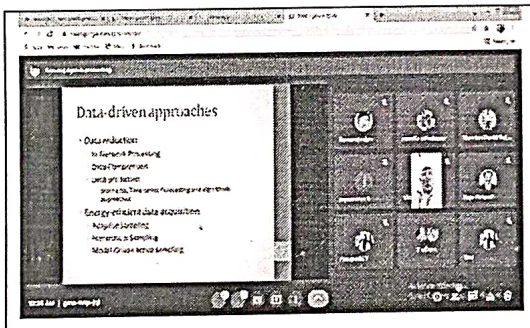
Outcomes

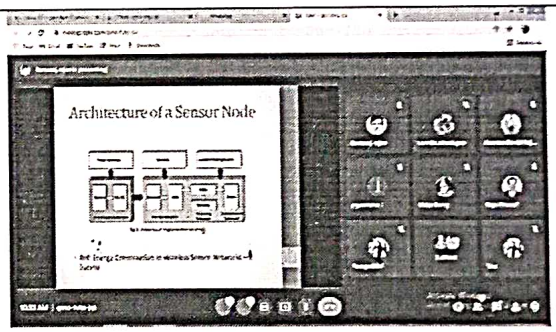
- The seminar provides deep insight into system design and increase awareness of suitable techniques for realizing battery-free and energy-aware wireless sensor nodes and to introduce the basics of Wireless Sensor Networks (WSN), Classification, Topologies and Applications.
- The seminar briefed the following,

  (1) Telemedicine applications,

  (2) monitoring patients both in the clinical setting and at home,

  (3) Sensors used to capture the data from hospital environment named heart beat sensor, body temperature sensor, room temperature sensor, CO sensor, and CO_2 sensor





Mr.R.Thandayuthapani Presenting the topic.

Staff In charge 26/4/22

Principal

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HOD 26/4/2022

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Department of Electronics and Communication Engineering

Academic Year 2021-22 (EVEN)

Circular – Internal Staff Seminar

All the faculty members of ECE are requested to attend an internal Staff Seminar scheduled on 23.05.2022 at 01.00 PM.

The details of the seminar are,

Resource Person: Mr. S. Ramarajan, AP/ECE, KCE

Topic of the Seminar: Energy Management in smart buildings & homes Current approaches, a hypothetical solutions

T. Pasupathi
Staff Incharge 21/5/22

HOD/ECE 21/5/2022

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year 2021-22(ODD SEM)

IEEE STUDENTS BRANCH STB 16621- September, 2021

INTERNAL STAFF TECHNICAL SEMINAR

23.05.2022

Summary of the seminar:

Department of Electronics and Communication Engineering in association with IEEE student branch (16621) organized an Internal Seminar on 23.05.2022 at 01.30PM for the teaching staffs of Department of ECE to provide a platform to get exposure in the field of recent trends in Electronics and Communication Engineering by accessing online journals facility available at our campus. Mrs.N.Mangaiyarkarasi, HOD/ECE welcomed the faculties. Mr.S.Ramarajan, Assistant Professor/ECE delivered a talk on "**Energy Management in smart buildings & homes Current approaches, a hypothetical solutions, open issues & Challenges**". 09 faculties of ECE were attended the seminar.

Online Journal Paper Referred: U. Mir, U. Abbasi, T. Mir, S. Kanwal and S. Alamri, "Energy Management in Smart Buildings and Homes: Current Approaches, a Hypothetical Solution, and Open Issues and Challenges," in *IEEE Access*, vol. 9, pp. 94132-94148, 2021, doi: 10.1109/ACCESS.2021.3092304.

Aim and the themes discussed:

The increasing availability and affordability of wireless building and home automation networks has increased interest in residential and commercial building energy management. This interest has been coupled with an increased awareness of the environmental impact of energy generation and usage. Residential appliances and equipment account for 30% of all energy consumption in OECD countries and indirectly contribute to 12% of energy generation related carbon dioxide (CO2) emissions (International Energy Agency, 2003).

The challenge is how to achieve this objective without negatively impacting people's standard of living or their productivity.

This seminar started with defining intelligent buildings and discuss building and home automation networks, as they provide the framework for intelligent environments. Then discussed appliance energy management and follow this with intelligent lighting control.

Outcomes

- The seminar provided a comprehensive state-of-the-art on various recent techniques and solutions which provide energy savings in smart homes and buildings.
- The seminar concluded with a discussion of the privacy and security threats that must be addressed in smart environments in order to guarantee widespread adoption of these technologies.

T. Pasupathy
Staff In charge 25/5/22

25/5/2022
Principal

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HOD

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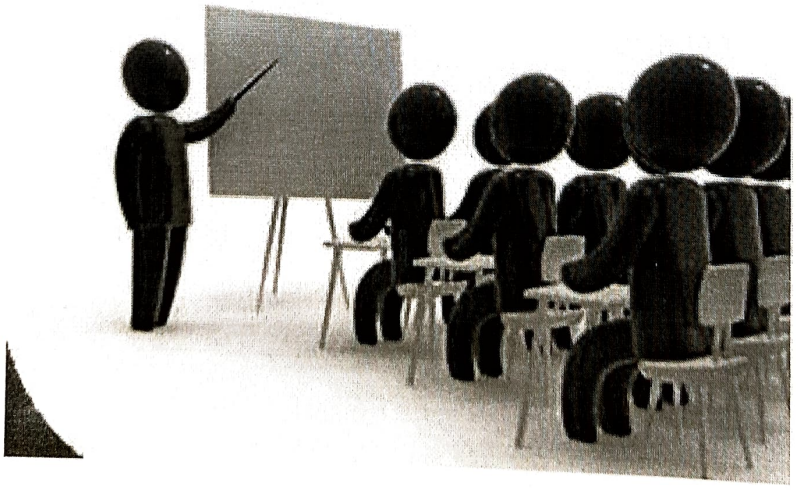
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR 2021-2022

INTERNAL STAFF SEMINAR



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR 2021-2022

INTERNAL STAFF SEMINAR SUMMARY

SL.NO	DATE	TITLE	STAFF NAME	NO OF PARTICIPANTS
ACADEMIC YEAR 2021-22 ODD SEMESTER				
1.	01.10.2021	Energy management systems	Mr.J.Arokiaraj	07
2.	17.11.2021	Generation of Power Using Gravity	Mr. S.R.Karthikeyan	06
3.	08.12.2021	Optimal Installation of Multiple DG Units using Competitive Swarm Optimizer(CSO)Algorithm	Dr.R.Arulraj	07
ACADEMIC YEAR 2021-22 EVEN SEMESTER				
4.	25.03.2022	Smart Grid Security	Mr.J.Arokiaraj	07
5.	31.03.2022	DC-DC Converter Topologies for Electric Vehicles and Fast charging Stations: State of the Art and Future Trends	Mr.R.Sundaramoorthi	07
6.	28.04.2022	PI controlling of Air Conditioning System	Mr.S.R.Karthikeyan	07
7.	29.04.2022	Internet of Flying Things	Dr.M.Meenalochani	07
8.	06.05.2022	A Review on Reduced switch count Multilevel Inverter Topologies	Dr.P.Narasimman	07
9.	13.05.2022	Electrical Engineering Design with the Subconscious Mind	Ms.P.Thirumagal	07
10.	20.5.2022	Hybrid WIPSO-GSA Algorithm based Optimal DG and Capacitor Planning Considering different Load types and Load levels.	Dr.R.Arulraj	07

15/6/2022
FACULTYINCHARGE

15/6/2022
HOD/EEE

A.ALBERT MARTIN RUBAN, M.E., Ph.D.
Head of the Department
Department of Electrical and Electronics Engineering
Kings College of Engineering,
Punalkulam,
Pudukkottai - 613 303.

15/6/2022
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ACADEMIC YEAR 2021-22 ODD

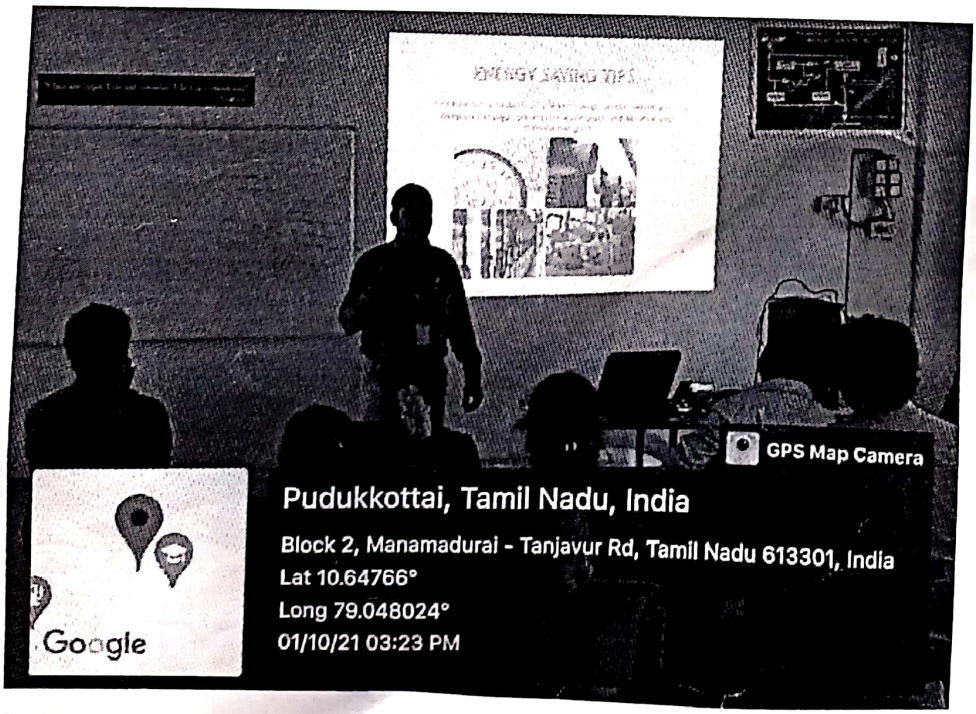
Internal IEEE Seminar– Report

Title of the Webinar	: "Energy Management System"
Date	: 01.10.2021
Resource Person	: Mr.J.Arokiaraj, AP/EEE, KCE
Beneficiaries	: EEE Faculty Members- 7

On behalf of Department of EEE, IEEE Branch has organized Internal Seminar on "Energy Management System" for faculty members, Department of EEE on 01.10.2021. The main objective of the internal seminar is to provide exposure to various research areas to our faculty members.

During the session the following points were discussed:

- Importance of Energy Management System (EMS)
- How EMS helps to take corrective action against high energy consumption, to optimize and monitor electrical parameters to achieve cost reduction.
- How best to manage your energy consumption.
- Energy saving tips.
- Energy management using renewable energy sources.



Snapshot from Seminar

Faculty In-Charge

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ACADEMIC YEAR 2021-22 ODD

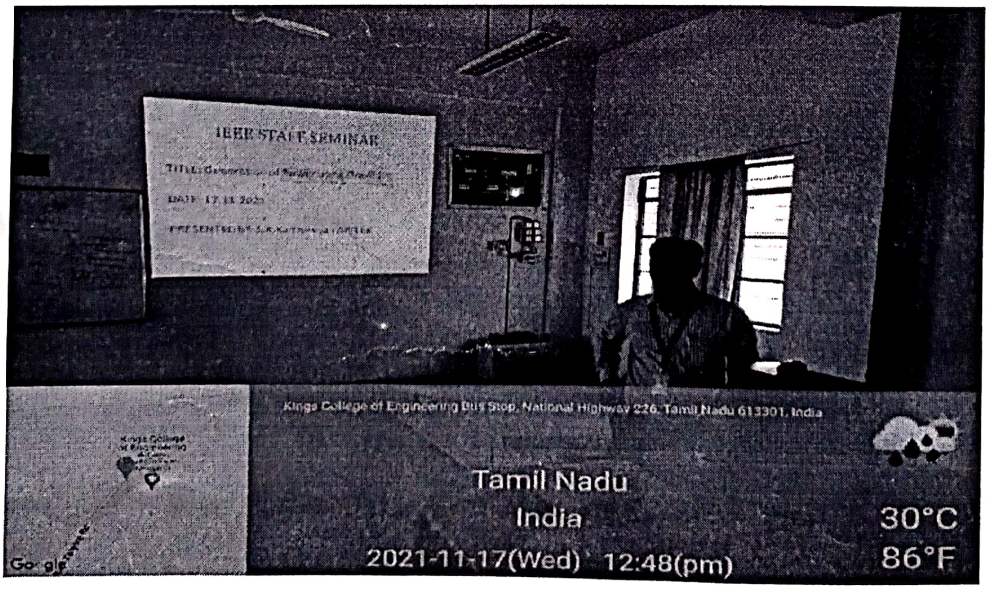
Internal IEEE Seminar – Report

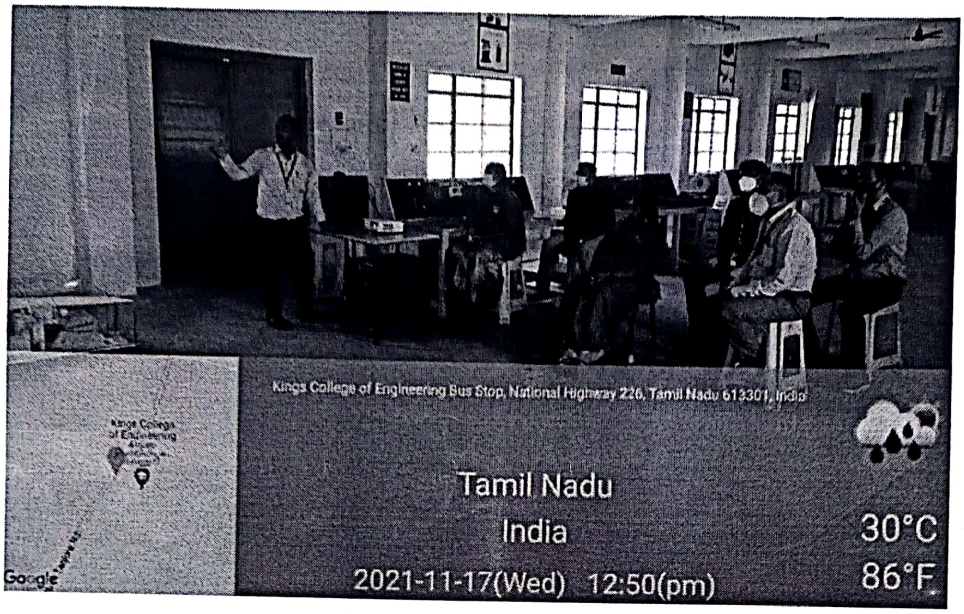
Title of the Webinar	: "Generation of Power Using Gravity"
Date	: 17.11.2021
Resource Person	: Mr.S.R.Karthikeyan, AP/EEE, KCE
Beneficiaries	: EEE Faculty Members- 6

