SSM Institute of Engineering and Technology

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai

Accredited by NAAC & NBA

Dindigul – Palani Highway, Dindigul -624 002

Date: 28.11.2022

CIRCULAR

We are pleased to inform you that SSM Institute of Engineering and Technology in collaboration with Unnat Bharat Abhiyan (UBA), is organizing a National Conference on Rural Development and Innovation on March 24 - 25, 2023. This conference aims to bring together academia, researchers, and industry experts to explore innovative solutions addressing the challenges faced by rural communities.

The conference will also host an exhibition, providing an opportunity to showcase innovative projects and research outcomes.

Conference Themes:

1. Water and Waste Management
2. Rural Infrastructure
3. Rural Energy Systems
4. Sanitation
5. Capacity Building Strategies for Convergence & Implementation
6. Environment and Sustainable Resource Management

Institute of Engineering and Technology

PRINCIPAL

Dr.D.SENTHIL [illegible] Ph.D.,(NUS)
Principal
SSM Institute of Engineering and Technology

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SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

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Dr.D.Senthil Kumaran, M.E., Ph.D
Principal
SSMIET/92/December/2022

Date: 30.12.2022

Greetings from SSMIET,

This is to request your kind self to give consent to be a member of advisory council of the proposed UBA Conference and Exhibition on Rural Innovations scheduled on 24th and 25th March 2023. Themes and subthemes are given below for your kind reference.

I. **Water and waste management:**
   1. Water Management
   2. Sewage Management
   3. Liquid waste management
   4. Agriculture Waste management

II. **Rural Infrastructure:**
   1. Participatory Technological outreach
   2. Communication Technologies
   3. Health: Physical and Mental
   4. Service-Learning Approaches

III. **Rural Energy system**
   1. Batteries and Energy Storages
   2. Application of Sensors
   3. Renewable Energy Technologies
   4. Bio Energy and Solar Energy

IV. **Sanitation**
   1. Technology for Sanitation
   2. Wash Strategies and Initiatives
   3. Successful Wash Implementation
   4. Networking with wash Institute

V. **Capacity building strategies for convergence and Implementation**

VI. **Environment and Sustainable Resource Management**
   1. Supply chain Management for Rural Sector
   2. Resource Mapping for Villages
   3. Tele medicine

with regards

PRINCIPAL
Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal
SSM Institute of Engineering and Technology

0451 - 2448800-2448899 0451-2448855

Dindigul - Palani Highway, Dindigul - 624 002

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SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

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SSMIET/105/January/2023

Date: 12.01.2023

Dear Sir/Madam,

Greetings from SSMIET

Under the aegis of Unnat Bharat Abhiyan (UBA).we are organising National level Conference and Exhibition on Rural Innovations.

We are very happy to invite you to participate in this two-day event scheduled on March 24(Friday)-25(Saturday) in our campus. You can contribute your credentials as,

1. A Paper Presenter
2. An Exhibiter
3. A Knowledge Partners
4. A Sponsor &
5. An Observer

WITH NO REGISTRATION FEES

We expect your valuable presence representing your institution on this occasion.

Thank you

Dr. D. [illegible], M.E., Ph.D., [illegible]
Principal
SSM Institute of Engineering and Technology
Kuthalapatti Village, Sindalagundu (Po),
Palani Road, Dindigul - 624 002.

With Regards,

Dr.K.Vinoth Kumar M.E.,M.B.A.,Ph.D.,Post-Doctoral Fellow (Malaysia)
Convener NCERI-2023
Professor/Department of Electronics & Communication Engineering
SSM Institute of Engineering and Technology, Dindigul, Tamil Nadu,India.
GSM: 9787367067

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Dr.D.Senthil Kumaran, M.E., Ph.D
Principal
SSMIET/107/January/2023

Date: 18.01.2023

To

Dr. Virendra Kumar Vijay,
Professor, at Center for Rural Development and Technology
IIT-Delhi
National Co-ordinator
UBA

Respected Professor,

Greetings from SSMIET,

We are pleased to inform your kind self that UBA of SSMIET is organizing a National Conference and Exhibition on Rural innovation dated on March 24th and 25th 2023.

Herewith the information leaf-let is attached for your esteemed reference.

We will be honored by your acceptance to be the Chief Guest to inaugurate this event. We appeal for your highest consideration for being the Chief Guest.

Thanking You

PRINCIPAL

Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal
SSM Institute of Engineering and Technology
Kuttathupatti Village, Sindalagundu (Po),
Palani Road, Dindigul - 624 002.

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SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

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SSMIET/111/January/2023

Date: 19.01.2023

Dear Sir/Madam,

Greetings from SSMIET,

Herewith, the information leaf-let is attached for the National Conference and Exhibition on Rural Innovations dated on March 24th and 25th 2023 for your esteemed reference.

Kindly make it convenient to participate in this grand event. Your valuable presence will enlighten the various cross-sections of people to attend this event in different capacities.

Thanking You

19.01.23

With Regards

Dr.K.Vinoth Kumar M.E.,M.B.A.,Ph.D.,Post-Doctoral Fellow (Malaysia)
Convener NCERI-2023
Professor/Department of Electronics & Communication Engineering
SSM Institute of Engineering and Technology, Dindigul, Tamil Nadu,India.
GSM: 9787367067

Dr.D.SENTHIL KUMARAN, M.E.,Ph.D.,(IUS)
Principal
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Palani Road, Dindigul - 624 002.

