

# SKCT

# DIGEST

03 - 07 JANUARY 2022

**SPECIAL ISSUE - 84**

**SPECIAL  
EDITION**

## **EDITOR - IN - CHIEF**

*Dr V Sreevidya,  
Principal In-Charge*

## **EDITORIAL TEAM**

*Ms S Soundarya, CSE  
Ms S Thenmozhi, ECE  
Ms B Pavithra, SSH*

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INNOVATION COUNCIL (IIC)**

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# SKCT INSTITUTION'S INNOVATION COUNCIL (IIC)



**INSTITUTION'S  
INNOVATION  
COUNCIL**

**(Ministry of Education Initiative)**



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## SKCT – INSTITUTION'S INNOVATION COUNCIL (IIC) | MENTOR-MENTEE ORIENTATION CUM MENTORING SESSION

**SRI KRISHNA COLLEGE OF TECHNOLOGY**  
AN AUTONOMOUS INSTITUTION  
AFFILIATED TO ANNA UNIVERSITY-CHENNAI  
KOVAIPUDUR, COIMBATORE-641042.

**INSTITUTION'S INNOVATION COUNCIL**

*Invites you all for the*  
**Orientation cum Mentoring  
Session**  
for  
**Mentee Institutions**

 <https://meet.google.com/jih-syb-k-ern>

 05-01-2022  2.30 p.m

**IIC President**  
**Dr.V Sreevidya**

**Vice-President**  
**Dr.K.Lakshmi**

**Convenor**  
**Dr.R.Nithiavathy**

The Ministry of Education's Innovation Cell has selected Sri Krishna College of Technology, Coimbatore as one of the "**Mentor Institute.**" SKCT fosters the culture of innovation for Arunai Engineering College, Tiruvannamalai, Sengunthar College of Engineering, Namakkal, Tagore Institute of Engineering and Technology, Salem and Ahalia School of Engineering and Technology, Kerala under the Mentor-Mentee Programme.

## SKCT – INSTITUTION'S INNOVATION COUNCIL (IIC) | MENTOR-MENTEE ORIENTATION CUM MENTORING SESSION



**Mentor Institution:** Sri Krishna College of Technology, Coimbatore.

**Welcomes & Support**



**Mentee Institutions:**

1. Arunai Engineering College, Tiruvannamalai.
2. Sengunthar College of Engineering, Namakkal.
3. Tagore Institute of Engineering and Technology, Salem.
4. Ahalia School of Engineering & Technology, Kerala.

The “**Mentor-Mentee Orientation cum Mentoring Session**” was organised for the above mentioned 4 Mentee Institutions, facilitated by Dr V Sreevidya, Principal In-charge and IIC President, Dr K Lakshmi, Vice-President (IIC), Professor and Head, Dept. of EEE and Key Functionaries of IIC on 05 January 2022.

# SKCT – INSTITUTION’S INNOVATION COUNCIL (IIC) | MENTOR-MENTEE ORIENTATION CUM MENTORING SESSION

The screenshot shows a Google Meet session. The main window displays a presentation slide with the following content:

- SKCT - IIC / MIC INITIATIVES PARTICIPATION**
- Central circle: **IIC / MIC PARTICIPATION**
- Surrounding initiatives:
  - SMART INDIA HACKATHON
  - IMPACT LECTURE & LEADERSHIP SERIES
  - INNOVATION AMBASSADOR
  - HACKATHON
  - NATIONAL INNOVATION CONTEST
  - NISP
  - NATIONAL BOOTCAMP
  - YUKTI KAPILA
- Footer: SKCT - IIC Mentor-Mentee Interaction 8

The 'People' panel on the right lists participants:

- Dr. K. Lakshmi Professor EEE (Meeting host)
- Dr. K. Lakshmi Professor EEE (Presentation)
- Dr. Mahima Ganeshan
- Dr. R. SENTHIL KUMAR As...
- Dr.G.Saravanan
- Dr.Jothish Kumar Mohana...
- Gopika Unni
- Jayanthi Subramaniyam
- Principal AEC 5104
- PRINCIPAL TIET

At the bottom, the system tray shows the time as 2:47 PM, date as 05-01-2022, and weather as 28°C Haze.



# ALUMNI CORNER



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**ECE | ALUMNUS CORNER | BEST CREATIVE GAME  
DESIGNER**

**alumni  
CORNER**

**CONGRATULATIONS!**

Mr Sriprakash S, Alumnus (Batch 2017-2021), Dept. of ECE has been recognised as the **“Best Creative Game Designer”** by Trainee Game Designer, HFG Entertainments Private Limited, Chengalpat on 31 December 2021.



# STUDENTS' PARTICIPATIONS



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## ECE | STUDENT ACHIEVEMENT | SMART AUTOMATION EVENT | SECOND PLACE



**BANNARI AMMAN**  
**INSTITUTE OF TECHNOLOGY**  
An Autonomous Institution Affiliated to Anna University,  
Approved by AICTE, Accredited by NAAC with 'A' Grade



Certificate of Participation

BIT TECHFEST 2021

SMART AUTOMATION

NATIONAL LEVEL VIRTUAL TECHNICAL EVENT



This is to certify that

**KARTHIKEYAN G** of **SRI KRISHNA COLLEGE OF TECHNOLOGY**

has won **Second Place** in the SMART AUTOMATION event, a National Level Virtual Technical event organized by Mobile and Web Application Development Lab, Bannari Amman Institute of Technology on 30<sup>th</sup> December 2021.

Dr.S.Sundara murthy, ASP/IT  
Organizing Secretary



Dr.V Eswaramoorthy, AP-II/IT  
Co-ordinator

Mr Karthikeyan G, Student of Third B.E. ECE A section, secured the **“Second Place in Smart Automation Event”** organised by Bannari Amman Institute of Technology, Sathyamangalam on 30 December 2021.

## ECE | STUDENT ACHIEVEMENT | RENAC'21 | NATIONAL LEVEL PROJECT CONTEST | THIRD PLACE



**Bannari Amman Institute of Technology**

(An Autonomous Institution, Affiliated to Anna University Chennai)

**Sathyamangalam**



*Certificate of merit*

**BIT TECH FEST 2021**

**RENAC'21**



**A NATIONAL LEVEL VIRTUAL PROJECT CONTEST**

This is to certify that **Mr.KARTHIKEYAN G**, of sri krishna college of technology has secured **third place** in a **RENAC'21 - A NATIONAL LEVEL VIRTUAL PROJECT CONTEST** and presented a project entitled Agricultural, horticultural and rural development using transparent solar cells organized by **Renewable Energy and HVAC Laboratory**, Bannari Amman Institute of Technology, Sathyamangalam on 23-12-2021.

**PROF. PRAKASH K B**

Organizer/mech

**PROF.SUNDAR S**

Special Lab incharge

**DR. SIVAKUMAR K**

Dean RDS



scan to verify

*Congratulations!*

Mr Karthikeyan G, Student of Third B.E. ECE A section, secured the **“Third Place in RENAC'21,”** a National level Project Contest organised by Bannari Amman Institute of Technology, Sathyamangalam on 23 December 2021.

**MECH | PLACEMENT | LMW DRIVE**

Mr Abishek Roshan R S and Mr Sri Hari A R, Students of Final B.E. Mechanical Engineering got **“Placement Offer”** in Lakshmi Machine Works limited, Coimbatore on 29 December 2021.

**CIVIL | STUDENTS' ACHIEVEMENTS | SRM SMART e-HACKATHON CHALLENGE**



Mr Logeshwar, Ms Anushya, Mr Sampruth Pirabakar, Ms Jeevitha and Mr Thilakraj, Students of Final B.E. Civil Engineering, secured the Second Place in “**Smart e-Hackathon**” organised by SRM Institute of Science and Technology, Chennai on 23 December 2021.

## S&H | STUDENT ACHIEVEMENT | ESSAY COMPETITION IN CSIR



Ms R Sanchana, Student of First B.Tech. IT B section, participated in “**Essay Competition**” organised by CSIR-Central Leather Research Institute as a part of India International Science Festival 2021.

## ECE & IT | NEO - NERD PROGRAM | NEO EMPLOYABILITY READINESS AND DEVELOPMENT PROGRAM



Neo Employability Readiness  
and Development (NERD) Program

Top 3 Students - Weekly Assessment 13

Rank	Student Name	Program	Score
2 <sup>nd</sup>	Hareni M	B.TECH - IT	39/45
1 <sup>st</sup>	Saranya	BE-ECE	40/45
3 <sup>rd</sup>	Aravinth S	B.E - ECE	38/45

iam  
**neo.ai**

www.iamneo.ai



Ms Saranya M, Student of Third B.E. ECE, Ms Hareni M, Student of Third B.Tech. IT and Mr Aravinth S, Student of Third B.E. ECE, secured Top Three Position in the assessment conducted as a part of “Neo Employability Readiness and Development Program” on 26 December 2021.