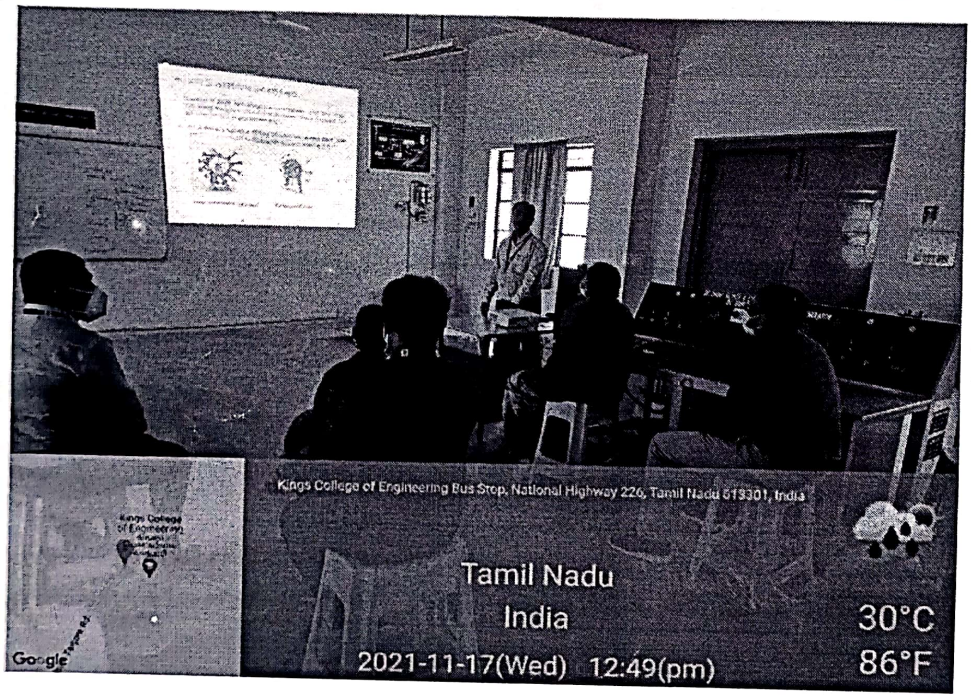
On behalf of Department of EEE, IEEE Branch has organized Internal Seminar on "Generation of Power Using Gravity" for faculty members, Department of EEE on 17.11.2021. The main objective of the internal seminar is to provide exposure to various research areas to our faculty members.

During the session the resource person discussed merits and demerits of various renewable energies. He explained the importance of gravity based power generator. He pointed out the recent research about gravity based power generation in the name of perpetual motion. He discussed about statistics of power sector in India. In his presentation he mentioned that 53% of Coal and 24.5% of renewable energy sources used for power generation as per the record of ministry of power, government of India as on 14.03.2021.

In order to increase the percentage of renewable energy sources for power generation, turn the focus towards gravity power generation. Gravitational energy is uniform, continuous and independent of atmospheric conditions and geometrical areas.







Snapshot from Seminar

Faculty In-Charge

HOD/EEE 9/12/21

Principal 9/12/2021.

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

ACADEMIC YEAR 2021-22 ODD

Internal IEEE Seminar – Report

Title of the Webinar	: "Optimal Installation of Multiple DG Units Using Competitive Swarm Optimizer (CSO) Algorithm"
IEEE Paper Details	: IEEE Congress on Evolutionary Computation (CEC), Page(s): 3955-3960, Year: 2016
Date	: 08.12.2021
Resource Person	: Dr. R. Arulraj, AP/EEE, KCE
Beneficiaries	: EEE Faculty Members- 7

On behalf of Department of EEE, IEEE Branch has organized Internal Seminar on "Optimal Installation of Multiple DG Units Using Competitive Swarm Optimizer (CSO) Algorithm" for faculty members, Department of EEE on 08.12.2021. The main objective of the internal seminar is to provide exposure to various research areas in evolutionary algorithms to our faculty members.

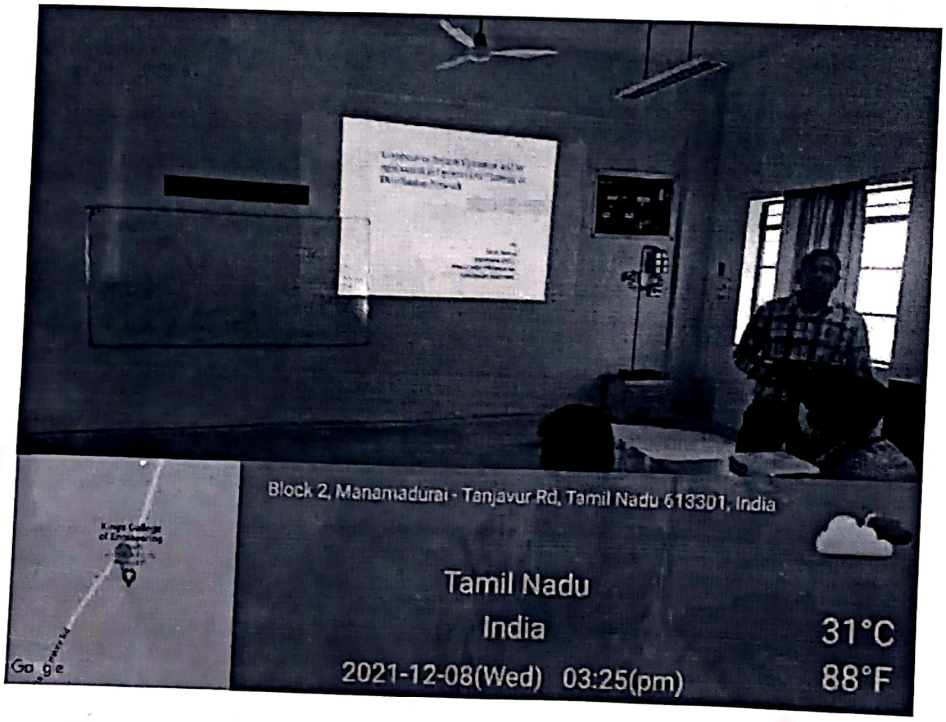
During the session the resource person discussed the importance of evolutionary algorithm in the field of Power System Engineering. He explained the importance of Competitive Swarm Optimizer algorithm which is an enhanced and modified version of Particle Swarm Optimization algorithm. He pointed out the drawbacks and weakness in Particle Swarm Optimization algorithm and how it is eliminated in the improved version of Competitive Swarm Optimizer algorithm while solving large scale optimization problems.

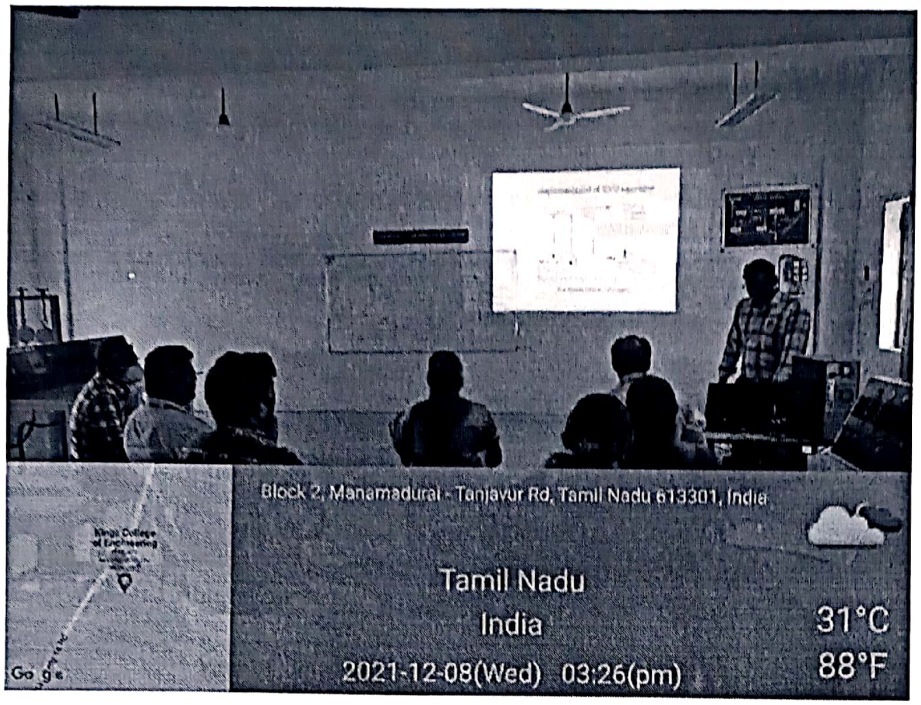
In order to provide deeper insight on the optimization technique, he explained the application of Competitive Swarm Optimizer algorithm in solving optimal Distributed Generation (DG) allocation problem in the distribution network. In the optimal DG planning problem, he provided a detailed explanation on formulation of system total power loss objective function along with various technical constraints

involved in the optimization process. Moreover, he described the enhancement done in exploration and exploitation capabilities of Competitive Swarm Optimizer algorithm using necessary equations. Furthermore, he explained the optimal DG planning problem using a neat flowchart in order to analyse the various computational steps involved in the optimization process of Competitive Swarm Optimizer algorithm. The simulation results along with convergence curve and computational time is explained to show the effectiveness of the solution technique in DG allocation problem. He also presented a detailed comparison report on the superiority of Competitive Swarm Optimizer algorithm over other existing optimization techniques in literature and also over different variants of Particle Swarm Optimization algorithm.

Finally he demonstrated the application of Competitive Swarm Optimizer algorithm in solving large scale optimization problems in different Engineering domains. At the end of the session faculties asked questions regarding implementation of Competitive Swarm Optimizer algorithm in different areas of Power Engineering and also expressed their willingness to publish research papers using Competitive Swarm Optimizer algorithm in near future.

Snapshots from Seminar:





Faculty In-Charge

HoD/EEE 10/12/21

10/12/2021.

Principal

Optimal Installation of Multiple DG Units Using Competitive Swarm Optimizer (CSO) Algorithm

Arulraj R, *Student Member, IEEE*
Department of Electrical Engineering
Annamalai University
Annamalai Nagar, India
e-mail: arulrajcdm88@gmail.com

N Kumarappan, *Senior Member, IEEE*
Department of Electrical Engineering
Annamalai University
Annamalai Nagar, India
e-mail: kumarappann@gmail.com

Abstract— **This paper investigates the optimal installation of multiple distributed generation (DG) units in radial distribution network using competitive swarm optimizer (CSO) algorithm. CSO algorithm is basically evolved from PSO algorithm but conceptually it is very different from PSO algorithm. In CSO algorithm, instead of using local best and global best for particle update, a pairwise competition between particles is introduced, so that the particle which fails in the competition will learn from the winner and update its position accordingly. The DG location and sizing problem is solved by the objective of minimizing total real power loss. Results demonstrate the effectiveness of the proposed method in minimizing total real power loss (P_{loss}) of the system. The dominance of the proposed method is also proved by comparing the simulation results with other optimization techniques.**

Keywords—distribution generation (DG); loss reduction; optimal DG location; optimal DG size; competitive swarm optimizer (CSO) algorithm.

I. INTRODUCTION

In recent years there has been significant increase in amount of DG units being integrated into the distribution network. The core reasons behind this increasing penetration of DG in distribution network are deregulation in electric power sector, advancement in electrical technology and also environmental and economic concerns. DG technologies such as renewable and non-renewable are currently used for DG applications in electric distribution system. Wind, solar, fuel cell and geothermal are some examples that come under renewable DG technologies and internal combustion engines, gas turbines and microturbines are some examples for non-renewable DG technologies. The non-renewable DG technologies have greater efficiency; however they have major disadvantages such as higher emissions, increased fuel cost and also scarcity in availability of raw materials. Lower emissions and abundant supply of primary energy source makes renewable DG technologies highly preferable over non-renewable DG technologies. However, renewable DG technologies have certain disadvantages such as intermittency and relatively lower efficiency. The disadvantages of renewable DG technologies can be overcome by using suitable grid connected power electronics converter/inverter and corresponding control techniques [1-2].

Generally, DG units are small scale generating units that are connected closer to load and they have significant impact on continuous and reliable supply of power to the end consumers. The review over basic definition of DG, key drivers, various DG technologies and potential DG benefits were presented in [3-4]. In literature, several methodologies have been developed to determine optimal DG installation in distribution network. In [5-7], analytical approaches were used to identify optimal DG location and sizing with minimization of P_{loss} as main objective. Even though analytical approaches are used to solve DG allocation problem, they require complex calculations and formulation of impedance matrix. To overcome this problem artificial intelligent techniques are generally used. Several artificial intelligent techniques such as simulated annealing [8], artificial bee colony algorithm [9], genetic algorithm (GA) [10], bacterial foraging optimization algorithm [11] and firefly algorithm [12] were employed so as to determine optimal DG installation in distribution network. In literature particle swarm optimization and few other PSO variants were also used to solve optimal DG installation problem, since PSO has attracted many researchers owing to its simplicity and higher efficiency. In [13] and [14], PSO technique was used to determine optimal DG location and sizing of single DG unit and multiple DG units respectively. In [15], the traditional PSO algorithm was enhanced into weight-improved particle swarm optimization (WIPSO) algorithm so as to identify suitable location and sizing of DG and capacitor in distribution network with minimization of generation cost as main objective. In [15], the inertia weight, cognitive and social factors of PSO algorithm was modified to attain enhanced WIPSO algorithm.