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Dindigul - Palani Highway, Dindigul - 624 002. ssmietdgl@gmail.com

MITTEE OF CO-CHAIRS

Sankaranarayanan, Head/Mech./SSMIET
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A. Sundararaman, Head/Auto/SSMIET
Mohanbabu, Head/EEE/SSMIET
Sujatha, Head/CSE /SSMIET
Shanmugam, Head / Physics/SSMIET
Selvabharathi, Head/Civil/SSMIET
. Rameswari, Head/Maths/SSMIET

NICAL COMMITTEE

Sivakumar, AsP/EEE/SSMIET
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P. Kothai Natchiar, AP/English/SSMIET
G. Rajarajeshwari, AP/ECE/SSMIET
J. Dhanalakshmi, AP/CSE/SSMIET
ct No - 9003326766

ESPONDENCE DETAILS

orrespondence related to the conference can be made-
r.R.Senthil Kumar @ 9597156522
orrespondence related to the exhibition can be made-
r.C.Silambarasan @ 7373707001

Email –id : nceri2023@gmail.com
nceri2023@ssmiet.ac.in

PATRONS

Dr. D. Senthil Kumaran, Principal, SSMIET, Dindigul, Tamil Nadu

Prof. K. Ravichandran
UBA Regional Coordinator, Gandhigram Rural Institute (Deemed to be University), Dindigul, Tamil Nadu

CONVENER

Dr. K. Vinoth Kumar, Professor/ECE/SSMIET

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Mr. C. Silambarasan, AP/Mech./SSMIET
Mr. R. Senthil Kumar, AP/ECE/SSMIET

ADVISORY COMMITTEE MEMBERS

1. **Prof. Manoj Kumar Tiwari**, IIT Kharagpur
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4. **Prof. Indumathi Nambi**, IIT Madras
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6. **Prof. Pramod Kumar**, Sri Aurobindo College - Delhi University
7. **Dr.E.Somasundaram**, TNAU Coimbatore (Department of Agribusiness)
8. **Dr.R.Balaji**, TNAU Madurai. (Export and Innovations)
9. **Prof.B.S.Murty**, IIT Madras
10. **Dr.Ravikumar Kandasamy**, MGIRI (Deputy Director - Energy & Infrastructure)
11. **Mrs. Uma Chandrika**, MSME Madurai (Assistant Director - Chemical)
12. **Mr.Nanu Swamy**, Founder and Managing Director, Maxelerator Foundation Madurai
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14. **Dr.N.V.Sugathan**, M.D., Ph.D, Principal, Sarada Krishna Homoepathic Medical College, Kulasekharam, Kanyakumari
15. **Dr.N.Sampath Kumar**, Principal, SSM College of Arts and Science, Dindigul
16. **Dr.M.Daniel Jebaraj**, Managing Trustee, PROSPER Foundation, Theni

M&M 99652 96969

NATIONAL CONFERENCE AND EXHIBITION ON RURAL INNOVATIONS

Date : March 24 - 25, 2023

Organized by

Unnat Bharat Abhiyan
SSM Institute of Engineering and Technology

(Approved by AICTE,
New Delhi & Affiliated to Anna University, Chennai,
Accredited by NAAC(2019-2024) & NBA(2022-2025))
Dindigul, Tamilnadu - 624002.

Dr.D.SENTHIL KUMARAN, M.E., Ph.D.
Principal
SSM Institute of Engineering and Technology
Kuttathupatti Village, Sindalagundu (Po)
Palani Road, Dindigul - 624 002

In Association with

- **Mahatma Gandhi Institute for Rural Industrialization (MGIRI)**
- **MSME Madurai**
- **MAXELERATOR Foundation Madurai**
- **UBA of TNAU**

UBA

Bharat Abhiyan is inspired by the vision of ormational change in rural development processes eraging knowledge institutions to help build the cture of an Inclusive India. The conceptualization of tarted with the initiative of a group of dedicated members of IIT Delhi working for long in the area of development and appropriate technology. The t was nurtured through wide consultation with the entatives of a number of technical institutions.

SSMIET

nmugavel Mills (SSM) is one of the leading business in Textile Industry in Dindigul District for over 30 SSM Group's strong desire to offer world-class ality Engineering Education has led to the launch of T at Dindigul from the academic year 2011-2012. edge is provided by teachers, text books and tive modes with others in the society. Skills could eloped only through perennial practice. SSMIET those qualities in the younger generation, besides ion. As a basic philosophy, all the students would be ted with the importance of ethics, values, respect ure and national pride.

Conference

jective of the conference is to demonstrate how roblems can be treated as research challenges so ainstream researchers take interest in order to get publications while solving socially relevant ns. This in turn will help in the documentation and ness generation throughout the world not to n. Satisfying the criteria for career advancement, it ected that such activities among our younger tion will make them more conscious about the gross vel social issues enabling them to bring new ogical solutions in the form of appropriate design or eneurship models for the benefit of the rural masses. In addition, other organizations working in similar directions are also invited to submit papers and participate to evolve sustainable synergy among ourselves.

Call for Papers

Original papers preferably based on the following themes are invited.