**IT & ECE | STUDENTS' ACHIEVEMENTS | NEO PAT |  
WEEKLY ASSESSMENT TEST**

neo PAT

Neo Employability Readiness  
and Development (NERD) Program

Top 3 Students -Weekly Assessment 14



Ms Gowshini Balamurugan, Student of Third B.Tech. IT, Ms M Saranya, Student of Third B.E. ECE C section and Ms Jenifer C, Student of Third B.E. ECE A section, secured the **“Top Three Position”** in the Weekly Assessment Test 14 conducted by NEO PAT.



# FACULTY PARTICIPATIONS



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## SoM | FACULTY ACHIEVEMENT | RESOURCE PERSON | EMPLOYABILITY SKILLS ENHANCEMENT PROGRAMME



Mr Mayilrajan, Asst. Professor, School of Management, served as a Resource Person for a seminar on **“Employability Skills Enhancement”** organised by Sree Narayanaguru Institute of Management Studies, Coimbatore on 21 December 2021.

# ECE | FACULTY ACHIEVEMENT | GUEST LECTURE DELIVERED | VLSI ARCHITECTURES FOR TELECOMMUNICATIONS

**SIDDARTHA INSTITUTE OF SCIENCE AND TECHNOLOGY**  
(AUTONOMOUS)  
(Approved by AICTE, New Delhi & Affiliated to VITVA, Anantapuram)  
(Recognized by UGC for U.G. Work, SET & CEC, Assisted by NMAC with U-Grade)  
Puttur - 525014, Chittoor District, A.P. (India)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Welcomes you all for the

ONE WEEK FACULTY DEVELOPMENT PROGRAM  
on

RESEARCH IDEAS IN  
IMAGE PROCESSING & COMMUNICATIONS

**DAY 3: SESSION 5**

**RESOURCE PERSON**

Dr. M.Thillai Rani  
Associate Professor,  
Department of ECE,  
Sri Krishna College of Technology,  
Coimbatore, Tamil Nadu

**TOPIC: VLSI ARCHITECTURES FOR TELECOMMUNICATIONS**

Date: 29.12.2021, & Time: 02.00 PM to 04.00 PM

Co-Chair: Dr. B. Suresh, IASO-ICT  
Chair: Dr. M. Jayaraman, IASO-Principal  
Chief Guest: Dr. A. Ashish Raju, Chairman

**VLSI ARCHITECTURES FOR TELECOMMUNICATIONS**  
29.12.2021  
Dr. M.Thillai Rani  
Associate Professor/ECE,  
Sri Krishna College of Technology,  
Coimbatore - 641042  
thillairani@skict.edu.in

**Implementation level-Full Custom VLSI based**

- Selection of EDA tool based on application demand
  - Cadence/Tanner/Laker
- Selection of Design methodology
- Development of layouts (LVS/DRC clean)
- Chip mtg.

**Architectural Transformations**

**Loop Retiming**

Data flow graph model of iterative division

Loop constraints

$$L_1: m + u + h = N$$

$$L_2: 2m + a + u + h_2 = N$$

The goal is to drive the design to a desired E-D tradeoff point (e.g. reference point), while minimizing the area

Dr M Thillai Rani, Asst. Professor, Dept. of ECE, delivered a Guest Lecture in an FDP on “VLSI Architectures for Telecommunications” organised by the Dept. of ECE, Siddhartha Institute of Science and Technology, Puttur, Andhra Pradesh on 29 December 2021.

**CSE | PAPER PRESENTATION | INTERNATIONAL  
CONFERENCE ON RECENT TRENDS IN APPLIED  
SCIENCES AND COMPUTING ENGINEERING (RTASCE)  
2021**



Dr N Krishnaraj, Asst. Professor, Dept. of CSE, presented a paper on "Detecting Offensive Languages using En-hanced Artificial Neural Network Ensemble" in an International Conference on Recent Trends in Applied Sciences and Computing Engineering (RTASCE 2021) organised by VIT, Bhopal on 18 December 2021.

## IT | PAPER PRESENTATION | AN EFFICIENT IMAGE TRANSMISSION SYSTEM USING DISCRETE WAVELET TRANSFORM AND 2D HAAR WAVELET TRANSFORM



Ms D Ranjani, Asst. Professor, Dept. of IT, presented a paper on “An Efficient Image Transmission System using Discrete Wavelet Transform and 2D Haar Wavelet Transform” in AICTE sponsored International Conference on Machine Intelligence and Green Computing organised by KIT during 10-11 December 2021.

**ECE | FACULTY ACHIEVEMENT | PROGRAM COMMITTEE MEMBER AND REVIEWER**

**ICCTES 2021**




International Conference on  
Cyber Technologies and Emerging Sciences  
December 17-18, 2021  
<https://www.icctes.in>

**CERTIFICATE OF PARTICIPATION**

Lecture Notes in Networks and Systems  
Scopus

DR. ANJU ASOKAN

participated as a

**Program Committee Member and Reviewer**

in the International Conference on  
Cyber Technologies and Emerging Sciences  
held during December 17-18, 2021 in India.




CONVENER  
Prof. (Dr.) M. C. Lohani

CO-CONVENER  
Dr. Sandeep Kumar Budhani

ORGANIZING SECRETARY  
Dr. Sudhanshu Maurya

Organised by  
School of Computing, Graphic Era Hill University, Bhimtal Campus,  
Uttarakhand, India



**PROGRAM COMMITTEE MEMBER**

Dr Anju Asokan, Asst. Professor, Dept. of ECE, served as a “**Program Committee Member and Reviewer**” in an International Conference on Cyber Technologies and Emerging Sciences during 17-18 December 2021.

# IT | REVIEWER | INTERNATIONAL CONFERENCE ON ADVANCED NETWORK TECHNOLOGIES AND INTELLIGENT COMPUTING | BANARAS HINDU UNIVERSITY



Dr T Rajeshkumar, Assoc. Professor, Dept. of IT, served as a Reviewer for an International Conference on “**Advanced Network Technologies and Intelligent Computing**” organised by the Dept. of Computer Science, Institute of Science, Banaras Hindu University, Varanasi during 17-18 December 2021.

CIVIL | FACULTY ACHIEVEMENT | MENTOR  
CERTIFICATE FOR SRM e-HACKATHON

CERTIFICATE

OF MENTORSHIP

This certificate is proudly presented to

*Mr. T.P.A. Aravind, SKCT*

For Mentoring Winning Team in Smart e - Hackathon on  
Sustainable Rural Development - 2021 (SH-SRD 2021)



*Dr. Shantanu Patil*

Dr. Shantanu Patil  
Associate Director,  
Innovation, Incubation & Entrepreneurship Centre

*Dr. V. Thirunavugan*

Page 1 / 1  
Dr. V. Thirunavugan  
UGA - RCI  
SRMIS

*Prof., Murthy B.S*

Prof., Murthy B.S  
UGA - RCI  
IT Madras

Mr T P A Aravind, Asst. Professor, Dept. of Civil Engineering, received the “Certificate of Mentorship” for mentoring winning team in Smart e-Hackathon on 23 December 2021.



## EEE | ONLINE TRAINING ON ELECTRICAL POWER SYSTEM ANALYSIS USING ETAP (FOR BEGINNERS)



सत्यमेव जयते  
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES  
GOVERNMENT OF INDIA

### MSME-TECHNOLOGY DEVELOPMENT CENTRE (PPDC)

एम०एस०एम०ई० - तकनीकी विकास केन्द्र

Ministry of Micro, Small & Medium Enterprises

सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय

Government of India Organization

भारत सरकार की संस्था

Foundry Nagar, Agra-282 006 (U.P.)

फाउन्ड्री नगर, आगरा-282 006 (उ०प्र०)