Generally PSO and its variants discussed earlier performs well for lower dimension problem which involves single DG installation, however they perform below par for multiple DG installation problem which have higher dimension. The occurrence of premature convergence owing to the strong influence of *gbest* (i.e. global best position) on convergence speed was the main reason behind the above weakness of PSO and its variants. To overcome this problem, in this paper CSO algorithm was proposed to determine optimal location and sizing of multiple DG units in radial distribution network. In

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Optimal Installation of Multiple DG Units Using Competitive Swarm Optimizer (CSO) Algorithm

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Pudukkottai, Tamil Nadu

Outline

- Introduction
- Problem Formulation
- Implementation of CSO Algorithm
- Flowchart for CSO Algorithm
- Simulation Results and Discussion
- Conclusion

Introduction

- In recent years there has been significant increase in amount of distributed generation (DG) units being integrated into the distribution network.
- DG units are small scale generating units that are connected closer to load .
- DG units have significant impact on continuous and reliable supply of power to the end consumers.
- The core reasons behind this increasing penetration of DG in distribution network are
  - ✓ Deregulation in electric power sector
  - ✓ Advancement in electrical technology
  - ✓ Environmental and economic concerns
- The DG technologies that are used for applications in electric distribution system are
  - ✓ Renewable
  - ✓ Non-renewable

Introduction

- Several artificial intelligent techniques were employed so as to determine optimal DG installation in distribution network such as
  - ✓ simulated annealing (SA)
  - ✓ artificial bee colony (ABC) algorithm
  - ✓ genetic algorithm (GA)
  - ✓ bacterial foraging optimization algorithm (BFOA)
  - ✓ firefly algorithm (FA)
- PSO has attracted many researchers all over the world owing to its simplicity and higher efficiency
- In literature, PSO and its variants such as WIPSO were already used for optimal installation of DG in distribution network.
- Generally PSO and its variants performs well for lower dimension problem which involves single DG installation, however they perform below par for multiple DG installation problem which have higher dimensions.

Introduction

- The main reason behind the above weakness of PSO and its variants is the occurrence of premature convergence owing to the strong influence of *gbest* (i.e. global best position) in the convergence speed.
- To overcome this problem, in this study CSO algorithm was proposed to determine optimal location and sizing of multiple DG units in radial distribution network.
- In CSO algorithm, instead of using *pbest* (i.e. local best position) and *gbest* for particle update, a pairwise competition is employed between the particles so that the loser will learn from the winner and update its position accordingly.
- Also, in CSO algorithm, the elimination of *pbest* and *gbest* avoids the need to store historical best positions and thereby increases the overall computational speed of the algorithm.
- The optimal multiple DG installation using the proposed CSO algorithm results in
  - ✓ Effective minimization of P_{loss} in the system.

Problem Formulation

- In any DG planning problem, distribution load flow (DLF) analysis plays a key role in the solution process.
- In this study, backward sweep and forward sweep method of distribution load flow is used.
- Considering N bus radial distribution system, the minimization of P_{loss} problem is formulated as follow;

$$\text{Min}(P_{loss}) = (P_G + \sum_{j=1}^{n} P_{DG,j}) - \sum_{i=1}^{N} P_{D,i} \quad (1)$$

Where,
- ✓ P_G is the real power injected at bus 1 from the substation;
- ✓ $P_{DG,j}$ is the real power generation of j^{th} DG unit;
- ✓ $P_{D,i}$ is the real power load connected at bus i ;
- ✓ n is the total number of DG units installed in the distribution network;
- ✓ N is the total number of buses in the distribution network.

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING
ACADEMIC YEAR 2021-22 EVEN
Internal IEEE Seminar – Report

Title of the seminar	: "Smart Grid Security"
Date	: 25.03.2022
Resource Person	: Mr.J.Arokiaraj, AP/EEE, KCE
Beneficiaries	: EEE Faculty Members- 7
Venue	: EEE – Smart Classroom

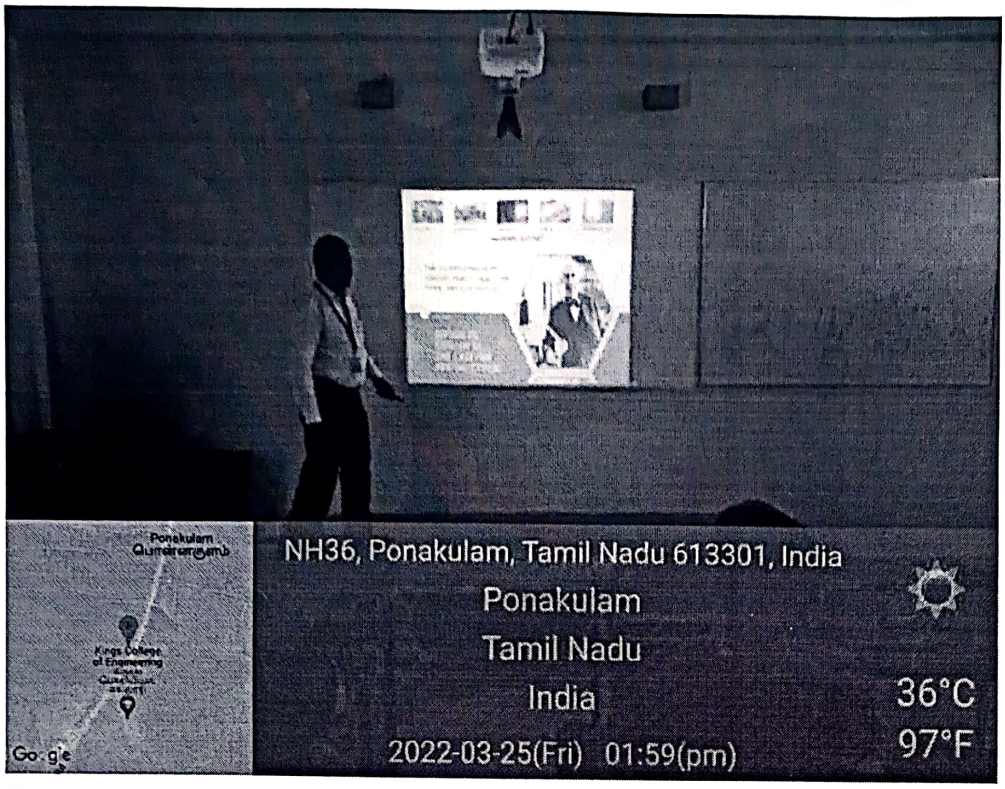
On behalf of Department of EEE, IEEE Branch has organized Internal Seminar on **"Smart Grid Security"** for faculty members; Department of EEE on 25.03.22 The main objective of the internal seminar is to provide exposure to various research areas to our faculty members.

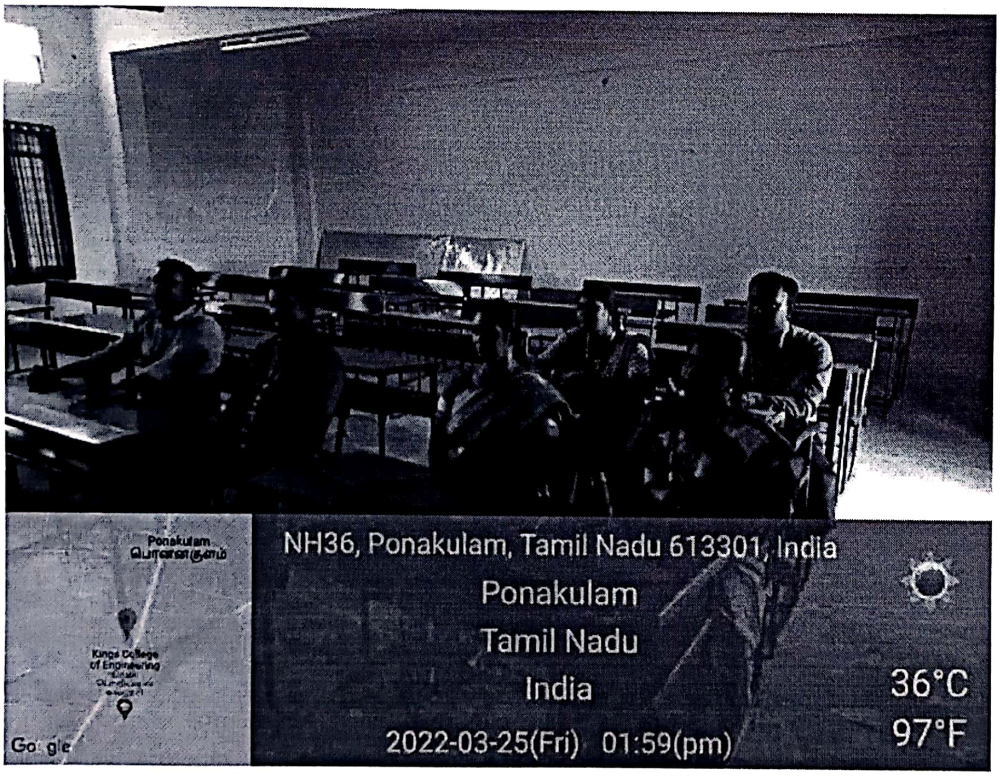
The following points were discussed during the session:

- The traditional electrical power grid
- Perspicacious grid integrates the traditional electrical power grid with information and communication technologies (ICT)
- Highlighted the involution of the keenly intellective grid network and discuss the susceptibilities concrete to this sizably voluminous heterogeneous network
- Domains of a smart grid
- Basic network architecture
- Attackers and types of attacks
- Challenges for new security solutions

Conclusions:

Traditional power systems are moving towards digitally enabled keenly intellective grids which will enhance communications, ameliorate efficiency, increment reliability, and reduce the costs of electricity accommodations. The massiveness of the astute grid and the incremented communication capabilities make it more prone to cyber attacks. Since the keenly intellective grid is considered a critical infrastructure, all susceptibilities should be identified and adequate solutions must be implemented to reduce threaten to an acceptable secure level.





Snapshot from Seminar

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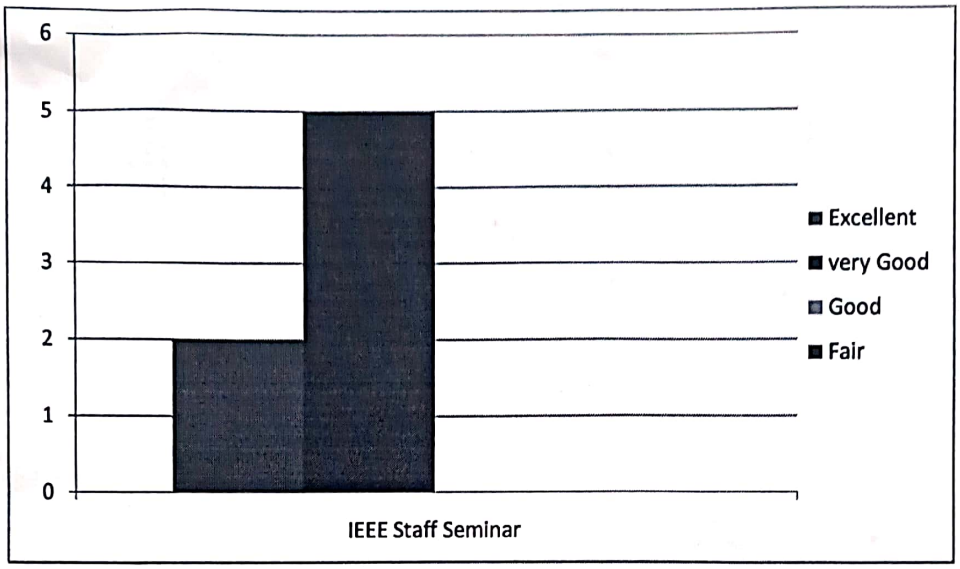

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Faculty In-Charge **HOD/EEE** 28/3/22 **Principal** 28/3/2022

2017 13th International Conference on Semantics, Knowledge and Grids

Smart Grid Security: Threats and Solutions

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Abstract—**the terms Smart grid, IntelliGrid, and secure astute grid are being used today to describe technologies that automatically and expeditiously (separate far from others) faults, renovate potency, monitor demand, and maintain and recuperate (firm and steady nature/lasting nature/vigor) for more reliable generation, transmission, and distribution of electric potency. In general, the terms describe the utilization of microprocessor-predicated astute electronic contrivances (IEDs) communicating with one another to consummate tasks afore now done by humans or left undone. These IEDs watch/ notice/ celebrate/ comply with the state of the puissance system, make edified decisions, and then take action to preserve the (firm and steady nature/lasting nature/vigor) and performance of the grid. Technology use/military accommodation in the home will sanction end users to manage their consumption predicated on their own predilections. In order to manage their consumption or the injuctive authorization placed on the grid, people (who utilize a product or accommodation) need information and an (able to transmute and get better) power distribution system. The astute grid is an accumulation of information sources and the automatic control system that manages the distribution of puissance, understands the transmutations in demand, and reacts to it by managing demand replication. Different billing (prosperity plans/ways of reaching goals) for mutable time and type of avail, as well as conservation and use or sale of distributed utilizable things/valuable supplies, will become part of perspicacious solutions.**

The traditional electrical power grid is currently evolving into the perspicacious grid. Perspicacious grid integrates the traditional electrical power grid with information and communication technologies (ICT). Such integration empowers the electrical utilities providers and consumers, amends the efficiency and the availability of the puissance system while perpetually monitoring, controlling and managing the authoritative ordinances of customers. A keenly intellective grid is an astronomically immense intricate network composed of millions of contrivances and entities connected with each other. Such a massive network comes with many security concerns and susceptibilities. In this paper, we survey the latest on keenly intellective grid security. We highlight the involution of the keenly intellective grid network and discuss the susceptibilities concrete to this sizably voluminous heterogeneous network. We discuss then the challenges that subsist in securing the keenly intellective grid network and how the current security solutions applied for IT networks are not adequate to secure astute grid networks. We conclude by over viewing the current and needed security solutions for the keenly intellective gird.