Conference Themes

I. Water and waste Management

1. Water Management
2. Sewage Management
3. Liquid waste management
4. Agriculture Waste management

II. Rural Infrastructure

1. Participatory Technological outreach
2. Communication Technologies
3. Health : Physical and Mental
4. Service-Learning Approaches

III. Rural Energy System

1. Batteries and Energy Storages
2. Application of Sensors
3. Renewable Energy Technologies
4. Bio Energy and Solar Energy

IV. Sanitation

1. Technology for sanitation
2. Wash Strategies and Initiatives
3. Successful Wash Implementation
4. Networking with wash Institute

V. Capacity Building Strategies for convergence & Implementation

VI. Environment and Sustainable Resource Management

1. Supply chain Management for Rural Sector
2. Resource Mapping for Villages
3. Tele medicine

Submission of Abstract

Authors are requested to prepare their abstract and research paper and send a soft copy through email at nceri2023@gmail.com or nceri2023@ssmiet.ac.in. The authors are requested to adhere to the following guidelines.

1. Every paper must be accompanied by a cover page, which should include the title of the paper, name(s) of the author(s) and their affiliations, resident country and the complete postal and e-mailaddresses.
2. The Research Papers should be in a Word Document format, Times New Roman, 12- point font size with 1.5 line spacing, 1-inch margins and APA style of referencing.
3. Abstracts should be limited to 350-500 words.

Selected candidates will be informed through mail. The decision of the Review Committee regarding the selection of papers will be final and binding.
Selected papers will be published in the conference proceedings.

Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal
SSM Institute of Engineering and Technology
Kuttathupatti Village, Saddaiyandi (Po),
Palani Road, Dindigul - 624 002.

Important Dates

Last Date for Paper Submission	:	11.03.2023
Notification of Acceptance	:	18.03.2023
Last Date for Registration	:	20.03.2023

Exhibition Details

This exhibition intends to connect 3 different cross section of people namely,

1. Rural innovators
2. Promoting companies
3. Target audience

There are 20 stalls of standard dimensional space in which rural innovation/Technology products to be exhibited.

Any product relevant to any one of the subthemes shall be exhibited for 2 days. For further details contact **Mr.C.Silamabarasan (73737 07001).**

www.ssmiet.ac.in

उन्नत भारत अभियान
UNNAT BHARAT ABHIYAN

SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY, Dindigul

Cordially invite all for the

Inauguration of

"National Conference & Exhibition on Rural Innovations"

In the presence of

Sri. C. KANDASWAMY
Managing Trustee, SSMIET

Sri. K. SHANMUGAVEL
Chairman, SSMIET

Chief Guest

Mr. JAISINH VAERKAR

Chairman, CII - Southern Region, Madurai Zone
Managing Partner, The Peninsular Export Company,
Virudhunagar.

On 24th March 2023 (Friday)
@ 10.00 a.m, Seminar Hall-1, SSMIET

Note : Exhibition on rural Innovation will be inaugurated by the chief guest @ 11.30 am

Dr. K. Vinoth Kumar	Prof. K. Ravichandran	Dr. D. Senthil Kumaran
Convener	UBA Regional Coordinator	Principal

M&M 99652 96969

www.ssmiet.ac.in

SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY, Dindigul

Cordially invite all for the

Valedictory of

"National Conference & Exhibition on Rural Innovations"

In the presence of

Sri. C. KANDASWAMY
Managing Trustee, SSMIET

Sri. K. SHANMUGAVEL
Chairman, SSMIET

Chief Guest

Mr. NANU SWAMY
Managing Director

&

Ms. NAVEENA SWAMY
Founder

Maxelerator Foundation, Madurai

On 25th March 2023 (Saturday)
@ 03.30 p.m, Seminar Hall-1, SSMIET

M&M 99652 96969

Dr. K. Vinoth Kumar
Convener

Prof. K. Ravichandran
UBA Regional Coordinator

Dr. D. Senthil Kumaran
Principal

NATIONAL CONFERENCE AND EXHIBITION ON RURAL INNOVATIONS

Organized by

Unnat Bharat Abhiyan SSM Institute of Engineering and Technology

Dindigul-Palani Highway, Dindigul - 624 002.
Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai
Accredited by NAAC (2019-2024) & NBA (2022-2025)- ECE, EEE & Mech

Registration Form

Paper ID	NCERI-WWM-15
Title of the Paper	AN OVERVIEW OF WASTE MANAGEMENT IN MADURAI DISTRICT.
Name of the Institution	THIAGARAJAR COLLEGE OF ARTS AND SCIENCE, MADURAI
Authors Details with Designation	1. P.MARI MANJU LAKSHMI -(STUDENT) II - M.A ECONOMICS. 2. 3. 4. 5.
Accommodation	YES / NO
Email ID	marimanjulakshmi@gmail.com
Whats App No	7448476211
Address	8/3, KRISHNA ILLAM, ABIRAMI STREET, NEW VILANGUDI. MADURAI - 625018.

Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal

NATIONAL CONFERENCE AND EXHIBITION ON RURAL INNOVATIONS

March 24 - 25, 2023

Organized by

UNNAT BHARAT ABHIYAN

SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

Dindigul, Tamilnadu

PARTICIPANT NAME LIST

WATER AND WASTE MANAGEMENT

S.No	Author Name	Paper ID	Paper title	Institution Name	Contact number
1	P. MARI MANJU LAKSHMI	NCERI-WWM-15	An overview of waste management in madurai district	Thiagarajar College of Arts and Science	7448476211
2	JANAKI S	NCERI-WWM-11	The study of solid waste management in madurai corporation	THIAGARAJAR ARTS & SCIENCE COLLEGE	6379833611
3	Dr.N.Lavanya	NCERI-WWM-22	A study on agricultural waste management and impacts on agri-production	Sri Sarada College for women(Autonomous)	9488703094
4	PARKAVI K M S	NCERI-WWM-16	Review on water and waste management for environmental sustainability	Sri Sarada College for Women, Tirunelveli	6380075640
5	AKILA .P	NCERI-WWM-24	Role of ngos and cbos in solid waste management in tirunelveli municipality of tamil nadu	Sri Sarada College for Women (Autonomous), Ariyakulam, Tirunelveli, Tamil Nadu	8760708160
6	JAYASHREE. S & Dr. Muthulakshmi R	NCERI -WWM -10	The Awareness About Agricultural waste by using 3R Approches	Sri Sarada College for Women (Autonomous), Tirunelveli-627011	9344449270
7	BOOMIGA R	NCERI-WWM-20	Wastewater management in nochikulam village	SRI SARADA COLLEGE FOR WOMEN (AUTONOMOUS)	8754889240
8	Renga Priyanka R , Subhashini P & Dr. Muthulakshmi R	NCERI -WWM -14	Water and Waste Management	Sri Sarada College for Women (Autonomous), Tirunelveli- 627011	9344449270
9	SIVAPRIYA A	NCERI-WWM-01	Water management in gopalasamudram	SRI SARADA COLLEGE FOR WOMEN (AUTONOMOUS), TIRUNELVELI -11	9788854551
10	DHANASHRI BABU	NCERI-WWM-12	Analysis of problems faced due to open drainage system â	PSG college of Pharmacy	8489787831

Principal

11	Dr.R.Kavitha	NCERI-WWM-19	A Study on Agricultural Water Management in Tirunelveli District	Sri Sarada College for Women(Autonomous),Tirunelveli	9361102749
12	S. Selvalakshmi Meera	NCERI-WWM-04	Water and Waste Management	Sri Sarada College for Women-Tirunelveli	9360382491
13	INDHUMATHI .R.THEVAR	NCERI-WWM-25	Scrutinize of challenges and solutions on water management	Sri Sarada College for Women (Autonomous) Tirunelveli	6383210268
14	PRANESH C , SOWMIYA R, VIDHYA BHARATHI S	NCERI-WWM-08	Experimental study on partial replacement of coarse aggregate by using coconut shell and cement with flyash	VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY, ERODE, TN	8148834962
15	PRANESH C, ARUNRAMANAN V & GUNA T	NCERI-WWM-09	Experimential study on industrial sludge and coconut coir in strengthening of red bricks	Velalar College of Engineering and Technology, Erode, India	8148834962
16	Megavarshini G	NCERI-WWW-28	Crop Yield Prediction using iot	Vivekanandha College of Engineering for Women(Autonomous)	9361259298

RURAL INFRASTRUCTURE

S.No	Author Name	Paper ID	Paper Title	Institution Name	Contact number
1	BOOMIKA M	NCERI-RI-13	TILLAGE SAVIOR	Vivekanandha College of Engineering for Women(Autonomous)	8098220100
2	DEEPAK S	NCERI-RI-21	BLOCKCHAIN BASED INTRUSION DETECTION IN IOT NETWORKS	Anjalai Ammal Mahalingam Engineering College	9486781600
3	MARIA BHARATHI A	NCERI-RI-09	Financial Literacy Level under Rural Infrastructure	SRI SANKARA BHAGAVATHI ARTS AND SCIENCE COLLEGE, KOMMADIKOTTAI	8870891347
4	RAJESWARI T	NCERI-RI-07	Online Banking Service -Rural Infrastructure	SRI SANKARA BHAGAVATHI ARTS & SCIENCE COLLEGE, KOMMADIKOTTAI	9976631819
5	SRI DEVI & DR.	NCERI-RI -06	participatory Technological Outreach	Sri Sarada College for Women (Autonomous), Tirunelveli-627011	9344449270

	MUTHULAKSHMI. R				
6	Dr SUNIL RAJ Y	NCERI-RI-03	Framework for ICT based Physical and Mental Health Monitoring â€“ An Extensive Survey	St Joseph's College (Autonomous), Tiruchirappalli-2	8148115817
7	B.Manoharan	NCERI-RI-19	IOT DEVICES PROXIMITY AUTHENTICATION AND SURVEILLANCE IN INDUSTRIAL NETWORK	Anjalai Ammal Mahalingam Engineering college	6382950251
8	SURYA KUMAR S	NCERI-RI-20	NEURAL NETWORK BASED INTRUSION DETECTION SYSTEM IN IOT ENVIRONMENT	Anjalai Ammal Mahalingam Engineering College	9123554636
9	Dr KAVITHA R	NCERI-RI-08	INFORMATION AND COMMUNICATION TECHNOLOGY FOR RURAL DEVELOPMENT	Sri Sarada College for Women(Autonomous),Tirunelveli	9361102749
10	SORNAM T	NCERI-RI-01	Rural Infrastructure	Sri Sarada College for Women(Autonomous), Tirunelveli-627011	7339110276
11	VIMAL VINISHA S	NCERI-RI-18	SMART HYDROPHONIS IN AGRICULTURE USING IOT	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN, AUTONOMOUS	7339293978
12	CHITRA. D. R	NCERI-RI-30	A Study on the Perceptions of Faculty Members on the Community Engagement Programmes of Higher Education Institutions in Tamil Nadu	Mother Terasa Women's University	8903267827
CAPACITY BUILDING STRATEGIES FOR CONVERGENCE & IMPLEMENTATION					
1	SAKTHIVEL RAMANATHAN, GNANASEKARAN.B.M, GANESHAN.P	NCERI-CBSCI-02	Sustainable Concrete Manhole Cover for Septic Tank Construction	FATIMA MICHAEL COLLEGE OF ENGINEERING AND TECHNOLOGY, MADURAI-20	9092424325
ENVIRONMENT AND SUSTAINABLE RESOURCE MANAGEMENT					
1	Dr. KINJAL V JOSHI	NCERI-ESRM-03	Telemedicine: An Application of Information Technology in Medical Field	G H Patel College of Engineering & Technology	9924692719