प्रमाण पत्र

## Certificate

*This is to certify that*

**DR. G.SOPHIA JASMINE**

*has successfully completed online training*

on

**ELECTRICAL POWER SYSTEM ANALYSIS  
USING ETAP (FOR BEGINNERS)**

*from 27.12.2021 to 29.12.2021*



DATE : December 30, 2021  
PLACE : AGRA

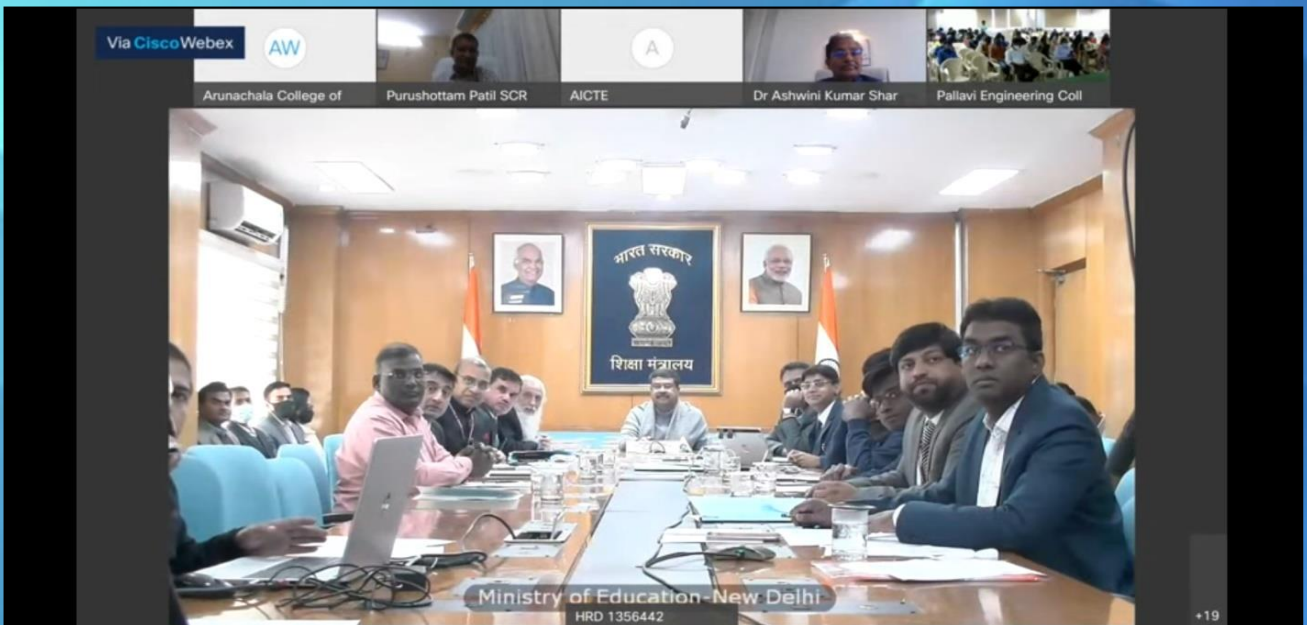
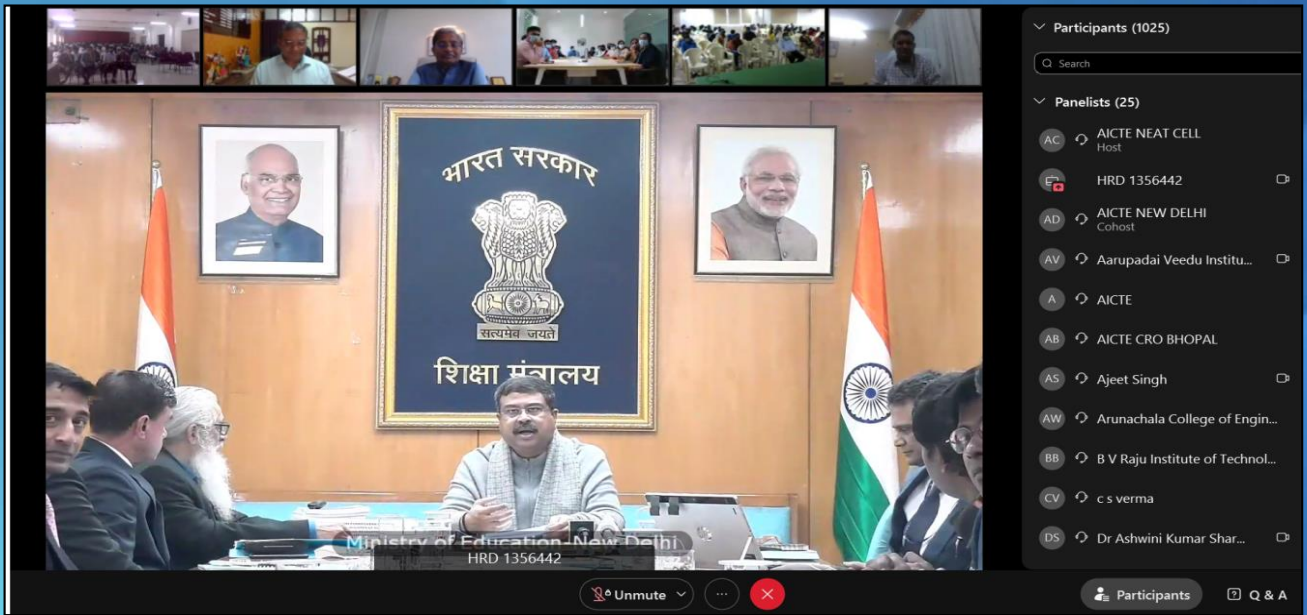


**S.ELANGO**  
PRINCIPAL DIRECTOR I/C

No. PPDC/Trg./OSP/2021-22/21290

Dr G Sophia Jasmine, Assoc. Professor, Dept. of EEE, completed an online training on “**Electrical Power System Analysis Using ETAP (For Beginners)**” offered through MSME-Government of India during 27-29 December 2021.

## MECH | FACULTY PARTICIPATION | AICTE NEAT CELL PROGRAM



The Members of Faculty from the Dept. of Mechanical Engineering attended "AICTE Neat Cell Program" on 03 January 2022.

# RESEARCH



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## EEE | PATENT FILED



Office of the Controller General of Patents, Designs & Trade Marks  
Department of Industrial Policy & Promotion,  
Ministry of Commerce & Industry,  
Government of India

(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

## Application Details

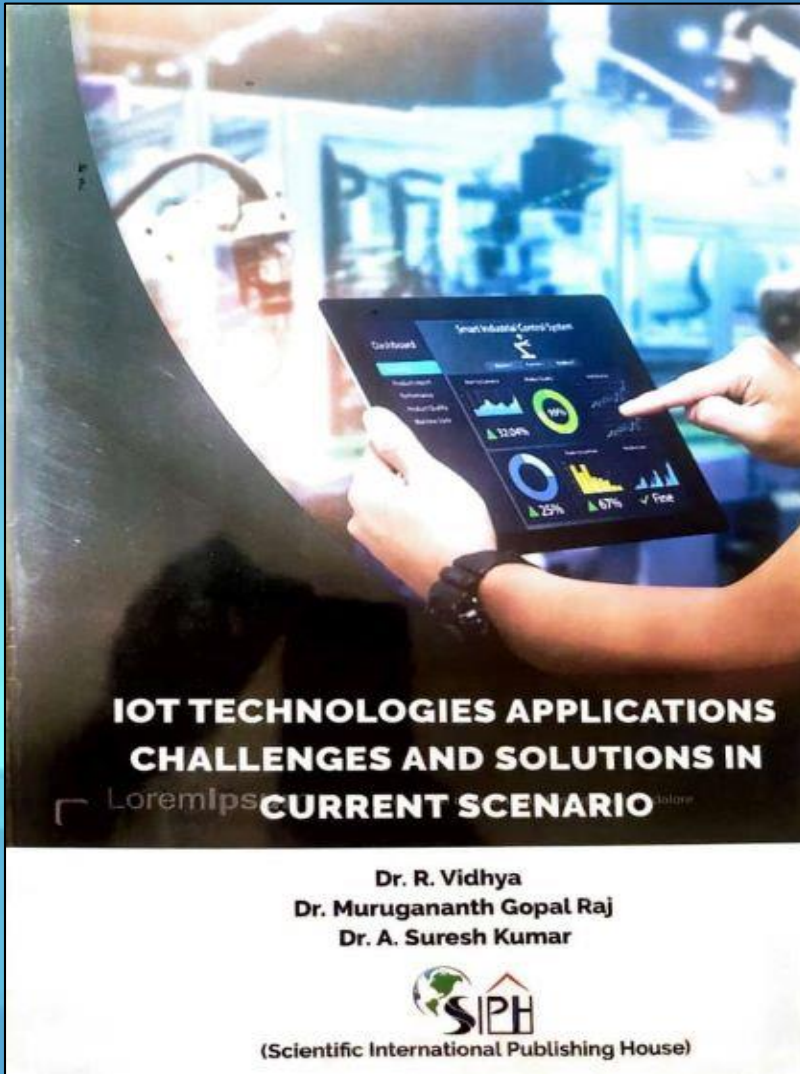
APPLICATION NUMBER	202141053537
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	22/11/2021
APPLICANT NAME	1 . PRADIP C 2 . DR. SARFRAZ FAYAZ KHAN 3 . DR. S. MUTHUKRISHNAN 4 . DR. S. GEEITHA 5 . MURUGANANTH GOPAL RAJ 6 . MANICKA VASAGAM A 7 . SANTHOSH P 8 . SURESH BABU V
TITLE OF INVENTION	ARTIFICIAL INTELLIGENCE BASED NO-BALL DETECTION IN THE CRICKET FIELD
FIELD OF INVENTION	MECHANICAL ENGINEERING
E-MAIL (As Per Record)	
ADDITIONAL-EMAIL (As Per Record)	chenukadpradip@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	---
PUBLICATION DATE (U/S 11A)	10/12/2021

## Application Status

APPLICATION STATUS	<b>Awaiting Request for Examination</b>
--------------------	-----------------------------------------

Dr P Santhosh, Asst. Professor, Dept. of EEE, published a patent on “Artificial Intelligence based No-ball Detection in the Cricket Field” on 10 December 2021. Application Number: 202141053537.