Keywords—smart grid; intelligrid; monitor; automatically; technology; vigor; nature; information; sanction; distributed

I. INTRODUCTION

The smart grid is a modern electrical power grid infrastructure for better efficiency, reliability, with possible integration of renewable and alternate energy sources. In order to achieve those broad objectives, keenly intellective grid integrates advanced information and communications technologies (ICT), automation, sensing and metering technologies, and energy management techniques predicated on the optimization of energy demand and supply into traditional power grid in order to make it more efficient in many ways. Smart grids provide electricity demand from the centralized and distributed generation stations to the customers through transmission and distribution systems. The grid is operated, controlled and monitored utilizing information and communications technologies (ICT). These technologies enable energy companies to seamlessly control the puissance demand and sanction for an efficient and reliable power distribution at reduced cost. Via digital two-way communications between consumers and electric power companies, the perspicacious grid system provides the most efficient electric network operations predicated on the received consumer's information. Security remains to be one of the most paramount issues in astute grid systems given the hazard and inconvenience denizens and companies kindred might encounter if the grid falls under attack.

Compared with legacy power systems, the Perspicacious Grid is envisioned to plenarily integrate high-speed and two-way communication technologies into millions of puissance equipments to establish a dynamic and interactive infra-structure with incipient energy management capabilities, such as advanced metering infrastructure (AMI) and authoritatively mandate replication. However, such a heftily ponderous dependence on information networking ineluctably surrenders the Perspicacious Grid to potential susceptibilities associated with communications and networking systems. This in fact increases the risk of compromising reliable and secure power system operation, which, nonetheless, is the ultimate objective of the Astute Grid. For example, it has been shown that potential network intrusion by adversaries may lead to a variety of rigorous consequences in the Astute Grid, from customer information leakage to a cascade of failures, such as massive blackout and eradication of infrastructures.

Three main security objectives must be incorporated in the smart grid system:

A. *Availability*: Ascertaining timely and reliable access to and utilization of information is of the most consequentiality in the Perspicacious Grid. This is because a loss of availability is the disruption of access to or utilization of information, which may further undermine the puissance distribution.

0-7695-6304-X/17/31.00 ©2017 IEEE
DOI 10.1109/SKG.2017.00039

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR 2021-2022(EVEN)

INTERNAL FACULTY SEMINAR REPORT

Department of EEE in association with IEEE has organized Internal Seminar on **" DC-DC Converter Topologies for Electric vehicles and fast charging stations: state of the Art and future trends** "on 31.3.2022. The main objective of the seminar is to provide basic research areas of different DC-DC Converter topologies for Electric vehicles.

Venue: Smart Class room

Resource Person (Internal):

Mr.R.Sundaramoorthi, Assistant Professor/EEE

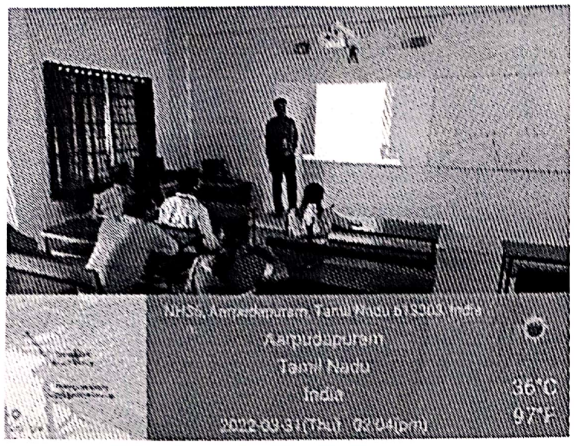
Ref: IEEE Transactions on Transportation and Electrification

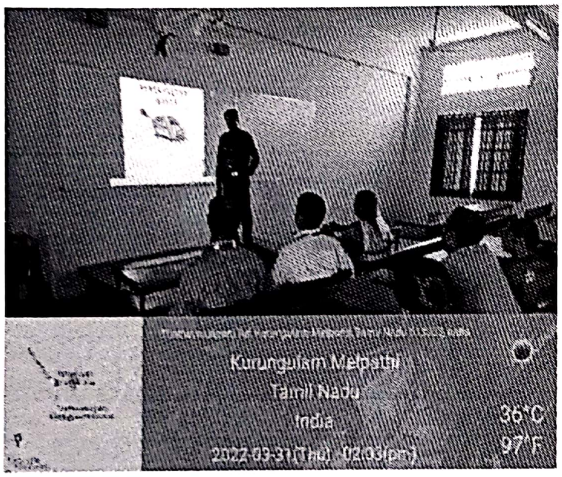
Mr.R.Sundaramoorthi,AP/EEE welcomed all the faculty members of EEE department. During his session, he started with basic Introduction about converter topologies and the importance of Electric and Hybrid Electric vehicles. He pointed out that, the large number of automobiles in use around the world has caused and continues to cause serious problems of environment and human life. Air pollution, global warming, and the rapid depletion of the earth's petroleum resources are now serious problems. Electric Vehicles (EVs), Hybrid Electric Vehicles (HEVs) and Fuel Cell Electric Vehicles (FCEVs) have been typically proposed to replace conventional vehicles in the near future.. Energy storage or supply devices vary their output voltage with load or state of charge and the high voltage of the DC-link create major challenges for vehicle designers when integrating energy storage / supply devices with a traction drive. He addressed the current research area about DC-DC converters can be used to interface the elements in the electric power train by boosting or chopping the voltage levels. Due to the automotive constraints, the power converter structure has to be reliable, lightweight, small volume, with high efficiency, low electromagnetic interference and low current/voltage ripple. He also explained about comparative study on three DC/DC converters topologies (Conventional step-up dc-dc converter, interleaved 4-channels step-up dc-dc converter with independent inductors and Full-Bridge step-up dc-dc converter) are carried out.

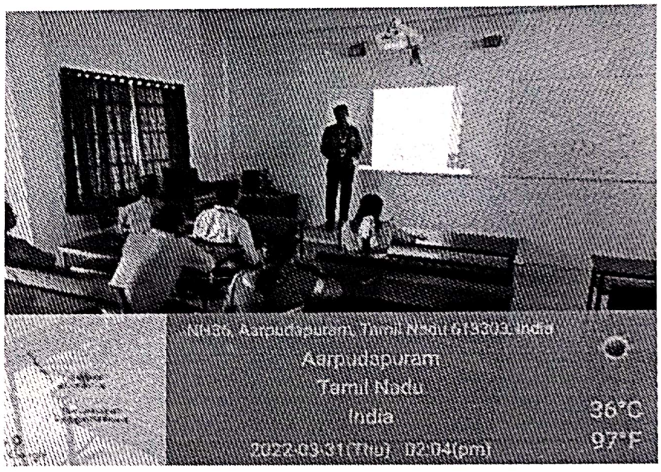
The modeling and the control of each topology are presented. Simulations of 30KW DC/DC converter are carried out for each topology. This study takes into account the weight, volume, current and voltage ripples, Electromagnetic Interference (EMI) and the efficiency of each converter topology. He briefed about the knowledge on different configurations of DC-DC Converters. He broadly given the ideas of Electric vehicle Battery Management Systems function such as (a) Provide battery safety and longevity, a must-have for Li-ion (b) Reveal state of function in the form of state of charge(SoC) and state of Health (SoH) (c) Prompt caution and service. He also explained different types of battery, importance and functions of Hybrid Electric vehicle. In addition, he also described charging stations importance and implementation. He has given broad idea of different features and specifications of BMS.

He briefed that, the different configurations of EV power supply show that at least one DC/DC converter is necessary to interface the FC, the Battery or the Super capacitors module to the DC-link. In electric engineering, a DC to DC converter is a category of power converters and it is an electric circuit which converts a source of direct current (DC) from one voltage level to another, by storing the input energy temporarily and then releasing that energy. In addition that, he explained about bi-directional converter can move power in either direction, which is useful in applications requiring regenerative braking and the amount of power flow between the input and the output can be controlled by adjusting the duty cycle (ratio of on/off time of the switch). He broadly explained about transformer-based converters may provide isolation between the input and the output and listed main drawbacks of switching converters include complexity, electronic noise and high cost for some topologies. He introduced about research areas on Electric vehicles such as cell balancing techniques, State of charge methods, State of Health and wireless charging techniques. He has briefed about the different techniques of estimating state of charge, state of health mechanisms and applications. He mentioned detailed explanation about all the methods of balancing techniques safe operating Area of different types of cells .Finally he pointed out what are the current research areas in battery Electric vehicles and Battery Management systems.

SNAPSHOTS







Mr.R.Sundaramoorthi AP/EEE delivering lecture during internal faculty Seminar

OUTCOME:

- Faculty will able to highlight basic research areas on DC-DC Converter and Hybrid Electric vehicles.
- Able to understand the different types of Battery Management Functions and methods to observe applications in this field.
- Learn how to model DC –DC Converter with simulink tool boxes.

FACULTY INCHARGE 4/4/2022

HOD/EEE 4/4/22

PRINCIPAL 04/4/2022

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

ACADEMIC YEAR 2021-22 EVEN

Internal IEEE Seminar – Report

Title of the seminar	: "PI controlling of Air Conditioning System"
Date	: 28.04.2022
Resource Person	: Mr.S.R.Karthikeyan, AP/EEE, KCE
Beneficiaries	: EEE Faculty Members- 7
Venue	: EEE – Smart Classroom

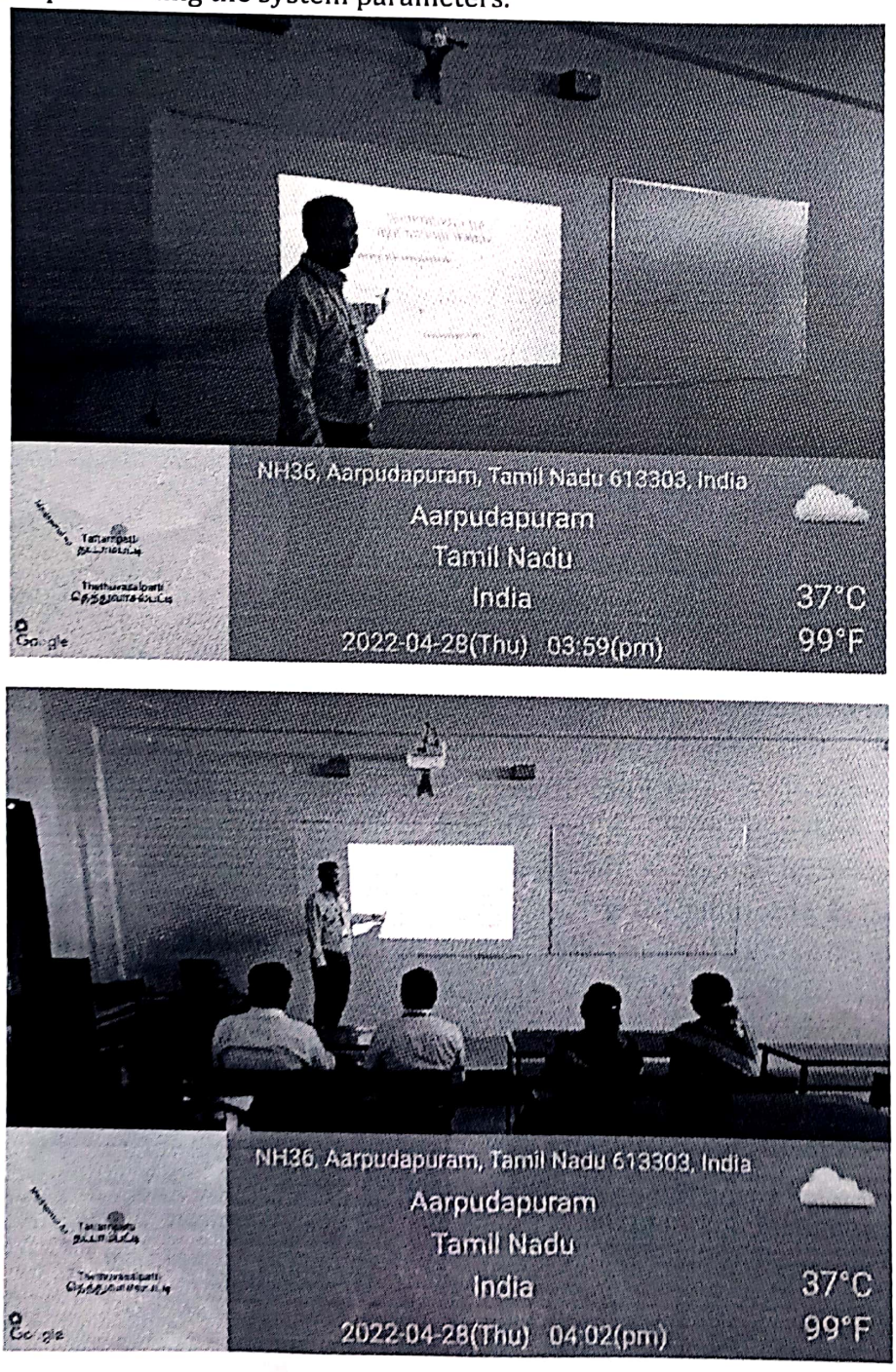
On behalf of Department of EEE, IEEE Branch has organized Internal Seminar on "PI controlling of Air Conditioning System" for faculty members, Department of EEE on 28.04.2022. The main objective of the internal seminar is to provide exposure to various research areas to our faculty members.