2	AISHWARYA A, DR.MUTHULAKSHMI R	NCERI-ESRM-05	Impact of supply chain management on rural sector	Sri Sarada College for Women [Autonomous], Tirunelveli -627011	9344449270
3	JAYASRI.K	NCERI-ESRM-02	A study on Telemedicine for the economic development	Sri Sarada College for Women	8778519738

RURAL ENERGY SYSTEMS

S.No	Author Name	Paper ID	Paper Title	Institution Name	Contact number
1	S SREE SUTHA, P ARUNA	NCERI-RES-10	SENSOR APPLICATION FOR PLANT DISEASE DETECTION USING DEEP LEARNING	Sri Sarada College for Women (Autonomous) Tirunelveli-627011	6379038905
2	SUMATHY S	NCERI-RES-01	Application of sensors in energy system	Sri Sarada College for Women Tirunelveli	8146134347
3	VASUPRADA ADHI SHREE.G	NCERI-RES-11	SCRUTINIZE OF SERVICE LEARNING IN RURAL EDUCATION	SRI SARADA COLLEGE FOR WOMEN (AUTONOMOUS) TIRUNELVELI	7603864200
4	AYSHWARYA DHANA LAKSHMI	NCERI-RES-09	A STUDY ON BIOGAS AND SOLAR ENERGY IN PASTORAL AREA	SRI SARADA COLLEGE FOR WOMEN	6385283766

SANITATION

1	RISHITA . A	NCERI-SA-05	Design and Performance Analysis of Ultraviolet Sterilizer using XT546 Timer	VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN	7598896841
2	SANDEEP K G	NCERI-SA-01	Assessment of Sanitary Practices with Literacy and Poverty Status of Rural Population in Tamil Nadu	PSG COLLEGE OF PHARMACY	9789169594

PRINCIPAL

NATIONAL CONFERENCE AND EXHIBITION
ON
RURAL INNOVATIONS
March 24 - 25, 2023
Organized by
UNNAT BHARAT ABHIYAN
SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY
Dindigul, Tamilnadu

Date / Session / Time : 24.03.2023 / I / 11am to 1pm

Chairperson: Mr. Balasubramanian, Expert in Sustainable Agriculture, Pothigaisolai

Co-Chair: Dr.G.Sankaranarayanan, Head/Mech/SSMIET

Faculty Incharge : Dr.M.Jeyalakshmi,AsP/ECE/SSMIET , Dr.M.Premkumar,AsP/ECE/SSMIET

S.No	Title	Author Name	Institution
1.	Analysis Of Problems Faced Due to Open Drainage System	Dhanashri Babu	PSG College Of Pharmacy
2.	A Study on The Perceptions of Faculty Members on The Community Engagement Programmes of Higher Education Institutions In Tamil Nadu	Chitra. D. R	Mother Terasa Women's University
3.	Rural Infrastructure	Sornam T	Sri Sarada College for Women (Autonomous), Tirunelveli-627011
4.	A Study on Agricultural Waste Management and Impacts on Agri-Production	Dr.N.Lavanya	Sri Sarada College for Women (Autonomous) Ariyakulam, Tirunelveli, Tamil Nadu
5.	An Overview of Waste Management in Madurai District	P. Mari Manju Lakshmi	Thiagarajar College Of Arts and Science
6.	Role Of NGOS AND CBOS in Solid Waste Management in Tirunelveli Municipality Of Tamil Nadu	Akila. P	Sri Sarada College for Women (Autonomous), Ariyakulam, Tirunelveli, Tamil Nadu

Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal

NATIONAL CONFERENCE AND EXHIBITION
ON
RURAL INNOVATIONS
March 24 - 25, 2023
Organized by
UNNAT BHARAT ABHIYAN
SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY
Dindigul, Tamilnadu

Date / Session: 24.03.2023 / II / 2pm to 4pm

Chairperson: Prof. K. Ravichandran,UBA Regional Coordinator, Gandhigram Rural Institute,Dindigul

Co-Chair: Dr.S.Karthigai Lakshmi, Head/ECE/SSMIET

Faculty Incharge : Dr.M.Jeyalakshmi,AsP/ECE/SSMIET , Dr.M.Premkumar,AsP/ECE/SSMIET

S.No	Title	Author Name	Institution
1.	Assessment Of Sanitary Practices with Literacy and Poverty Status of Rural Population in Tamil Nādu	Sandeep K G	PSG College Of Pharmacy
2.	Sustainable Concrete Manhole Covers for Septic Tank Construction	Sakthivel Ramanathan, Gnanasekaran.B.M, Ganeshan.P	Fatima Michael College of Engineering and Technology, Madurai-20
3.	Sensor Application for Plant Disease Detection Using Deep Learning	S Sree Sutha, P Aruna	Sri Sarada College for Women (Autonomous) Tirunelveli-627011
4.	The Study of Solid Waste Management in Madurai Corporation	Janaki S	Thiagarajar Arts & Science College
5.	Application Of Sensors in Energy System	Sumathy S	Sri Sarada College for Women (Autonomous) Tirunelveli-627011
6.	A Study on Biogas and Solar Energy in Pastoral Area	Ayshwarya Dhana Lakshmi	Sri Sarada College for Women

Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
Principal

NATIONAL CONFERENCE AND EXHIBITION
ON
RURAL INNOVATIONS
March 24 - 25, 2023
Organized by
UNNAT BHARAT ABHIYAN
SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY
Dindigul, Tamilnadu

Date / Session / Time: 25.03.2023 / I / 10.30am to 12.30pm

Chairperson: Dr.T.Jayasankar,Senior Assistant Professor

Co-Chair: Dr.G.Mohanbabu, Head/EEE/SSMIET

Faculty Incharge: Dr.M.Jeyalakshmi,AsP/ECE/SSMIET , Dr.M.Premkumar,AsP/ECE/SSMIET

S.No	Title	Author Name	Institution
1.	Smart Hydrophonis in Agriculture Using IOT	Vimal Vinisha S	Vivekanandha College Of Engineering for Women, Autonomous
2.	Experimential Study on Industrial Sludge and Coconut Coir in Strengthening of Red Bricks	Pranesh C, Arunramanan V & Guna T	Velalar College Of Engineering and Technology, Erode, India
3.	Blockchain Based Intrusion Detection in IOT Networks	Deepak S	Anjalai Ammal Mahalingam Engineering College
4.	IOT Devices Proximity Authentication and Surveillance in Industrial Network	B.Manoharan	Anjalai Ammal Mahalingam Engineering College
5.	Neural Network Based Intrusion Detection System in IOT Environment	Surya Kumar S	Anjalai Ammal Mahalingam Engineering College
6.	Experimental Study on Partial Replacement Of Coarse Aggregate By Using Coconut Shell And Cement With Flyash	Pranesh C, Sowmiya R, Vidhya Bharathi S	Velalar College Of Engineering and Technology, Erode, Tn

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Date / Session / Time: 25.03.2023 / II / 1.30pm to 3.30pm

Chairperson: Mrs. Uma Chandrika, Assistant Director (Chemical), MSME Madurai

Co-Chair: Dr.C.Sujatha, Head/ CSE /SSMIET

Faculty Incharge : Dr.M.Jeyalakshmi,AsP/ECE/SSMIET , Dr.M.Premkumar,AsP/ECE/SSMIET

S.No	Title	Author Name	Institution
1.	Crop Yield Prediction Using IOT	Megavarshini G	Vivekanandha College Of Engineering for Women (Autonomous)
2.	Design And Performance Analysis of Ultraviolet Sterilizer Using XT546 Timer	Rishita. A	Vivekanandha College Of Engineering for Women (Autonomous)
3.	Tillage Savior	Boomika M	Vivekanandha College Of Engineering for Women (Autonomous)
4.	A Study of Milk and Ghee Adulteration and Method of Detection of Various Chemicals Adulterants Qualitatively	Sakthivel K	SSM College Of Arts and Science
5.	Smart Water Management System in Urban Areas Using Lora Technology	R.Sneka ,M.Shobana	SSM Institute of Engineering & Technology
6.	Survey On Health Care in Rural India	Revathy.S , Ruthra Sivaguru.K	SSM Institute of Engineering & Technology

PRINCIPAL
Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)

SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY, DINDIGUL

NATIONAL CONFERENCE AND EXHIBITION ON RURAL INNOVATIONS

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TECHNICAL SESSION REPORT

SESSION I

Chairperson : **Mr.Balasubramanian**, Expert in Sustainable Agriculture, Pothigaisolai
Co-Chair: **Dr.G. Sankaranarayanan** , Head/ Mech / SSMIET.

1.Analysis Of Problems Faced Due toOpen Drainage System

Author Details: Dhanashri Babu, S.Pranesh, Dr.S.Lavanya, Dr.Prudence A Rodrigues
PSG College Of Pharmacy

This paper identifies the problems related to open drainage system and methods to improve the quality of life for the inhabitants by resolving the issues caused due to open drainage system. It also explains the health hazards to the population, if the open drains are left unchecked. Some of the key points are

Key points taken

- Water-borne illness and infections due to lot of wastewater have been discussed.
- Discussed about the Contamination of domestic water due to **Open Drainage System.**
- It also explains the dangers associated with open drains and possible solutions.
- Health issues related to open drainages like exposure to agrochemicals, fecal waste, and water-related borne diseases are discussed.

Suggestions from experts

- **Statistical data collection** from Municipalities or online for identifying any problems should be from **recent past years** so that accuracy of prediction of problems could be clear and understandable for writing a proposal to Government schemes .
- Prediction of diseases due to open drainage systems should be clearly identified and discussed.
- Students should be encouraged to actively participate in survey of village problems in order to rectify the problems.

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2. Rural Infrastructure

Author Details: Sornam T
Sri Sarada College for Women (Autonomous) Tirunelveli

This paper discuss about the development of rural areas in terms of their education, transport, drinking water, electricity/energy, sanitation, health, housing. Several central government schemes have been discussed which is used for the development of students life style in rural areas. Here are some key learning from the topic:

Key points taken

Rural development schemes like Ayushman Bharat Digital Mission helps to provide healthcare infrastructure Ayushman Bharat Digital Mission will connect the digital health solutions of hospitals across the country with each other.