## IT | BOOK PUBLISHED | IoT TECHNOLOGIES APPLICATIONS CHALLENGES AND SOLUTIONS IN CURRENT SCENARIO



### IoT Technologies Applications Challenges and Solutions in Current Scenario

FIRST EDITION

**Authors**

Dr. R. Vidhya  
Dr. Murugananth Gopal Raj  
Dr. A. Suresh Kumar Arumugam



(SCIENTIFIC INTERNATIONAL PUBLISHING HOUSE)

Dr R Vidhya, Asst. Professor, Dept. of IT, published a Book on “IoT Technologies Applications Challenges and Solutions in Current Scenario” in Scientific International Publishing House.

<https://sipinternationalpublishers.com/product-detail.php?PID=NjY=>

## EEE | PAPER PUBLISHED IN SCI JOURNAL

ENERGY SOURCES, PART A: RECOVERY, UTILIZATION, AND ENVIRONMENTAL EFFECTS  
<https://doi.org/10.1080/15567036.2021.2009064>

Check for updates

**A simplified methodology for renewable energy integration and harmonic current reduction in hybrid micro grid**Senthil Kumar Ramu <sup>a</sup>, Gerald Christopher Raj Irudayaraj <sup>b</sup>,  
Suresh Kalichikadu Paramasivam <sup>c</sup>, Ramesh Murugesan <sup>c</sup>, Suresh Muthusamy <sup>d</sup>,  
Suma Christal Mary Sundararajan <sup>e</sup>, Hitesh Panchal <sup>f</sup>, Kishor Kumar Sadasivuni <sup>g</sup>,  
and Radhe Shyam Meena <sup>h</sup>

<sup>a</sup>Department of Electrical and Electronics Engineering, Sri Krishna College of Technology (Autonomous), Coimbatore, India; <sup>b</sup>Department of Electrical and Electronics Engineering, PSNA College of Engineering and Technology, Dindigul, Tamil Nadu, India; <sup>c</sup>Department of Electrical and Electronics Engineering, M.Kumarasamy College of Engineering (Autonomous), Karur, India; <sup>d</sup>Department of Electronics and Communication Engineering, Kongu Engineering College (Autonomous), Erode, India; <sup>e</sup>Department of Information Technology, Panimalar Institute of Technology, Chennai, India; <sup>f</sup>Department of Mechanical Engineering, Government Engineering College, Patan, India; <sup>g</sup>Centre for Advanced Materials, Qatar University, Qatar; <sup>h</sup>Technical Expert (IREDA/World Bank), Ministry of New and Renewable Energy, New Delhi, India

**ABSTRACT**

Due to advancements in power electronics devices and the support of improvements on both the power supply and load sides, Distributed Energy (DG) is rapidly being connected to the grid in the form of AC/DC Hybrid Micro-Grid (HMG). The development will result in a substantial change in the network topology, new design problems for the micro-grid control unit, and new requirements for the simulation testing laboratory. The Bidirectional AC-DC converter (BAC) is necessary for hybrid microgrids to provide voltage stability and power equilibrium between the AC and DC grids. To suppress the harmonic current control approach, an enhanced Fryze-Buchholz Depenbrock (FBD) current harmonic detection technique is integrated with droop control in this paper. This proposed system not only performs the power transformation but also minimizes harmonics. While considering non-linear load, the proposed system yields the control ability for regulating the converter to eliminate the harmonics of 74.41% in the grid current. While incorporating the HMG in the proposed system, the control strategy decreases 90.3% and 89.4% of reactive power in both linear and non-linear loads. The obtained simulation results are used to confirm the feasibility and effectiveness of the control scheme.

**ARTICLE HISTORY**Received 4 September 2021  
Revised 16 November 2021  
Accepted 17 November 2021**KEYWORDS**

Active power filter; bidirectional power converter; distributed generation; harmonic current detection; droop control; time domain power theory

**Introduction**

The growing energy demand and consumption of electrical energy have moved existing power systems into DG. Wind and solar power production have increased in recent years. Also, hybrid systems can provide higher reliability and quality power to consumers (Li et al. 2018). The DG decreases the requirement for long-distance power transmission. Micro-grids are an innovative type of tiny and autonomous power system junction and have become well known nowadays (Kanase-Patil et al. 2020)-(Ramu et al. 2021). A micro-grid can be formed by connecting a small modular resource such as

**CONTACT** Senthil Kumar Ramu [senthilme90@gmail.com](mailto:senthilme90@gmail.com) Assistant Professor, Department of Electrical and Electronics Engineering, Sri Krishna College of Technology (Autonomous), Coimbatore, Tamil Nadu, India; Hitesh Panchal [engineerhitesh2000@gmail.com](mailto:engineerhitesh2000@gmail.com) Assistant Professor, Department of Mechanical Engineering, Government Engineering College, Patan, Gujarat, India; Suresh Muthusamy [infotosuresh@gmail.com](mailto:infotosuresh@gmail.com) Assistant Professor Senior Grade, Department of Electronics and Communication Engineering, Kongu Engineering College (Autonomous), Perundurai, Erode, Tamil Nadu, India  
© 2021 Taylor & Francis Group, LLC

Dr R Senthil Kumar, Asst. Professor, Dept. of EEE, published a paper on "A Simplified Methodology for Renewable Energy Integration and Harmonic Current Reduction in Hybrid Micro Grid" in SCI Journal of Energy Sources, Taylor & Francis.

<https://www.tandfonline.com/doi/full/10.1080/15567036.2021.2009064>.

## CSE | PAPER PUBLICATION

Springer Link

3rd EAI International Conference on Big Data Innovation for Sustainable Cognitive Computing pp 1-20 | [Cite as](#)

## A Hybrid Algorithm for Document Clustering Using Optimized Kernel Matrix and Unsupervised Constraints

Authors

Authors and affiliations

S. Siamala Devi, M. Deva Priya , P. Anitha Rajakumari, R. Kanmani, G. Poorani, S. Padmavathi, G. Niveditha

Conference paper

First Online: 01 January 2022

1

Downloads

Part of the [EAI/Springer Innovations in Communication and Computing](#) book series (EAISICC)

### Abstract

Document clustering plays a dominant role in data mining, and grouping of data makes information retrieval easier. Significant information can be mined from a collection of documents by clustering them effectively. Several researches that concentrate on clustering documents are available in the literature. In the former works, document clustering is performed by using methodologies such as Term Weight-based Hybridized Harmony K-Means (TW-HHKM) and Coverage Factor-based Hybridized Harmony K-Means (CF-HHKM) searches. Clustering is normally performed using K-means algorithm, and cluster centroids are optimally found by using Harmony Search Algorithm (HSA). The main challenge faced by the existing methods is the reduced accuracy as unrelated documents may be grouped together. To overcome this problem, Novel Feature Weighting and Feature Selection-based Hybrid Scheme for Document Clustering (NFW-FS-HSDC) with optimized and unsupervised constraint kernel matrix K-means and Harmony Search Method (HSM) is introduced for accurate clustering of documents. The weights of the data instance and softness parameter decide the performance of

Dr S Siamala Devi, Dr M Deva Priya, Assoc. Professors, Ms Poorani G, Ms Padmavathi S and Ms Niveditha G, Asst. Professors, Dept. of CSE, published a paper on “**A Hybrid Algorithm for Document Clustering Using Optimized Kernel Matrix and Unsupervised Constraints**” in EAI/Springer Innovations in Communication and Computing Book Series (EAISICC), ISBN: 978-3-030-78749-3, January 2022. DOI: [https://doi.org/10.1007/978-3-030-78750-9\\_1](https://doi.org/10.1007/978-3-030-78750-9_1).

## CSE | PAPER PUBLICATION

Springer Link




3rd EAI International Conference on Big Data Innovation for Sustainable Cognitive Computing pp 155-169 | [Cite as](#)

## Improved Rider Optimization Algorithm-Based Link Aware Fault Detection (IROA-LAFD) Scheme for Securing Mobile Ad Hoc Networks (MANETs)

Authors

Authors and affiliations

Sengathir Jenakireman, M. Deva Priya , G. Aishwaryalakshmi, T. Suganya, S. Sam Peter, S. Kerthick, A. Christy Jeba Malar

Conference paper

First Online: 01 January 2022

Part of the [EAI/Springer Innovations in Communication and Computing](#) book series (EAISICC)

### Abstract

Securing communication in a dynamic network like Mobile Ad hoc Network (MANET) is considered as a crucial and demanding task. A number of diversified works are developed in the literature for mitigating harmful attacks that degrade the performance of the network. Faulty links need to be detected for attaining better performance in terms of reliability and availability of mobile nodes in the network. Moreover, attacks need to be detected through a single stage attack detection process in a proactive way for guaranteeing quality of service in the network. However, the detection accuracy of most of the existing approaches in the literature still possess room for improvement. In this paper, Improved Rider Optimization Algorithm-based Link Aware Fault Detection (IROA-LAFD) scheme is proposed for facilitating security by mitigating grey hole and black hole attacks with enhanced link stability. This IROA-LAFD scheme targets on efficient mitigation of packet dropping based on the steps that include the discovery of neighbour and route, detection of attack, analysis of links, transmission of secure

Dr M Deva Priya, Assoc. Professor, Ms T Suganya and Mr S Sam Peter, Asst. Professors, Dept. of CSE, published a paper on “**Improved Rider Optimization Algorithm-based Link Aware Fault Detection (IROA-LAFD) Scheme for Securing Mobile Ad Hoc Networks (MANETs)**” in EAI/Springer Innovations in Communication and Computing Book Series (EAISICC), ISBN: 978-3-030-78749-3, January 2022. DOI: [https://doi.org/10.1007/978-3-030-78750-9\\_11](https://doi.org/10.1007/978-3-030-78750-9_11).