The following points were discussed during the session:

- Introduction of controller.
- The traditional PID controller is widely used in a variety of industrial production situations and has achieved successful applications.
- Model of the air-conditioning system.
- The design of the fuzzy PI controller.
  In the design of the PI control, Kp and Ki can be determined according to the mathematical model of the plant, and then the controlled variable can be calculated according to error e, thus the actuator is driven to decrease the system error until the controlled plant to be steady in the tolerance range.
- Structure of the adaptive fuzzy PI controller.
- Determining the membership function.
  The input of the fuzzy controller is Error E and the variable rate of error EC, and the output is the parameters of the PI controller Kp, Ki.
- Constructing the fuzzy rule.
  The main problem with fuzzy logic controller generation is related to the choice of the regulator parameters. Indeed, there is no systematic procedure for the design of a fuzzy controller.

Conclusions:

It is difficult for the traditional PID controller to realize the speedy and accurate response without overshoot, so the parameters self-adaptive fuzzy PI controller is proposed in the air-conditioning system. By making use of PI control and fuzzy control synthetically, the control effect of the air-conditioning system has been increased to a great extent. The hybrid control is designed to eliminate the static error which exists in the fuzzy controller and achieve the requirements for real-time and high precision by means of adaptive tuning the system parameters.



Snapshot from Seminar

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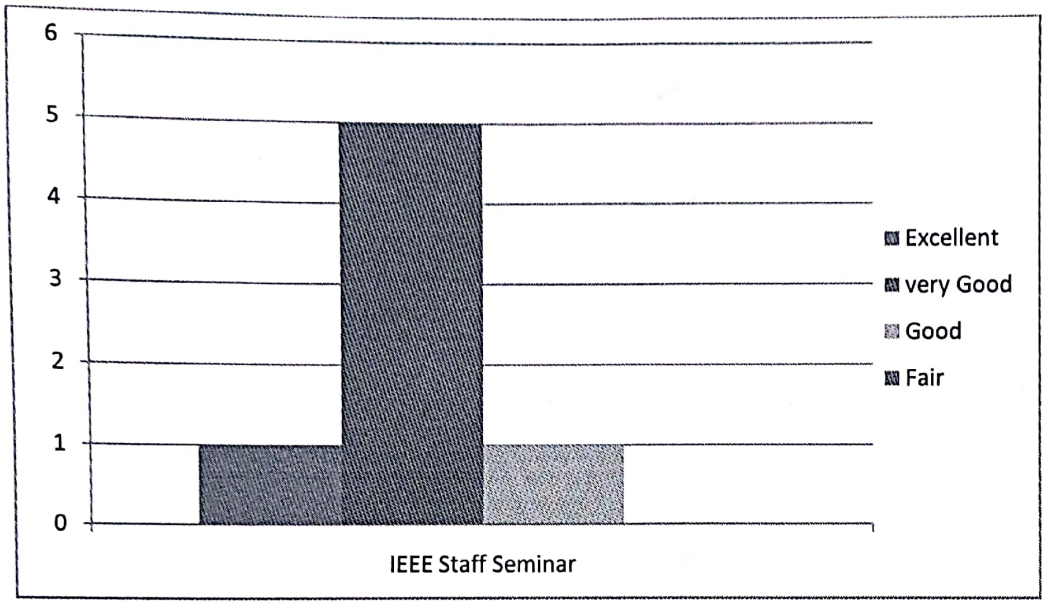

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HOD/EEE

28/4/22
Principal

Application of Self-adaptive Fuzzy PI Control in the Air-conditioning System

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Abstract: The practical performance of the controller in the air-conditioning system is very important to the whole system. Although the traditional PID controller is widely used in a variety of industrial production situations and has achieved successful applications, it is only suitable for the analysis and design of the linear system, and it's unable for the analysis and design of the air-conditioning system which is time-delay and nonlinear. In this paper, a self-adaptive fuzzy PI control strategy is proposed to be used in the air-conditioning system. Simulation results and the practical control effect prove that the compound control structure possesses better performance than the conventional control method and satisfactory effects have been obtained.

Key Words: PI controller, Self-adaptive fuzzy PI control, Air-conditioning system, Fuzzy reference

1 INTRODUCTION

With the rapid progress of the industrial production and the living level in our society, more and more air-conditioning systems are being used to meet the practical demands. Due to the shortage of different kinds of energies, energy saving is also becoming more and more urgent to tackle this situation. Therefore, it's still a challenging task to provide high quality of producing or living environment at the cost of the least energy consuming. In this process, the actual performance of the controller in the air-conditioning system plays an important role, and the control strategy is of great importance. The traditional PID controller is widely used in a variety of industrial production situations and has achieved successful applications. Nevertheless, the PID method is only suitable for the analysis and design of the linear system, and it's unable to be used in the nonlinear systems [1-3]. In this paper, as result, a self-adaptive fuzzy PI control scheme is proposed to fulfill the control function of the air-conditioning system, and satisfactory effects have been obtained.

2 MODEL OF THE AIR-CONDITIONING SYSTEM

2.1 PI Controller

To validate the practical control effect of the air-conditioning system, a testing room is used to conduct the experiment, which is 5.0m×4.0m×3.5m (length×width×height). It mainly includes a refrigerating assembling unit, an electric heater, and a fan, etc. The mathematical model of the air-conditioning system which is constructed by means of lumped parameter method is an inertial element of first order [4, 5]. However, since there is a certain delay in the air-conditioning system, the actual mathematical models of the testing room and the load interference are all inertial elements of first order plus the delay element, which are provided with the following normalized form

$$G(s)=\frac{K_s\cdot e^{-\tau s}}{T_s s+1} \tag{1}$$

where K_s is the amplification coefficient [°C/kW], T_s is the time constant [min], τ is the delay time [min].

2.2 Model of the system

Considering that the electric heater is the only means to control the temperature of the testing room, in the air-conditioning system, the amplification coefficient $K_s=K_u\cdot R_{eq}$, the time constant $T_s=C\cdot R_{eq}$; in the mathematical model of the load interference, $K_s=R_{eq}$, the time constant $T_s=C\cdot R_{eq}$, where K_u is the proportion coefficient which the electric heater outputs [kW], R_{eq} is the equivalent thermal resistance of the air-conditioning system [°C/kW], C is the equivalent thermal capacity of the air-conditioning system [kJ/°C]. The pure delay in the models of the air-conditioning system and the load interference are consistent, i.e., $\tau = T_d$. The approximate delay time can be obtained through the step response in the experiment of the air-conditioning system. The models of the air-conditioning system and the load interference are shown in equations (2) and (3), respectively.

$$G(s)=\frac{Y(s)}{U(s)}=\frac{k_u\cdot e^{-T_d s}}{Cs+1/R_{eq}} \tag{2}$$

This work is supported by Research Fund for the Doctoral Program of Henan Institute of Science & Technology and Science Foundation for the Excellent Youth Scholars of Henan Province.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR 2021-22 / EVEN SEMESTER

Date: 01.05.2022

INTERNAL FACULTY SEMINAR REPORT

Objective:

- To impart knowledge to faculty on recent developments and technological advancements in the field of Electrical and Electronics Engineering.
- To improve the IEEE journal access by faculty through which they can update their knowledge on recent topics

Title: Internet of Flying Things

Internal seminar for faculty of Electrical and Electronics Engineering department was conducted on 29.04.2021 from 3.00 P.M to 4.00 P.M in EEE Smart class room. Dr.M.Meenalochani, AP/EEE lectured on the topic "Internet of Flying Things". She explained that flying things such as drones and Unmanned Aerial Vehicles (UAVs) have been applied in several fields, usually operating in cooperative and collaborative swarms to enable the execution of more dynamic missions. Thus, the new Flying Adhoc Networks (FANETs) paradigm has emerged, a subset of mobile ad hoc networks with specific characteristics that arise from the aviation context. Recently, the ideas from FANETs have started to be synthesized with those from the Internet of Things (IoT), originating the Internet of Flying Things (IoFT), a paradigm which enables an important new level of applications, solves known issues in UAVs and IoT, and expands the range of future applications.

She explained that COVID-19 has increased the use of flying IoT in general. China has deployed drones for crowd monitoring in order to maintain social distance. In addition, several European countries are using unmanned aerial vehicles (UAVs) for announcements or

broadcasting in order to take appropriate actions. Agricultural drones may be used to spray disinfectants in order to stop the transmission of a deadly virus. Drones, on the contrary, can be used to deliver medicine quickly and reduce the burden on hospitals.

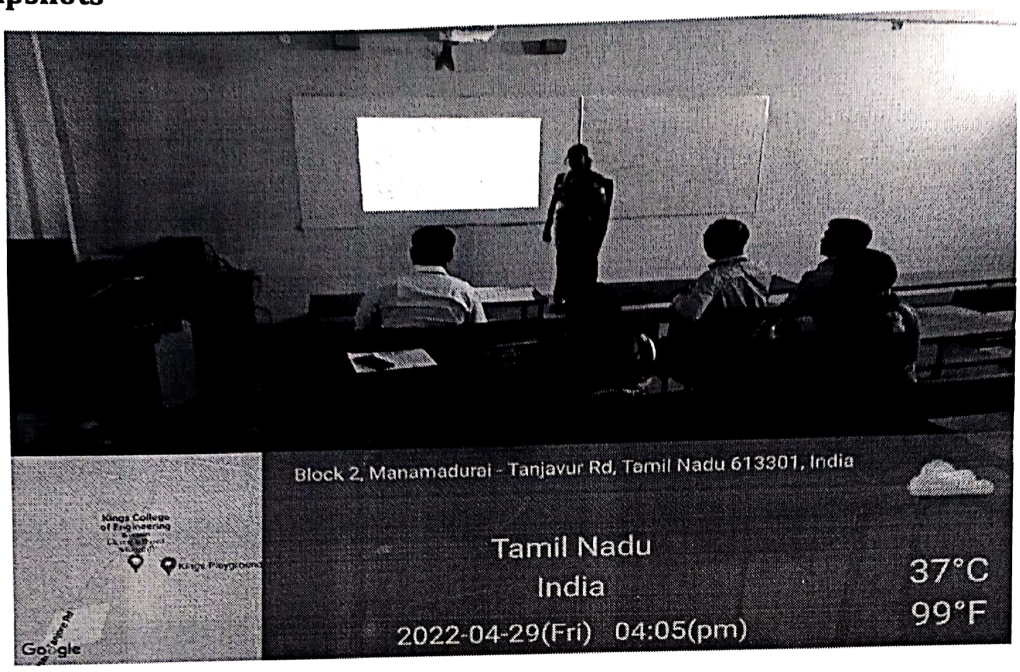
The use of flying IoT in healthcare would revolutionize the world. Aerial IoT can be used to keep track of athletes' fitness when they are competing. However, in the near future, drones will be used not only for public protection and disaster relief operations but also for many other civilian, commercial and governmental services. Some good examples are surveillance and reconnaissance, public safety, homeland security , forest fire monitoring , environmental monitoring , security and border surveillance , farming , or even Internet delivery , architecture surveillance , goods transportations such as Amazon Prime Air designed to safely deliver packages to customers within 30 minutes using small drones. With their countless applications, UAVs will soon be influentially a part of our daily life; a necessary technology similar to today's smart phones. Moreover, there are unique services that can be provided only from height (i.e., the sky). Drones are, therefore, highly useful for high-risk life-threatening operations such as flying over a volcano to inspect its activity level or above a radiation-contaminated region.

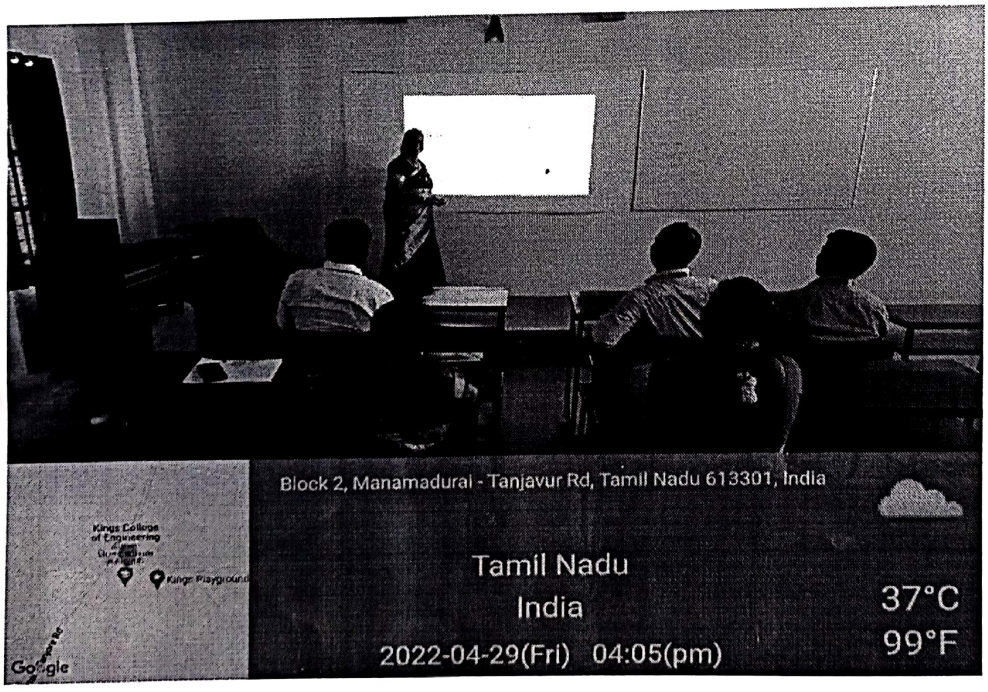
Flying over a location, drones can send real-time information about road traffic that can be compiled into a central server and used by pedestrians and vehicle drivers to decide on their routes. As another application, drones can be similarly used in meteorology. Instead of using dedicated drones to collect the data about the weather of a particular city, any drone flying above the city can collect the desired information; e.g., temperature, wind speed, and humidity; and send it to a central server. Based on this "drone-sensing" approach, accurate weather prediction can be made, above all with less efforts and highly reduced costs. Drones can also be used as rescue providers. Indeed, in case a person falls down on the street, any drone flying above that region could take a photo/video of the incident and send it to a central surveillance center. Until the arrival of a professional rescue team, an "ambulance" drone carrying a suitable medical kit can reach the location and suitable passersby may be selected and prompted to use the kit to provide first aid.