The Mission will not only make the processes of hospitals simplified but also will increase ease of living. The Digital Ecosystem will also enable a host of other facilities like Digital Consultation, Consent of patients in letting medical practitioners access their records.

Ayushman Bharat Health Account achieving safer and more efficient health data access

To improve the implementation efficiency of the social security services for the unorganized workers and integration of Social Security Schemes meant for UWs being administered by MoLE and subsequently those run by other ministries as well

Overall, the benefit of all central government rural development scemes have beed discussed.

3. **A Study on Agricultural Waste Management and Impacts on Agri-Production**

Author Details: Dr.N.Lavanya, K.Krishnaveni

Sri Sarada College for Women(Autonomous) Ariyakulam, Tirunelveli, Tamil Nadu

These work insights into usage of Agriculture waste and how it has been used effectively Agriculture produces organic wastes and byproducts that almost always contain all of the necessary plant nutrients. Here are some key learning points from the topic:

Key points taken

Agricultural waste is any substance produced during the growing of crops or other plants. Using agricultural waste is a major challenge, especially in light of the estimated global energy demand gap. This biomass and agricultural waste was either burned or spontaneously transformed into organic fertilizer.

Due to its high potential for energy conversion, biomass made from agricultural waste is being employed to create electricity some of these crops may compete with traditional crops for

land and other resources, while others may be cultivated on marginal soils or even in ecologically degraded areas, which would benefit the environment.

Overall, this paper provides useful insights into waste management from agriculture and proper waste utilization that will assist in developing our agricultural sector.

4. An Overview of Waste Management in Madurai District

Author Details: P. Mari ManjuLakshmi
Thiagarajar College Of Arts andScience

This paper review about the different methods of waste Manaagement in order to protect from harmful disease and creating awareness among women through Intensive questionnaire survey that was made to assess the knowledge of rural women population in 15 villages of three blocks. Some of the key points are

Key points taken

From this study, the targeted rural SHG women of Madurai district have improved their knowledge on importance of water, scope and demand of water, rainwater harvesting and hygienic practices in water usage.

It was also revealed that the rural SHG women have raised to 80% from 50% in their Eco-WaSH literacy level. The targeted women was also benefitted due to the recycling of liquid waste and its utilization for kitchen gardening and thereby improving their economic level.

5. Role of NGOS AND CBOS in SolidWaste Management in Tirunelveli Municipality Of Tamil Nadu

Author Details: Akila. P
Sri Sarada College for Women (Autonomous) Tirunelveli

This work assesses the scenario of municipal solid waste management in Tirunelveli municipality and the role NGOs/CBOs play in its effective management.

Key points taken

A Public awareness have been created and enlisting their support, along with NGOs/CBOs initiatives, which is crucial for effective solid waste management.

Method of producing organic manure from the vast amount of organic biodegradable trash (70%) that could be utilized for organic farming have been discussed.

Suggestions

- For the paper "**Role of NGOS AND CBOS in Solid Waste Management in Tirunelveli Municipality Of Tamil Nadu**" the chair person recommended this team to in connect with NGO's through various awareness program

- Field visit is essential for studying the problems in villages clearly.

Overall Suggestions

- **Statistical data collection** from Municipalities or online for identifying any problems should be from **recent past years** so that accuracy of prediction of problems could be clear and understandable for writing a proposal to Government schemes .

- **Quality of academic programmes** and **research activities** related to **rural culture** should be felicitated to the students community through UBA schemes .

- The development of rural area is the development of economical level in the society. At Institutional level, **student Projects solving the rural people problems** should be concentrated so that it could uplift the level of people in villages.

Faculty Incharge

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TECHNICAL SESSION REPORT

SESSION II

Chairperson : Prof. **K.Ravichandran**, UBA Regional Coordinator, Gandhigram Rural Institute, Dindigul

Co-Chair : **Dr.S.Karthigai Lakshmi,** Head/ECE, SSM Institute of Engineering and Technology, Dindigul.

1. Assessment of Sanitary Practices with Literacy and Poverty Status of Rural Population in Tamilnadu

Author Details: S. Lavanya, Prudence A Rodrigues, Sandeep K G, R. Jenose Asmila, D. Dheepthi , A. Preethi Nivedhaa

Department of Pharmacy Practice, PSG College of Pharmacy, Coimbatore, Tamil Nadu, India.

Takeaway points

This project provides important insights into the sanitation practices of rural communities in Tamil Nadu and the impact of literacy and poverty on these practices. Here is some key learning from the topic:

- Open defecation is still prevalent in rural areas of Tamil Nadu: Despite efforts by the government and various organizations, open defecation remains a significant problem in many rural communities in Tamil Nadu. This is due to various factors such as lack of access to toilets, poverty, and lack of awareness about the importance of good sanitation practices.
- Education plays a crucial role in improving sanitation practices: The study highlights the positive correlation between literacy and good sanitation practices. Educated individuals are more likely to adopt good hygiene practices, such as using toilets, washing hands regularly, and disposing of waste properly.
- Poverty is a significant barrier to improving sanitation practices: Poverty is a major barrier to improving sanitation practices in rural communities. Poor households often lack the resources to build toilets or access safe water and sanitation facilities. Therefore, addressing poverty is a critical step in improving sanitation practices.
- Community engagement is the key to improving sanitation practices: The study highlights the importance of involving communities in the design and implementation of sanitation programs. Engaging communities and empowering them to take ownership of their sanitation facilities can lead to better outcomes and sustainability of sanitation practices.