## CSE | PAPER PUBLICATION

Springer Link



[3rd EAI International Conference on Big Data Innovation for Sustainable Cognitive Computing](#) pp 101-116 | [Cite as](#)

## Emperor Penguin Optimization Algorithm and M-Tree-Based Multi-Constraint Multicast Ad Hoc On-Demand Distance Vector Routing Protocol for MANETs

Authors

Authors and affiliations

M. Deva Priya, M. Rajkumar, S. Karthik, A. Christy Jeba Malar , R. Kanmani, G. Sandhya, P. Anitha Rajekumari

Conference paper

First Online: 01 January 2022

Part of the [EAI/Springer Innovations in Communication and Computing](#) book series (EAISICC)

### Abstract

Multicast based routing in ad hoc networks is considered essential for attaining reliable data dissemination. However, trusted data transmission can be achieved by using optimal multicast trees that aid in better performance of the network. Further, prolonging network lifetime is yet another issue that needs to be concentrated for sustained connectivity. In this chapter, Emperor Penguin Optimization Algorithm and M-Tree-based Multicast Ad hoc On-demand Distance Vector Routing (EPOA-MT-MAODV) protocol is proposed for optimal selection of multicast routes for enhancing the lifetime of the network. This proposed EPOA-MT-MAODV protocol utilizes the merits of exploitation and exploration inherited from Emperor Penguin Optimization Algorithm (EPOA) with the estimation of multifactor, path inclusion and destination. It focuses on delay, minimum distance, link stability and energy for optimal selection of optimal tree. The simulation results of the proposed EPOA-MT-MAODV protocol confirm better performance in terms of energy consumption and Link Lifespan Time (LLT) for

Dr M Deva Priya, Assoc. Professor and Ms G Sandhya, Asst. Professor, Dept. of CSE, published a paper on “**Emperor Penguin Optimization Algorithm and M-Tree-based Multi-constraint Multicast Ad Hoc On-demand Distance Vector Routing Protocol for MANETs**” in EAI/Springer Innovations in Communication and Computing Book Series (EAISICC), ISBN: 978-3-030-78749-3, January 2022. DOI: [https://doi.org/10.1007/978-3-030-78750-9\\_7](https://doi.org/10.1007/978-3-030-78750-9_7).

## CIVIL | TNSCST DIT SCHEME | PROPOSAL ON SOLAR POWERED SMART DRIP IRRIGATION SYSTEM

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY  
(An Autonomous body of Govt. of Tamilnadu)  
DOTE Campus, Chennai - 600 025

APPLICATION FOR GRANT UNDER THE SCHEME  
DISSEMINATION OF INNOVATIVE TECHNOLOGY (DIT)

Under this scheme, innovative technologies are to be disseminated by educational / research institutions of our state through training / workshop program for the benefit of target groups such as farmers, fishermen & women, self help group members and others. A sum of Rs.50,000/- may be provided for one programme with beneficiaries of about 25 to 50 with a duration of 3-5 days. Two copies of proposals may be submitted to "The Member Secretary, Tamilnadu State Council for Science and Technology, DOTE Campus, Chennai - 600 025" on or before 31.12.2021.

MEMBER SECRETARY

### PART-I GENERAL INFORMATION & DETAILS OF THE PROGRAMME

- |                                  |                                                                      |
|----------------------------------|----------------------------------------------------------------------|
| 1. Programme Title               | : Solar-powered smart drip irrigation system                         |
| 2. Broad Subject Area            | : Irrigation Engineering                                             |
| 3. Implementing Agency           |                                                                      |
| a. Name of the Agency            | : Sri Krishna College of Technology                                  |
| b. Complete address with pincode | : Arivozhi Nagar, Kovaipudur,<br>Coimbatore - 641042                 |
| c. Phone No.; Fax; E-mail        | : 9566775418; 0422-2984567;<br>padmanaban.i@skct.edu.in              |
| Name and address of Co-          | : 1.Dr.I.Padmanaban,<br>2.Dr.M.Lenin Sundar<br>3. Dr.V.Sathish Kumar |

Dr I Padmanaban, Professor and Head, Dr M Lenin Sundar Professor and Dr V Sathish Kumar, Asst Professor, Dept of Civil Engineering, submitted a proposal on "**Solar Powered Smart Drip Irrigation System**" under TNSCST – DIT Scheme on 30 December 2021.

## CIVIL | TNSCST DIT SCHEME | PROPOSAL ON SOLAR POWERED SMART DRIP IRRIGATION SYSTEM

TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY  
(An Autonomous body of Govt. of Tamilnadu)  
DOTE Campus, Chennai - 600 025

### APPLICATION FOR GRANT UNDER THE SCHEME DISSEMINATION OF INNOVATIVE TECHNOLOGY (DIT)

Under this scheme, innovative technologies are to be disseminated by educational / research institutions of our state through training / workshop / awareness program for the benefit of target groups such as farmers, fishermen & women, self-help group members and others. A sum of Rs.50,000/- may be provided for one programme with beneficiaries of about 50 to 100 with a duration of 3-5 days. Two copies of proposals may be submitted to "The Member Secretary, Tamilnadu State Council for Science and Technology, DOTE Campus, Chennai - 600 025" on or before 31.12.2021.

#### PART-I GENERAL INFORMATION & DETAILS OF THE PROGRAMME

1. Programme Title : Economic Empowerment of rural women through Low cost bamboo cultivation and Ecofriendly Bamboo Products.
2. Broad Subject Area :
3. Implementing Agency
  - a. Name of the Agency : Sri Krishna College of Technology
  - b. Complete address with pincode : Sri Krishna College of Technology, Kovaiipudur, Coimbatore-42
  - c. Phone No.; Fax; E-mail : 0422- 2984567, principal@skct.edu.in
4. Name and address of Co-ordinator of the Programme : Dr.I.Padmanaban, Professor & Head  
: Mr. R.Ramesh, Assistant professor  
: Mr.T.P.A.Aravind, Assistant professor
5. Duration & Total Cost : 5 Days, Rs.1,10,000
6. Programme Summary :  
In response to Plastic ban and alternative material usage by government, our institution would like to host an intensive 5 day Skill development training program Bamboo Cultivation and Product Development to facilitate the women Homemaker community to increase their standard of living. The sessions will be interactive and practical oriented classes which cover main topics like importance of bamboo cultivation, its environmental importance, plantation, periodical maintenance and

Dr I Padmanaban, Professor and Head, Mr R Ramesh and Mr T P A Aravind, Asst Professors, Dept. of Civil Engineering, submitted a proposal on "Economic Empowerment of Rural Women through Low Cost Bamboo Cultivation and Ecofriendly Bamboo Products" under TNSCST – DIT Scheme on 30 December 2021.

# NEW VISTAS OF LEARNING



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digestfeedback@skct.edu.in

## ECE | FDP ON RECENT TRENDS AND CHALLENGES IN ROBOTICS AND AUTOMATION



MANIPAL UNIVERSITY  
JAIPUR  
(University under Section 2(f) of the UGC Act)



Department of Mechatronics Engineering  
Manipal University Jaipur

### *Certificate of Participation*

This is to certify that Mr/Ms/Dr Anju Asokan from Sri Krishna College of Technology has actively participated in *Five Day National Faculty Development Program on 'Recent Trends and Challenges in Robotics and Automation (RTCRA-21)'* from 13<sup>th</sup> Dec 2021 to 17<sup>th</sup> Dec 2021 organized by Department of Mechatronics Engineering, Manipal University Jaipur, Rajasthan, India.

Dr Shiva Prasad H C  
Director, SAMM  
Manipal University Jaipur

Dr Shahbaz A. Siddiqui  
HoD, Department of Mechatronics Engg.  
Manipal University Jaipur

Dr Raja Rout  
Coordinator RTCRT-21  
Manipal University Jaipur

Dr Anju Asokan, Asst. Professor, Dept. of ECE, attended a Five-day FDP on **“Recent Trends and Challenges in Robotics and Automation”** organised by Manipal University, Jaipur during 13-17 December 2021.

## MECH | FDP ON FABRICATION, CHARACTERIZATION AND STRENGTHENING MECHANISM OF COMPOSITES



Mr K Umanath, Asst. Professor, Dept. of Mechanical Engineering, attended a One-week online FDP on “**Fabrication, Characterization and Strengthening Mechanism of Composites**” organised by AMET University, Chennai during 13-18 December 2021.