Outcomes:

- Enhance the knowledge on Internet of Flying Things
- Provides an opportunity to know the various applications of flying objects using IoT

Snapshots





Faculty In Charge **HoD/EEE** 01/5/22 **Principal** 01.5.2022

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Internal Faculty Seminar – Attendance and Feedback

Date: 29.04.2022
Title: Internet of Flying Things
Resource Person: Dr.M.Meenalochani

S.No.	Name of the Faculty	Signature	Feedback
1	Dr.A.Albert Martin Ruban		Good
2	Mr.R.Sundaramoorthi		Session was Informative.
3	Mr.J.Arokiaraj		Very useful
4	Mr.S.R.Karthikeyan		Got new exposure
5	Dr.P.Narasimman		Informative
6	Mrs.P.Thirumagal		Nice presentation
7	Dr.R.Arulraj		Informative
8	Ms.C.Senthamilarasi		Good.

01/5/22
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR 2021-22 / EVEN SEMESTER

Date: 06.05.2022

INTERNAL FACULTY SEMINAR REPORT

Objective:

- To impart knowledge to faculty on recent developments and technological advancements in the field of Electrical and Electronics Engineering.
- To improve the IEEE journal access by faculty through which they can update their knowledge on recent topics

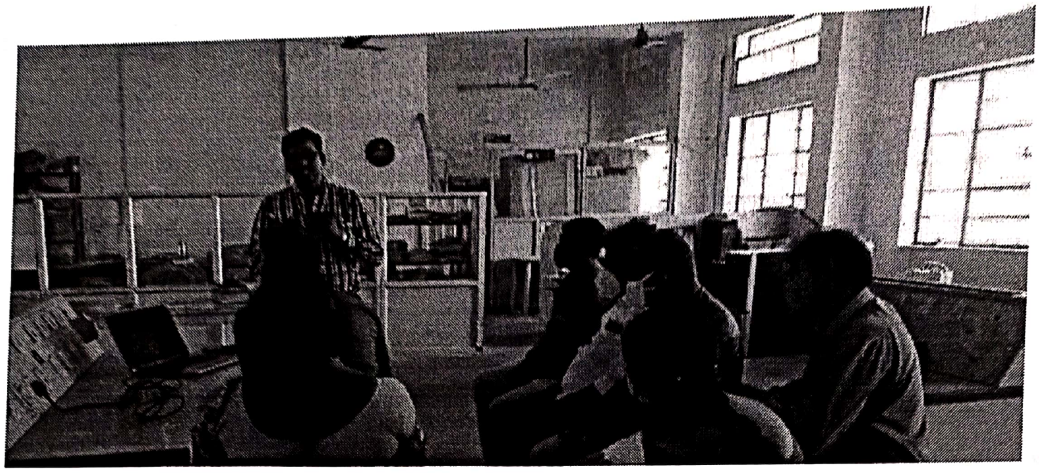
Title: A Review on Reduced Switch Count Multilevel Inverter Topologies

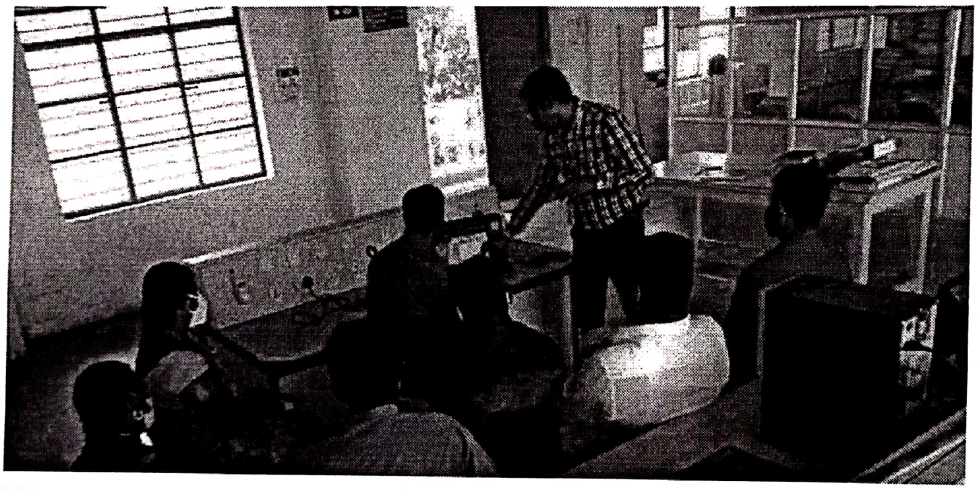
IEEE Journal: IEEE Access, open access journal, Volume 8, 2020

Internal seminar for faculty of Electrical and Electronics Engineering department was conducted on 06.05.2022 from 3.00 P.M to 4.00 P.M in Power Electronics Lab. Dr.P.Narasimman, AP/EEE lectured on the topic "Evolution of Multilevel Inverters". He explained inverter, the need for multilevel inverter, operation of multilevel inverter and its types. He provided a detailed presentation on some of the newly proposed multilevel inverter topologies which focus on reducing the power semiconductor device count, gate drivers and isolated DC sources. He discussed on the methods of reducing harmonic distortion in multilevel inverter for improving its efficiency. Also, he simulated the different levels in multilevel inverters.

Outcomes:

- Enhance the knowledge on multilevel inverters
- Provides an opportunity to know the simulation on different levels of multilevel inverters





DRC Member/EEE

HoD/EEE

Principal

Evolution of Multilevel Inverters 1

Presented By,
Dr.P.Narsimman, AP/EEE
Kings College of Engineering

OVERVIEW 2

- Introduction
- Development race for high power applications
- High power converters classification
- Comparison of multilevel converter topologies
- Multilevel converter -driven applications overview
- Equivalent circuit and state-space modeling
- Multilevel inverter modulation classification
- MATLAB® /Simulink Simulation

3 INTRODUCTION

Inverter :

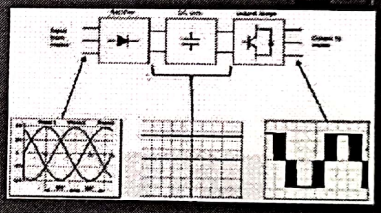
- The inverter is an electrical device which converts direct current (DC) to alternate current (AC)

Multilevel Inverter:

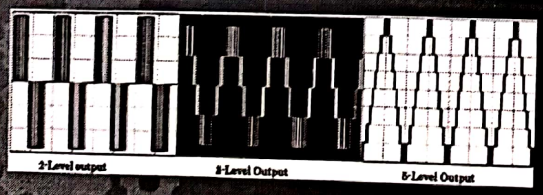
- The multi-level inverter is to synthesize a near sinusoidal voltage from several levels of dc voltages
- The Multi level inverter is like an inverter and it is used for industrial applications as alternative in high power and medium voltage situations.
- It has been introduced in 1975 as alternative in high power and medium voltage situations by NABLE ELAL

4

- The input voltage, output voltage and frequency, and overall power handling depend on the design of the specific device or circuitry. The inverter does not produce any power; the power is provided by the DC source.



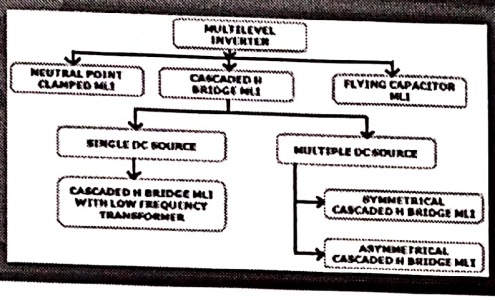
5 CONCEPT OF MULTI-LEVEL INVERTER



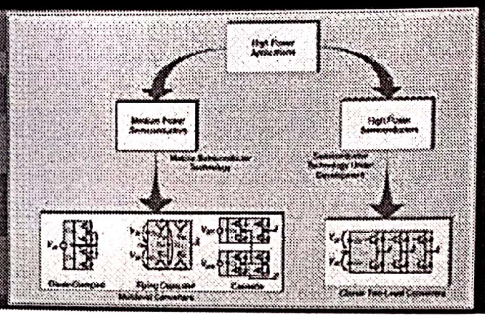
6 ADVANTAGES:

- Reduced harmonic distortion: Multilevel converters not only can generate the output voltages with very low distortion, but also can reduce the dv/dt stresses; therefore electromagnetic compatibility (EMC) problems can be reduced.
- Common-mode (CM) voltage: Multilevel converters produce smaller CM voltage; therefore, the stress in the bearings of a motor connected to a multilevel motor drive can be reduced.
- Input current: Multilevel converters can draw input current with low distortion.
- Switching frequency: Multilevel converters can operate at both fundamental switching frequency and high switching frequency PWM. It should be noted that lower switching frequency usually means lower switching loss and higher efficiency.

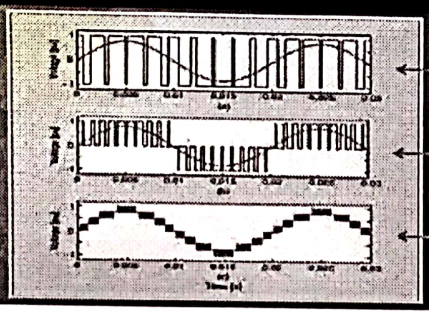
7 MULTI LEVEL INVERTER TOPOLOGIES



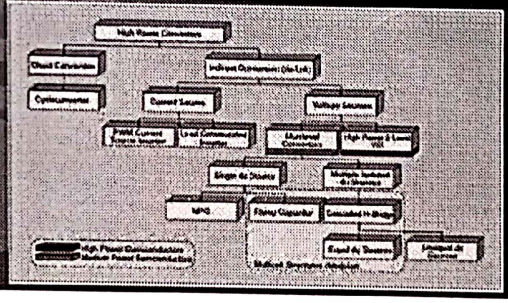
DEVELOPMENT RACE FOR HIGH POWER APPLICATIONS 8



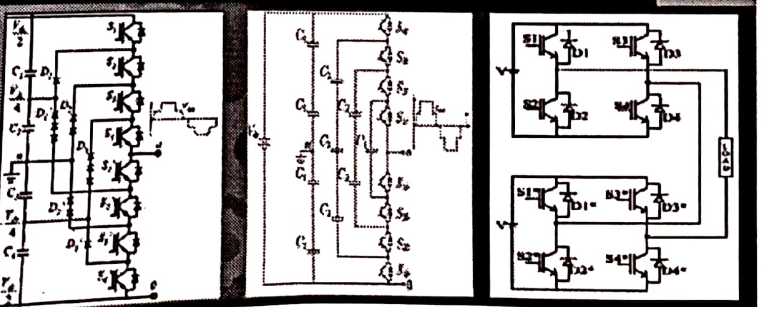
COMPARISON OF OUTPUT PHASE VOLTAGE WAVEFORMS 9



HIGH POWER CONVERTERS CLASSIFICATION 10



Different Circuit Configuration of 5-Level MLI 11



COMPARISON OF MULTILEVEL CONVERTER TOPOLOGIES 12

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

ACADEMIC YEAR 2021-22 Even

Internal IEEE Seminar – Report

Title of the Webinar	: "Electrical Engineering Design with the Subconscious Mind"
IEEE Paper Details	: IEEE Transactions on Industrial Electronics, Vol. 55, No. 6, June 2018
Date	: 13.05.2022
Resource Person	: Mrs. P. Thirumagal, AP/EEE, KCE
Beneficiaries	: EEE Faculty Members- 7

On behalf of Department of EEE, IEEE Branch has organized Internal Seminar on "Electrical Engineering Design with the Subconscious Mind" for faculty members, Department of EEE on 13.05.2022. The main objective of the internal seminar is to provide the creative energy of the subconscious mind, to perform useful work while meditating, daydreaming, lucid dreaming, and the like. One of our ultimate goals is "jobbing on the sleep", an inverse or reciprocal to "sleeping on the job".

The following points were discussed in the seminar:

The influence of users' subconscious behavior on interaction design:

- Traits of Subconscious Behavior The term "subconscious" was first raised by Sigmund Freud in 1893, who believed that it is between conscious and unconscious. Thus subconscious behavior is described as an acting or response in a subconscious state. Joseph Murphy points out in his book "The power of your subconscious mind" that sub consciousness has enormous power and subconscious behavior is, usually, highly effective. And Brian Tracy also says our subconscious mind is 30,000 times more powerful than our conscious mind.

- Generally speaking, subconscious behavior happens with emotional information. Emotion exerts a huge influence on our subconsciousness, for subconscious mind is most likely to absorb emotional information. Subconscious mind is generally with weak memories and needs strong and repeating stimulations.

Subconscious Behavior in User Experience:

- When users interact with so many products and service in the real world, those designs that harness subconscious behavior make great achievements. One of the best examples is "a fly in urinal". It is reported that all the urinals in Amsterdam's Schiphol Airport have a vivid image of a fly. It turns out that men, due to their urinal behavior, cannot resist peeing on things, especially if they look as though they might wash away.
- In essence, the designer utilized human beings' subconscious acting to achieve the final goal.

The application of users' subconscious behavior in human-computer interaction design :

- We've seen the power and effectiveness of subconscious behavior in daily life. For human-computer interaction, it's not difficult to imagine that its capacity will be unlimited! Some interaction design harness users' sub consciousness in a very smart way, which not only helps users operate them in the way they were intended but also let users follow their hearts.

Helping Bring about Users' Subconscious Behavior Based on Repeated Image Stimulation:

- In most websites, it is easy for users to find icons of Facebook, Twitter, Instagram and LinkedIn placed on the side of a page. If users like the webpage's content or they want to share what they're looking at to the famous social network websites, clicking the icons can achieve the goals.
- The strategy is effective. Almost everyone who surfs on the Internet a lot knows how to deal with the icons when they browse a website. When they want to share, they will subconsciously look for the icons to get share links, which not only saves the behavioral costs but also increases the user stickiness.

Taking Advantage of Users' Habitual Behavior under Subconscious Minds:

- In addition to the basic information such as user name and email address, websites also want to get more useful information in the same way like user preferences that is used to improve user experience and interaction design based on this kind of users' behavior.
- When users open the Google search engine, they will be attracted by the doodle which sometimes is in the form of game, or music or animation. It owns good interaction with users. They feel relaxed and enjoy the game, the sound or the motion design.

Conclusion

Excellent interaction design is always human-orientated. The full-considering design for people's feeling and behavior can make the jobs on the interface done easily. Especially, the good use of users' subconscious behavior can enhance users' loyalty to the product and improves users' experience. The reasonable human computer interaction aims for the liberation of human nature. It is needs of human beings that result in the development of computer technology.

Snapshots from Seminar:

13/5/2022
Faculty In-Charge

13/5/22
HoD/EEE

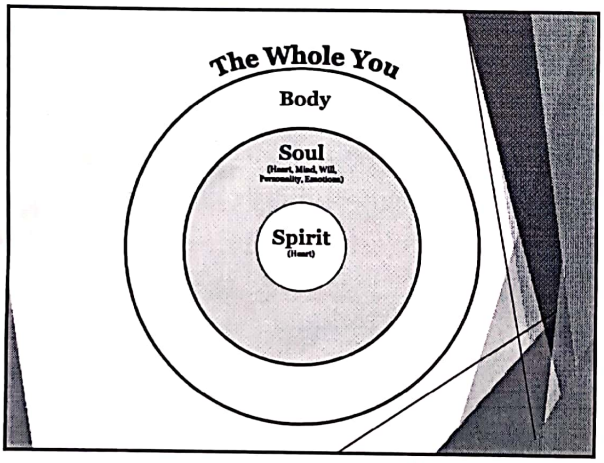
13/5/20
Principal

ELECTRICAL DESIGN WITH THE SUBCONSCIOUS MIND

Creating attainable goals

You can attain most any goal you set when you plan your steps wisely and establish a time frame that allows you to carry out those steps.

Goals that may have seemed far away and out of reach eventually move closer and become attainable, not because your goals shrink, but because you grow and expand to match them.



Power of Your Thoughts

- Most people have 12,000 to 15,000 thoughts per day
- A deep thinker my have as much as 50,000 thoughts per day
- 70% of all thoughts by most people are negative

The Power of the Mind

- Training of Olympic Athletes
  - Soviet Athletes versus U.S. Athletes
- Improving Human Actions (behavior) and Outcomes (destiny) Depends on Harnessing the Power of Your Mind

What Are Beliefs?

- A Conviction, Confidence, Trust or Faith in Something without Rigorous Proof
- Beliefs Are "Truths" You Accept
  - Relative Truths
  - Absolute Truths

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

ACADEMIC YEAR 2021-22 EVEN

Internal IEEE Seminar – Report

Title of the Webinar	: "Hybrid WIPSO-GSA Algorithm Based Optimal DG and Capacitor Planning Considering Different Load Types and Load Levels"
IEEE Paper Details	: IEEE Congress on Evolutionary Computation (CEC), Page(s): 1-8, Year: 2018
Date	: 20.05.2022
Resource Person	: Dr. R. Arulraj, AP/EEE, KCE
Beneficiaries	: EEE Faculty Members- 7

On behalf of Department of EEE, IEEE Branch has organized Internal Seminar on "Hybrid WIPSO-GSA Algorithm Based Optimal DG and Capacitor Planning Considering Different Load Types and Load Levels" for faculty members, Department of EEE on 20.05.2022. The main objective of the internal seminar is to provide exposure to various research areas in power system planning using evolutionary algorithms to our faculty members.

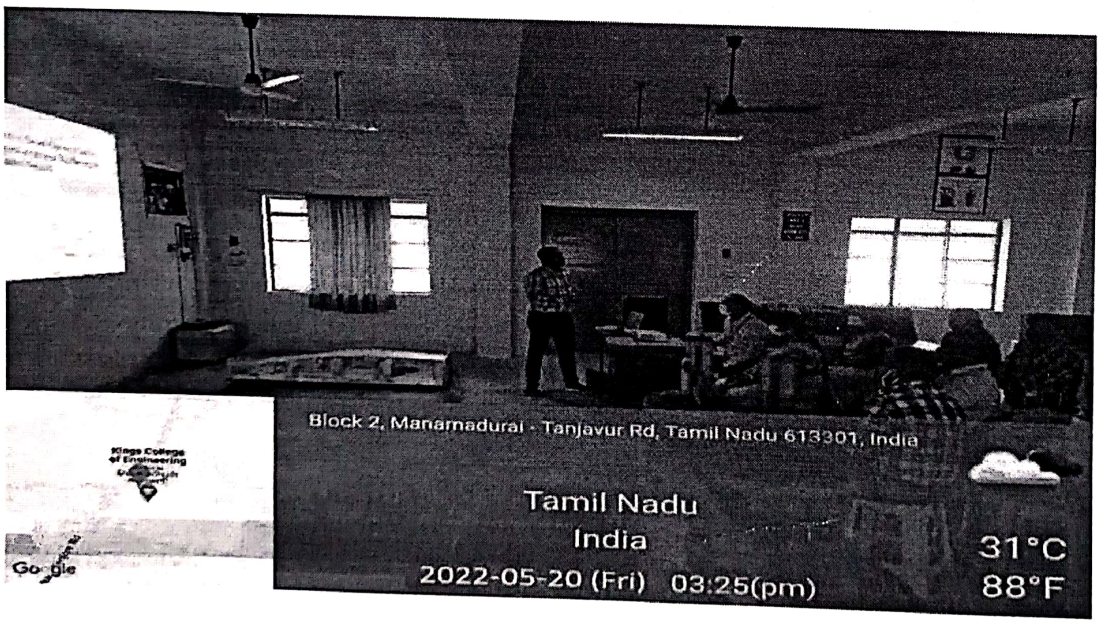
During the session the resource person discussed the importance of evolutionary algorithm in the field of Power System Engineering. He explained the importance of Hybrid WIPSO (Weight Improved Particle Swarm Optimization) – GSA (Gravitational Search Algorithm) algorithm which is a hybrid version of WIPSO algorithm and GSA, In Hybrid WIPSO-GSA Algorithm, the hybridization is done by merging the skill of social thinking in WIPSO with the skill of local search capability in GSA, so that fine balance between exploration and exploitation abilities is achieved. He pointed out the drawbacks and weakness in other optimization algorithms and how it is eliminated in the Hybrid WIPSO-GSA Algorithm while solving large scale optimization problems.

In order to provide deeper insight on the optimization technique, he explained the application of Hybrid WIPSO-GSA Algorithm in solving optimal Distributed Generation (DG) allocation problem considering different load types and load levels in the distribution network. In the optimal DG planning problem, he provided a detailed explanation on formulation of system total power loss objective function along with

various technical constraints involved in the optimization process. Moreover, he described the enhancement done in exploration and exploitation capabilities of Hybrid WIPSO-GSA Algorithm using necessary equations. Furthermore, he explained the optimal DG planning problem using a neat flowchart in order to analyse the various computational steps involved in the optimization process of Hybrid WIPSO-GSA Algorithm. The simulation results along with convergence curve and computational time is explained to show the effectiveness of the solution technique in DG allocation problem. He also presented a detailed comparison report on the superiority of Hybrid WIPSO-GSA Algorithm over other existing optimization techniques in literature and also over different variants of Particle Swarm Optimization algorithm.

Finally he demonstrated the application of Hybrid WIPSO-GSA Algorithm in solving large scale optimization problems in different Engineering domains. At the end of the session faculties asked questions regarding implementation of Hybrid WIPSO-GSA Algorithm in different areas of Power Engineering and also expressed their willingness to publish research papers using hybrid algorithms in near future.

Snapshots from Seminar:



20/5/22
Faculty In-Charge

20/5/22
HoD/EEE

Principal

Hybrid WIPSO-GSA Algorithm Based Optimal DG and Capacitor Planning Considering Different Load Types and Load Levels

By
Dr. R. Arulraj
Department of EEE
Kings College of Engineering
Punalkulam

Outline

- Hybrid WIPSO-GSA algorithm
- Separate and simultaneous planning of distributed generation (DG) and capacitor
- Minimization of total active power loss (P'_{loss} pu)
- Constant power load modeling
- Voltage dependent realistic mixed customer load modeling
- Different load levels
- Economic factors
- Superiority

Introduction

- The increase in electric power demand possesses major challenges for power utilities.
- The increase in system power demand will create the need for expanding existing substation and also create adverse impact on system parameters like
  - ✓ enhanced system power losses
  - ✓ reduced bus voltage magnitudes.
- The allocation of compensation devices nearer to load in the distribution side will
  - ✓ reduce system power losses
  - ✓ enhance bus voltage magnitude

  of distribution system.
- The allocation of compensation devices in the distribution system should be optimally planned so as to achieve improved technical benefits.
- Earlier compensation devices such as capacitor and DG were optimally planned using analytical techniques in distribution system.

Introduction

- However, analytical techniques have computational difficulties and it can be overcome by employing suitable artificial intelligent techniques.
- Several artificial intelligent techniques were employed to determine optimal planning of DG and capacitor in the distribution network
  - ✓ Particle Swarm Optimization (PSO)
  - ✓ Teaching Learning Based Optimization (TLBO)
  - ✓ Genetic Algorithm (GA)
  - ✓ Bacterial Foraging Optimization Algorithm (BFOA)
  - ✓ Intelligent Water Drop Algorithm (IWDA)
  - ✓ Quasi-Oppositional TLBO (QOTLBO)
  - ✓ Obest-Guided Artificial Bee Colony (GABC) algorithm
  - ✓ Hybrid Combination of Loss Sensitivity Factor and Simulated Annealing (LSF-SA)
- In order to achieve global optimum, the ultimate aim of any heuristic optimization technique is to find the fine balance between the ability of exploration and exploitation.
- According to (Eiben et al., 1998), the strengthening of either one ability will weaken the other and vice-versa.

Introduction

- Thus, the previously mentioned features make the existing heuristic optimization techniques capable of solving only finite set of problems.
- Merging the strength of optimization techniques is one of the best possible ways to find fine balance between overall exploration and exploitation abilities.
- Therefore, in order to maintain good balance between exploration and exploitation abilities, the authors are motivated to hybrid WIPSO and GSA to determine optimal scenario as well as simultaneous planning of DG and capacitor in the distribution network.
- Here, the hybridization is done by merging the skill of social thinking in WIPSO with the skill of local search capability in GSA, so that fine balance between exploration and exploitation abilities is achieved.
- In this study, the optimization problem is solved by minimizing P'_{loss} pu objective function subjected to necessary technical constraints.

Introduction

- Also, the optimal DG and capacitor planning problem is studied from local distribution company's viewpoint considering constant power load modeling as well as voltage dependent realistic mixed customer load modeling at different time varying load levels.
- Moreover, the total economic benefit due to optimal DG and capacitor installation are validated while considering essential economic factors such as
  - ✓ interest rate
  - ✓ inflation rate
  - ✓ reduction in cost of energy purchased from the substation including energy loss
  - ✓ various cost terms/charges associated with DG and capacitor in distribution network

  for the total planning period.
- Furthermore, the superiority of the proposed hybrid algorithm is also illustrated by comparing the results with other optimization techniques.

DEPARTMENT OF MECHANICAL ENGINEERING

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Number of professional development /administrative training programs organized by the institution for teaching and non teaching staff

ACADEMIC YEAR 2021-22

Dates (from to) (DD-MM-YYYY)	Title of the professional development program organized for teaching staff	No. of participants
03.09.2021	Seminar on "Engine Auxiliaries in recent days"	15
30.11.2021	Seminar on "Students satisfaction survey and its importance"	15

HOD/MECH
Dr.T.PUSHPARAJ, M.E., Ph.D.,
Prof. & Head-Mechanical Engineering,
Kings College of Engineering,
Punalkulam-613 303.

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Department of Mechanical Engineering
Academic year 2021-22

Circular

01.09.2021

This is to inform you that there will be an internal seminar going to be conducted by our Department on 03.09.21 at 01.00 p.m on the topic "Engine Auxiliaries in recent days" by Dr.T.Pushparaj, Prof/Mechanical at Department Smart Classroom. Staff members are instructed to utilize the session and communicate your queries.