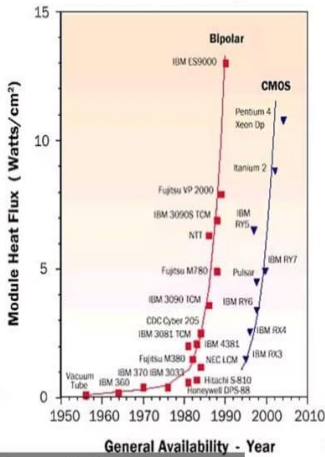
## CSE | ATAL FDP ON ARTIFICIAL INTELLIGENCE IN IMAGE PROCESSING



Mr S Sam Peter, Asst. Professor, Dept. of CSE, completed the ATAL Faculty Development Programme on "Artificial Intelligence in Image Processing" organised by IIT Nagpur during 20-24 December 2021.

# MECH | FDP ON ADVANCES IN FLUID FLOW AND HEAT TRANSFER

## Problem of heat dissipation with miniaturization



- The heat flux associated with bipolar technology in the 1980's onward use of indirect liquid cooling cold plates at the module level.
- CMOS circuit technologies in the 1990's brought back air-cooling
- Increasingly efficient and smaller power electronics → heat flux increased dramatically: 200–250 W or more.
- The power dissipation in modern chip architectures can be highly non-uniform across the die surface, with localized functional areas where the power density is a factor of five to ten higher than the die average → local hot-spots.



Zoom Meeting: to using the webcam

Close Participants (58)

Search

- SK Senthil Kumar K (me)
- PR Pankajkumar R (Host)
- DC DHIMAN CHATTERJEE (Co-host)
- CM Cheralathan M (Co-host)
- KK K.Suresh Kumar (Co-host)
- P Ponsankar (Co-host)
- Sathishkumar A (Co-host)
- C Chandrasekaran Ponnusamy
- D Deepak K (RC2113002011002)
- D Dhayanidhi
- DE DHAYANIDHI E
- DS Dr. S. Senthilkumar

## Different design attempts to remove heat from a chip: direct cooling

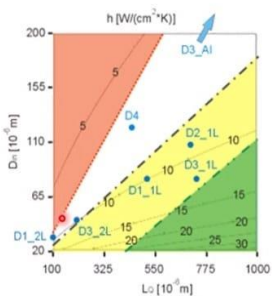


Fig. 11. Contour plot of the heat-transfer coefficient derived from the fit at a flow rate of 2.5 l/min vs.  $D_e$  and  $L_e$ . Structures in the red zone are geometrically impossible, in the green area  $Re > 1000$  and close to the transition regime, in the yellow area  $\Delta P > 0.25$ . The optimum cold plate design is on the dash-dotted black line. Blue bullets represent the devices built and tested

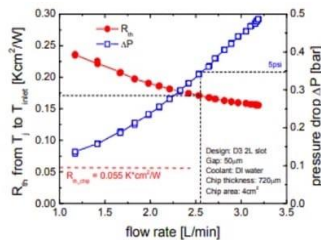


Fig. 12. Thermal resistance (red circles) and pressure drop (blue squares) of the near-optimal D3.2L design at a gap of 50 μm as function of coolant flow rate. The thermal resistance from junction to the inlet temperature includes a 720-μm-thick silicon chip.

Brunschwiler, T. et al. Proc. ITHERM 196–203 (2006).

Mr K Senthil Kumar, Asst. Professor, Dept. of Mechanical Engineering, attended a Day-1 session in a 6-day online FDP on “Advances in Fluid flow and Heat Transfer” organised by SRM Institute of Science and Technology, Chennai on 03 January 2022.



# MECH | FDP ON ADVANCES IN FLUID FLOW AND HEAT TRANSFER

**Driving potential....**

The slide contains four diagrams illustrating driving potentials:

- Fluid flow:** A pipe section of length  $\Delta x$  with high pressure  $p_1$  on the left and low pressure  $p_2$  on the right, resulting in a pressure drop  $\Delta p$ . The direction of flow is indicated by a yellow arrow.
- Heat flow:** A warmer body on the left and a cooler body on the right, with a temperature difference  $\Delta T$ . Heat flow is shown as a yellow arrow moving from the warmer to the cooler body. The cross-sectional area is  $A$  and the length is  $L$ .
- Mass flow:** A sequence of four beakers showing a lump of sugar dissolving into sugar molecules, illustrating a concentration difference.
- Electric Current:** A metal wire connected between a high potential (+) terminal and a low potential (-) terminal. The flow of charge is shown as a yellow arrow moving from high to low potential. The wire is supported by insulated stands.

Navigation and interface elements include: Zoom, Leave, Start Video, Share, 44 Participants, and More.

**Flow and Heat transfer Characteristics ....**

REC

Flow characteristics .....

- Pressure drag coefficient
- Frictional drag coefficient
- Total drag coefficient
- Pressure lift coefficient
- Frictional lift coefficient
- Total lift coefficient
- Total pressure drop
- Pressure coefficient
- Skin friction coefficient
- Surface vorticity
- Volume goodness factor
- Effectiveness
- Strouhal number

Heat Transfer Characteristics .....

- Convective heat transfer coefficient

The slide includes a 'REC' indicator, a 'Zoom' control, and a 'Leave' button. It also features a 'Participants' count of 44 and a 'More' option. Visuals include a cruise ship, an airplane, a motorcycle, and a temperature distribution diagram with a color scale from 300 to 305.

Mr K Senthil Kumar, Asst. Professor, Dept. of Mechanical Engineering, attended a Day-2 session in a 6-day online FDP on “Advances in Fluid Flow and Heat Transfer” organised by SRM Institute of Science and Technology, Chennai on 04 January 2022.

# MECH | FDP ON ADVANCES IN FLUID FLOW AND HEAT TRANSFER

Transverse slip problem: One boundary with cosine slip and another with uniform slip (Case A)

Governing equations and boundary conditions are:

$$\left\{ \begin{aligned} \frac{\partial^2 U}{\partial X^2} + \frac{\partial^2 V}{\partial Y^2} &= \frac{\partial P}{\partial X} \\ \frac{\partial^2 U}{\partial X^2} + \frac{\partial^2 V}{\partial Y^2} &= \frac{\partial P}{\partial Y} \\ \frac{\partial U}{\partial X} + \frac{\partial V}{\partial Y} &= 0 \end{aligned} \right.$$

Boundary conditions:

$$U|_{Y=0} - \lambda \beta^-(X) \frac{\partial U}{\partial Y}|_{Y=0} = 0$$

$$U|_{Y=1} + \lambda \beta^+(X) \frac{\partial U}{\partial Y}|_{Y=1} = 0$$

$$V|_{Y=0} = V|_{Y=1} = 0$$

Where, slip is given by:  $\beta^-(X) = \beta_0 [1 + \alpha \cos(\frac{2\pi X}{\lambda})]$ ,  $\beta^+(X) = \beta_0$

Using stream function  $U = \frac{\partial \psi}{\partial Y}$  and  $V = -\frac{\partial \psi}{\partial X}$

We have,  $\frac{\partial^4 \psi}{\partial X^4} + 2 \frac{\partial^2}{\partial X^2} (\frac{\partial^2 \psi}{\partial Y^2}) + \frac{\partial^4 \psi}{\partial Y^4} = 0$

Assuming the solutions,  $\psi = a_1 y^3 + a_2 y^2 + a_3 y + a_4 + \sum_{n=1}^{\infty} F_n(Y) \cos(k_n X)$

Using boundary conditions,  $\psi(0) = 0 \rightarrow a_4 = 0, F_n(0) = 0$

$$\psi(1) = 1 \rightarrow a_2 = 1 - a_1 - a_3, F_n(1) = 0$$

$$\frac{\partial \psi}{\partial Y}|_{Y=0} - \lambda \beta^-(X) \frac{\partial^2 \psi}{\partial Y^2}|_{Y=0} = 0 \rightarrow a_3 = 2\lambda \beta_0 a_2, F_n'(0) = \lambda \beta_0 F_n''(0)$$

Solving for  $F_n$  we have,  $F_n = C_n t_n(Y)$

Where,  $t_n(Y) = [1 - Y + Y \frac{(1 + 2\lambda \beta_0)}{(1 + 2\lambda \beta_0 k_n \coth(k_n))}] \sinh(k_n Y)$

$$Y \frac{(1 + 2\lambda \beta_0)}{(1 + 2\lambda \beta_0 k_n \coth(k_n))} \cosh(k_n Y)$$

Dr. Avinash Kumar, Indian Institute of Information Technology, Design & Manufacturing Kancheepuram, Chennai-600127