HOD/MECH
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Prof. & Head-Mechanical Engineering,
Kings College of Engineering,
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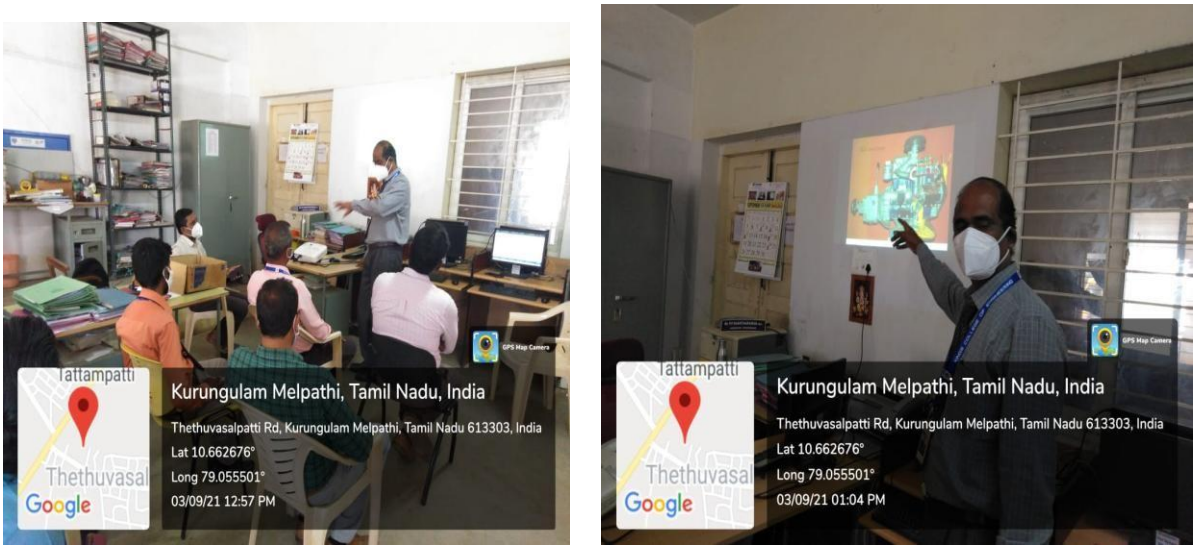
Department of Mechanical Engineering
Academic year 2021-22 (ODD)
Internal staff seminar Report

Date & time : 3.9.2021 & 01.00 pm
Venue : Room no.203



Snapshots from the session

Seminar on "Engine Auxiliaries in recent days" has been delivered by Dr.T.Pushparaj, Professor, Department of Mechanical Engineering for the staff members of Mechanical Engineering on 03/09/2021 at 1.00 p.m. Here few points are discussed:

Marine auxiliary engines are manufactured keeping in mind the rigorous environment they will be installed and operated in, along with maintaining the continuity of operation to provide uninterrupted power supply to various ship systems. The most important thing for running the machinery system in its best capabilities is to know the correct operating procedure for the same and to bring the machinery back in operation following correct sequence and troubleshooting procedure if it is stopped due to unavoidable circumstances. The ship's engineer in-charge must familiarize with the

operating manual of the auxiliary engine, the correct operating parameters and scheduledplanned maintenance.

Chapters discussed:

- Basic Operations of Marine Auxiliary Engine.
- Important Procedures.
- Important Safety Inclusions.
- Important Assessment of Auxiliary Engine.
- Maintenance Tips for Marine Generator.

Outcomes:

Upon listing of this seminar the participants can able to

- Understand the auxiliaries of a marine engine.
- Understand operation procedures.
- Know about maintenance procedures

References:

- **https://link.springer.com/chapter/10.1007/978-3-658-12918-7_6**
- **https://www.sae.org/publications/technical-papers/content/820085/**
- **https://ieeexplore.ieee.org/abstract/document/9248280/**

Internal staff seminar feedback summary

S.no	Description	Good	Fair	Poor
1	Content of the speech	**10**	**2**	**-**
2	Voice of the speaker	**9**	**3**	**-**
3	Overall feedback	**8**	**4**	**-**

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Department of Mechanical Engineering
Academic year 2021-22

Circular

26.11.2021

This is to inform you that there will be an internal seminar going to be conducted by our Department on 30.11.21 at 01.00 p.m on the topic "Students satisfaction survey and its importance" by M.Aswin, AP/Mechanical at Department Smart Classroom. Staff members are instructed to utilize the session and communicate your queries.

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Department of Mechanical Engineering Academic year 2021-22 (ODD) Internal staff seminar Report

Date & time : 30.11.2021 & 01.00 pm
Venue : Room no.203

Snapshots from the session

Seminar on "Students satisfaction survey and its importance" delivered by M.Aswin, AP/Department of Mechanical Engineering for the staff members of Mechanical Engineering on 30/11/2021 at 1.00 p.m. Here few points are discussed:

NAAC (National Assessment and accreditation council) is conducting a Student Satisfaction Survey regarding Teaching – Learning and Evaluation, which will help to upgrade the quality in higher education. A student will have to respond to all the questions given in the following format with her/his sincere effort and thought. Her/his identity will not be revealed.

Instructions to fill the questionnaire:

- All questions should be compulsorily attempted.
- Each question has five responses, choose the most appropriate one.
- The response to the qualitative question no. 21 is student's opportunity to give suggestions or improvements; she/he can also mention weaknesses of the institute here. (Kindly restrict your response to teaching learning process only)

Outcomes:

Upon listing of this seminar the participants can able to

- Understand the procedures of student satisfaction survey.
- Understand operation procedures.
- Instruct among the students.

Internal staff seminar feedback summary

S.no	Description	Good	Fair	Poor
1	Content of the speech	**10**	**2**	**-**
2	Voice of the speaker	**9**	**3**	**-**
3	Overall feedback	**8**	**4**	**-**

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A NAAC Accredited Institution
KINGS
COLLEGE OF ENGINEERING
Recognized under 2(f) & 12(B) of UGC
Approved by AICTE, New Delhi
Affiliated to Anna University, Chennai

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INTERNAL QUALITY ASSURSANCE CELL
ACADEMIC YEAR 21-22 ODD SEM
TWO DAY FDP ON "INTEGRATING PCE SKILLS INTO CLASSROOM TEACHING"

FDP Flyer

With the objective to promote Learner-centered Teaching-Learning methodoliges that are interactive & engage the students and develop their abilities, Internal Quality Assurance Cell organized **2 day Faculty Development Programme on " Integrating PCE (Professional and Career Enhancement) activity in Classroom teaching on 16.02.2022 & 17.02.2022.** FDP aimed at transforming educational approaches to help students develop skills such as decision making and problem solving, team work, and presentation skills that are relevant to the industrial needs.

On Day1 of FDP, CIVIL, CSE & ECE department faculty members participated and on **Day2 Civil, EEE, Mechanical department faculty members participated.** FDP was designed with interactive activities and demonstration on various ICT tools.

FDP was **inagurated by Dr.J.Arputha Vijay Selvi, Principal. Dr.S.Sivakumar, Vice-Principal gave special address on the ocassion. IQAC coordinator Ms.K.Abhirami welcomed the gathering**.

FDP Session covered the following

- **Interactive classroom approaches**
- **Virtual Lab sessions**
- **ICT tools in TL process**
- **Creative learning approaches**
- **ICT based resource sharing approaches**

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Tools demonstrated during the session includes Kahoot, Quizalize software, JCross, Edmodo, Mentimeter. Various approaches to integrate PCE activities into classroom session was demonstrated involving participants.

Faculty members were grouped into teams and various team based activities were encouraged to demonstrate interactive teaching-learning practices. All team members were motivated and participated to gain score for their teams. Best performing teams, Best Performer and Individual titles were appreciated and honored during the Valedictory session on day 2. Ms.R.Senthamizharasi, AP/EEE and Mrs.S.Puvaneswari, AP/CSE bagged "Best Performer Award" during the FDP.

FDP MOMENTS

DATE: 16.2.22 (DAY 1)

VENUE: PALLAVA HALL

Inaugural Session

Dr.S.SIVAKUMAR-Vice Principal, Dr.J.ARPUTHA VIJAYA SELVI- Principal and IQAC Coordinator Mrs.K.ABHIRAMI on the Dias

View of Participants

IQAC Cordinator Mrs.K.ABHIRAMI welcomed the gathering

FDP Inaugural Address by
Dr.J.ARPUTHA VIJAYA SELVI, PRINCIPAL-KCE

Special Address by
Dr.S.SIVAKUMAR, VICE PRINCIPAL-KCE

Valedictory session

Feedback session

FDP PARTICIPANTS

Best Leader Awardees

Best Performers

Best Team - Runner

Best Team – Winner

Organizers of FDP - IQAC Team

11/3/2022
IQAC COORDINATOR

11/3/2022.
PRINCIPAL

KINGS
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INTERNAL QUALITY ASSURANCE CELL

REPORT ON FACULTY DEVELOPMENT PROGRAMME

Internal Quality Assurance Cell & IEEE STB of Kings College of Engineering organized Faculty Development Programme on **"Moodle Learning Management System"** in **Association with IIT Bombay** sponsored by MHRD enhancing FOSS skills of our faculty members was organized on **26.02.2022.** Total of 74 faculty members participated in the FDP and got benefitted.

Session Snapshot

Objective of Chosen Workshop

Moodle is a learning platform designed to provide educators, administrators and learners with a **single robust, secure and integrated system** to create personalised learning environments. Moodle delivers a powerful set of learner-centric tools and collaborative learning environments that empower both teaching and learning.

Department-wise Participation Details

Department	Participation count
CIVIL	09
CSE	13
ECE	15
EEE	09
MECH	10
S&H	14
T&P	04
TOTAL	74

K. Radhika 11/3/2022
IQAC COORDINATOR

J. Mouli 11/3/2022.
PRINCIPAL

ACADEMIC YEAR 2021-22 (EVEN SEMESTER)

12.02.22

Report on "Preparatory Workshop and Mock Audit for NBA"

Workshop Flyer

Kings College of Engineering, Punalkulam organized a "**Preparatory Workshop and Mock Audit for NBA**" under the **aegis of AICTE Margadarshan scheme** by **experts from its mentor institute NIT, Trichy on 11.2.2022 through Online mode.** Under **AICTE Margadarshan scheme, NIT, Trichy being Mentor of Kings College of Engineering since 2018**, guides in expertise sharing and towards raising quality aspects in academics. **Dr.Mini Shaji Thomas, Director, NIT Trichy** accelerated the team towards meeting the objective of Margadarshan, **Dr.N.Sivakumaran, Professor and Chief Coordinator**, Department of ICE, NIT, Trichy and **Dr.G.Saravana Illango, Associate Professor and Co-coordinator**, Department of EEE coordinated various FDPs, Review sessions, Interactions, Internships etc.

For the Preparatory workshop and Mock Audit for NBA, departments were grouped into three. 2 Member Expert addressed each group.

EXPERT TEAM DETAILS

CSE & S&H

Dr.M.Venkatakirthiga,Associate Professor,Dept. of EEE

Dr.M.Brindha,Assistant Professor,Dept. of CSE

ECE & EEE

Dr.G.Lakshmi Narayanan,Professor, Dept. of ECE

Dr.R.K.Kavitha,Assistant Professor, Dept. of ECE

Mech & CIVIL

Dr.T.Ramesh,Associate Professor,Dept. of Mechanical Engineering

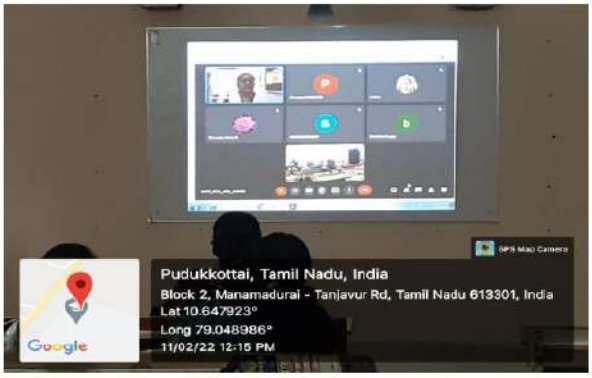
Dr.N.Siva Shanmugam,Associate Professor,Dept. of Mechanical Engineering

During the workshop, experts highlighted on NBA criterionwise strengthening aspects. Meeting the criterion parameters, filewise suggestions were also made Programmewise by the expert team.

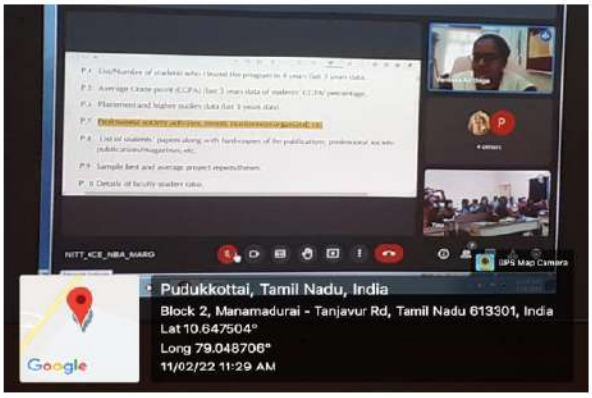
Dr.R.Rajendran, Secretary presided over the programme, Dr.J.Arputha Vijaya Selvi, Principal offered felicitations. Dr.S.Sivakumar Vice-Principal, HODs and faculty members participated in the programme. Department HoDs, IQAC Coordinator, IQAC member of the department and staff members attended the workshop and audit session.

SESSION SNAPSHOTS – GROUP 1

VIEW OF PARTICIPANTS – GROUP -1

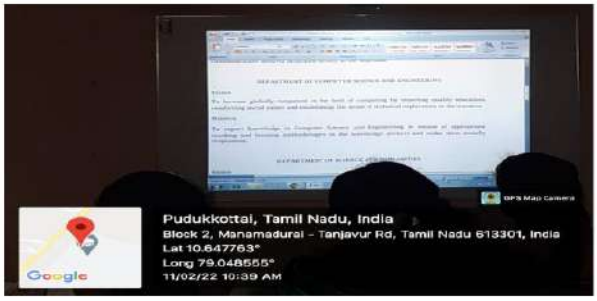


INTERACTION BY EXPERTS



SESSION ON NBA FILES CRITERIONWISE

PARTICIPANT INTERACTION



REVIEW BY EXPERT

INTERACTION BY EXPERTS

SESSION SNAPSHOTS – GROUP 2

REVIEW BY EXPERTS

VIEW OF PARTICIPANTS

INTERACTION BY EXPERTS

SESSION SNAPSHOTS – GROUP 3

VIEW OF PARTICIPANTS

INTERACTION BY EXPERT

REVIEW BY EXPERT

VIEW OF PARTICIPANTS

OUTCOME OF THE WORKSHOP AND AUDIT

- Discussion on Criterion-wise strengthening aspects to meet NBA accreditation leading to improvement in respective academic process
- Review on files, suggestions resulting in increased quality aspects
- Raise in confidence level among participants through the review by experts
- Future planning on academic process incorporating suggestions made by the experts

11/3/2022
IQAC COORDINATOR

11/3/2022.
PRINCIPAL