### Some observations from theoretical modelling:

One boundary with cosine slip and another with no-slip

Both boundary with cosine slip

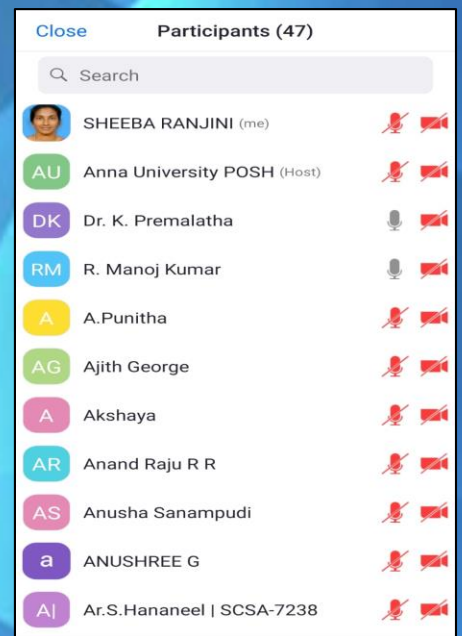
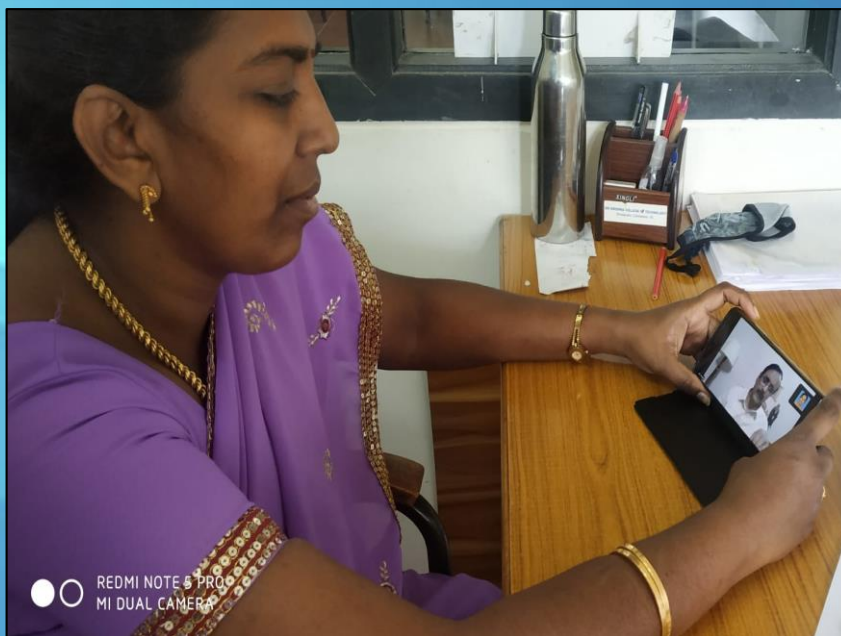
Variation of the permeability relative to a uniformly slipping channel with dimensionless channel height for different values of  $b_0/L$  and  $\alpha=1$

- From literature, for large value of  $b_0/h$  we have  $b_{eff} = p b_0$
- Where,  $p(\beta_0) = \frac{1}{2\pi\beta_0} E_1[\frac{1}{2\pi\beta_0}] \exp[\frac{1}{2\pi\beta_0}]$  and  $E_1(x) = \int_x^{\infty} \frac{\exp(-t)}{t} dt$
- It gives  $R = \frac{(1 + \lambda\beta_0)(1 + 4p\lambda\beta_0)}{(1 + p\lambda\beta_0)(1 + 4\lambda\beta_0)}$  It has minima at  $\frac{1}{\lambda} = 2\sqrt{p\beta_0}$
- Minimum value of R is  $\min(R) = R(\frac{1}{\lambda} = 2\sqrt{p\beta_0}) = \left(\frac{1 + 2\sqrt{p}}{2 + \sqrt{p}}\right)^2$

Dr. Avinash's screen

Mr K Senthil Kumar, Asst. Professor, Dept. of Mechanical Engineering, attended a Day-3 session of 6-day online FDP on “Advances in Fluid Flow and Heat Transfer” organised by SRM Institute of Science and Technology, Chennai on 05 January 2022.

## S&amp;H | WEBINAR ON BRIDGING GENDER GAP



The Members of Faculty from the Dept. of S&H attended a webinar on **“Bridging Gender Gap”** facilitated by Prof. Murali, Socrates Studio, organised by Prevention of Sexual Harassment (POSH) Cell, Anna University, Chennai on 05 January 2022.

# MEETINGS & DISCUSSIONS



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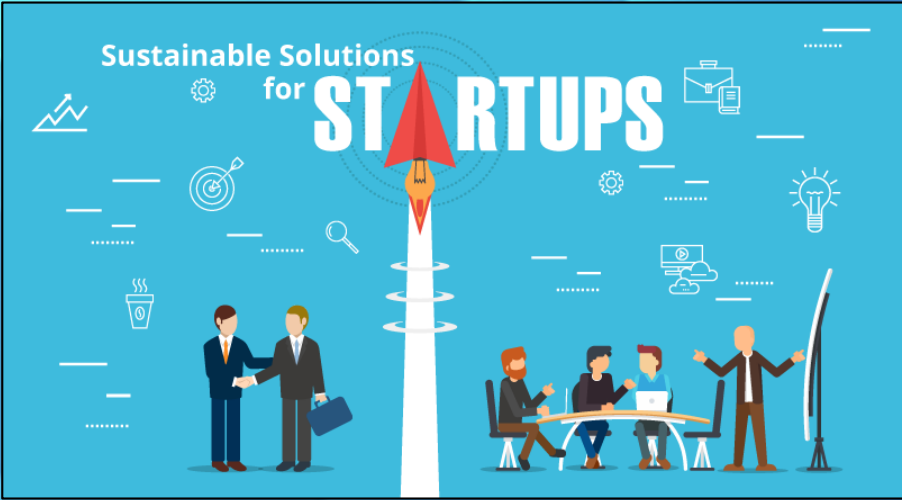
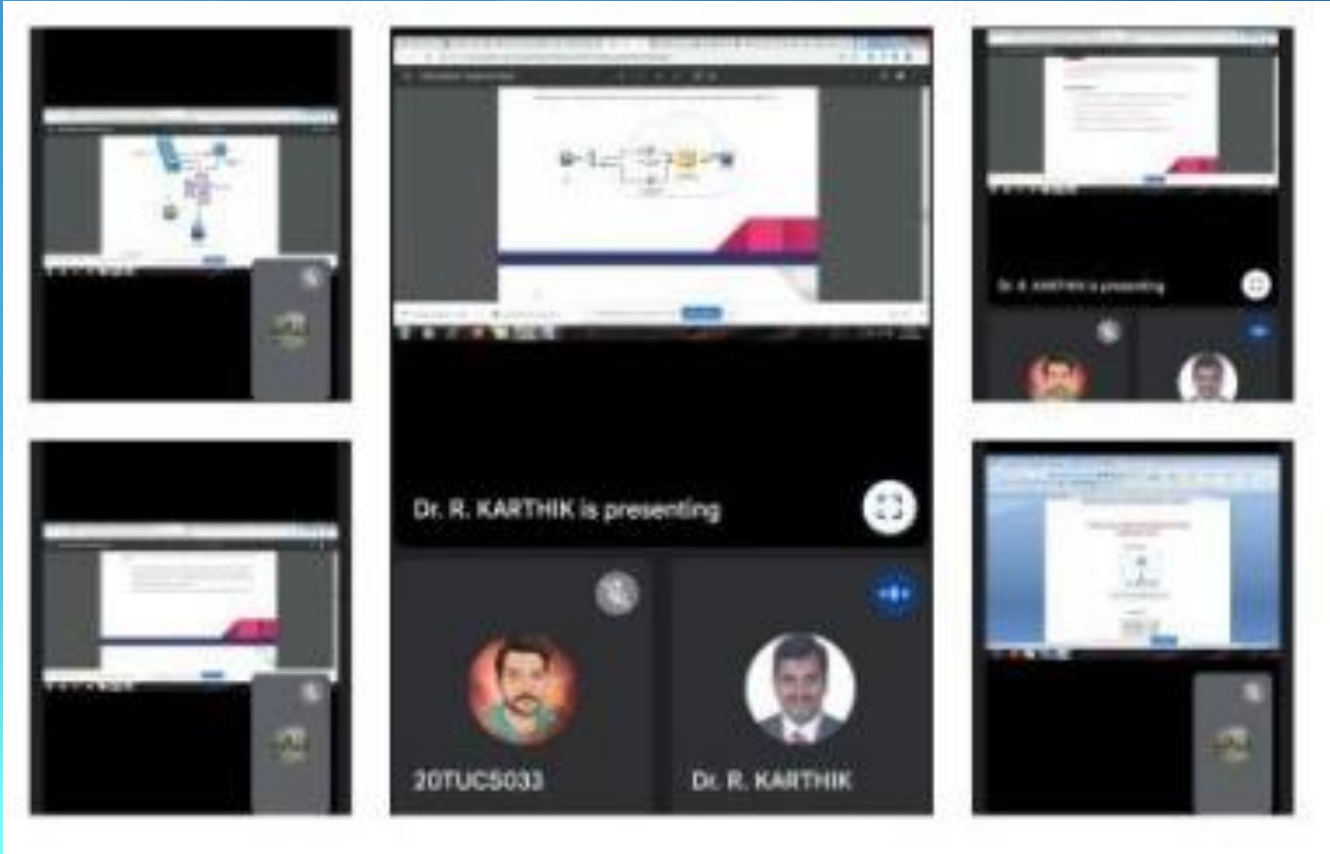


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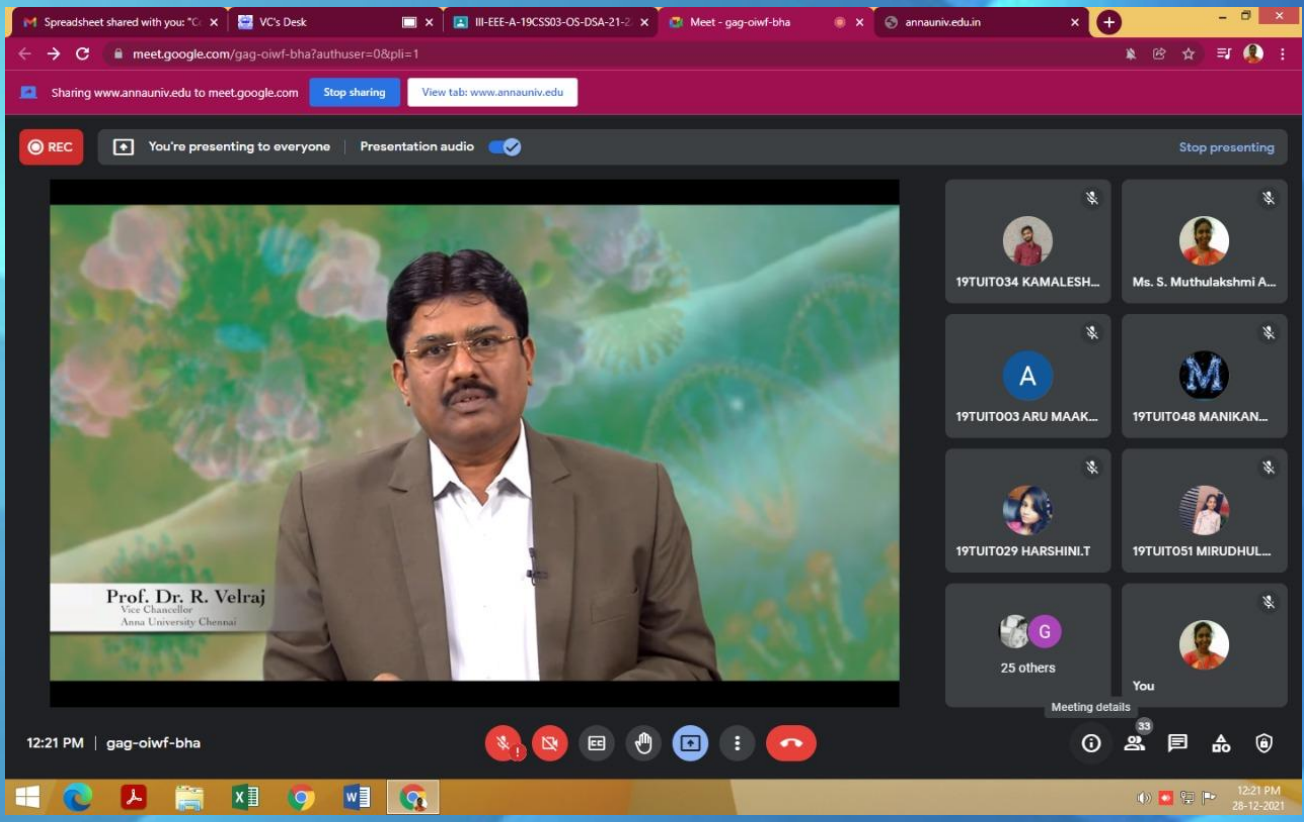
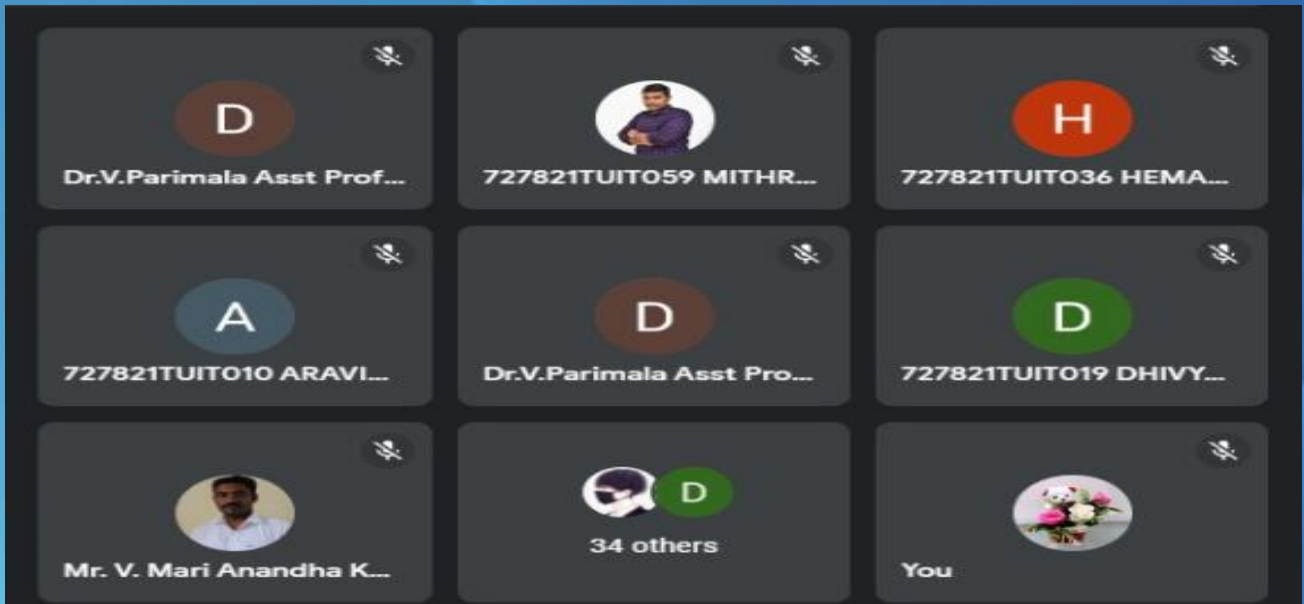
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**CSE | STARTUP MEETING**

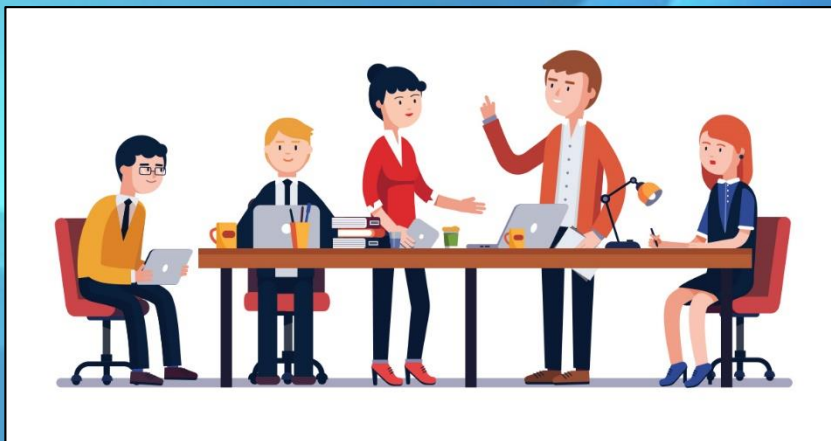


Dr R Karthik, Assoc. Professor, Dept. of CSE, conducted a meeting with the Startup Team Members of the Dept. of CSE on 29 December 2021.

# IT | TUTOR WARD SESSION



The Tutors of Second, Third and Final B.Tech. IT conducted a **“Tutor Ward Session”** with their respective wards on 28 December 2021.

**IT | DEPARTMENT MEETING**

Dr G M Tamilselvan, Professor and Head, Dept. of IT, conducted a meeting with the Members of Faculty regarding Academic Activities for the Students of Second, Third and Final B.Tech. IT, NPTEL Courses, Hostel Details, R&D Activities, etc. on 05 January 2022.

**IT | DEPARTMENT MEETING**

Dr G Tamilselvan, Professor and Head, Dept. of IT, conducted a meeting with the Members of Faculty regarding Academic Activities, MyKlassroom Entry, Project Work, End Semester Examination, R&D Activities, etc. on 28 December 2021.



# OUTREACH ACTIVITIES



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SoM | OUTREACH ACTIVITIES | SOCIAL SERVICES CLUB



The Social Services Club of the School of Management donated Tiffin Boxes, Stationary and Eatables to "Families for Children" at Podanur on 24 December 2021.

**6**

**SKCT INSTITUTION'S  
INNOVATION  
COUNCIL (IIC)**

**1**

**ALUMNI CORNER**

**7**

**STUDENTS'  
PARTICIPATIONS**

**9**

**FACULTY  
PARTICIPATIONS**

**8**

**RESEARCH**

**7**

**NEW VISTAS OF  
LEARNING**

**4**

**MEETINGS &  
DISCUSSIONS**

**1**

**OUTREACH  
ACTIVITIES**

*What* YOU *Think*  
YOU BECOME  
*What* YOU *Feel*  
YOU ATTRACT  
*What* YOU *Imagine*  
YOU CREATE  
-BUDDHA-