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- Multidisciplinary approaches are needed to improve sanitation practices: Improving sanitation practices requires a multidisciplinary approach that involves collaboration between government agencies, non-governmental organizations, and other stakeholders. Such an approach should include education, infrastructure development, and community engagement.

Overall, the topic highlights the urgent need to improve sanitation practices in rural areas of Tamil Nadu and the importance of addressing poverty and promoting education to achieve this goal. It also underscores the need for multidisciplinary approaches and community engagement to ensure sustainability and long-term impact.

2. Sustainable Concrete Manhole Covers for Septic Tank Construction

CE

Author Details: Sakthivel Ramanathan, Gnanasekaran.B.M,Ganeshan.P
Fatima Michael College of Engineering and Technology, Madurai

Takeaway points

This topic provides important insights into sustainable construction practices for septic tank systems. Here is some key learning from the topic:

- Traditional septic tank systems often use non-sustainable materials for manhole covers, such as plastic or metal, which can have negative environmental impacts.
- Sustainable materials, such as concrete, can be used for manhole covers: The topic highlights the use of sustainable materials, such as concrete, for manhole covers in septic tank systems. Concrete is a durable, low-maintenance material that can be produced sustainably.
- Precast concrete manhole covers are a sustainable option for septic tank systems because they can be produced off-site, reducing waste and minimizing the environmental impact of production.
- Sustainable manhole covers, such as those made of concrete, can improve the durability and safety of septic tank systems by providing a sturdy cover that can withstand heavy loads and prevent unauthorized access.
- Implementing sustainable septic tank systems, including the use of sustainable manhole covers, can have positive environmental and social impacts. Sustainable systems can reduce the risk of groundwater contamination and promote safe sanitation practices, while also creating local employment opportunities.

Overall, the topic highlights the importance of sustainable construction practices in septic tank systems and the potential benefits of using sustainable materials, such as concrete, for manhole covers. It also underscores the need for more sustainable practices in the construction industry to reduce environmental impacts and promote social and economic sustainability.

3. Sensor Application for Plant Disease Detection Using Deep Learning

ECE / CSE

Author Details: S Sree Sutha, P Aruna
Sri Sarada College for Women (Autonomous) Tirunelveli

Takeaway points

From this work, we can learn about the following:

- Detecting plant diseases is crucial for improving crop yields, reducing food losses, and ensuring food security.
- The use of sensors, such as cameras and spectral sensors can help in the early detection of plant diseases.
- Here the deep learning algorithms, specifically neural networks, are increasingly being used for plant disease detection using sensor data.
- Image-based detection involves taking images of plant leaves and using deep learning algorithms to identify the presence of disease.
- Spectral sensors measure the reflectance or absorbance of light by plants in different wavelengths, providing information about plant health and disease.
- The use of sensor-based detection and deep learning algorithms can help in quick and accurate detection of plant diseases.
- Early detection of plant diseases can help in preventing crop losses and reducing the need for harmful pesticides.

Overall, the use of sensor-based detection and deep learning techniques for plant disease detection has the potential to transform agriculture and improve food security.

4. The Study of Solid Waste Management in Madurai Corporation

Author Details: Janaki S
Thiagarajar Arts & Science College, Madurai

Takeaway points

This study provides insights into how solid waste is managed in the city of Madurai in India. Some of the key findings and recommendations from the study may include:

- Assessment of the quantity and composition of solid waste generated in Madurai, including the types of waste generated by households, commercial establishments, and industries.
- Analysis of the existing solid waste management system in Madurai, including the collection, transportation, processing, and disposal of waste.
- Identification of the key challenges faced by the Madurai Corporation in managing solid waste, such as inadequate infrastructure, lack of public awareness and participation, and insufficient funding.
- Recommendations for improving the solid waste management system in Madurai, such as increasing the frequency of waste collection, promoting waste segregation at source,

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SSM Institute of Engineering and Technology

setting up decentralized waste processing facilities, and involving the private sector in waste management activities.

- Analysis of the environmental and health impacts of improper solid waste management in Madurai, and the need for sustainable and environmentally-friendly waste management practices.

Overall, the study can provide useful insights for policymakers, waste management officials, and other stakeholders in Madurai and other cities facing similar challenges in managing solid waste.

5. Application of Sensors in Energy System

Author Details: Sumathy S
Sri Sarada College for Women (Autonomous) Tirunelveli

ME
VK

Takeaway points

From the above search, we can learn about the various applications of sensors in energy systems. Some of the key takeaways are:

- Sensors are crucial components in modern energy systems, and they play a critical role in improving efficiency, safety, and reliability.
- Sensors are used in various applications, such as power generation, renewable energy, energy storage, energy distribution, and energy consumption.
- In power generation, sensors are used to monitor and control various parameters such as temperature, pressure, flow rate, and vibration.
- In renewable energy systems such as wind turbines, solar panels, and hydroelectric power plants, sensors help to monitor wind speed, solar radiation, water level, and other parameters, leading to efficient power generation and ensuring safety and reliability.
- In energy storage systems such as batteries, flywheels, and capacitors, sensors monitor the state of charge, temperature, and other parameters, leading to optimized storage and discharge of energy and longer life of the storage system.
- In energy distribution, sensors monitor voltage, current, and power flow, helping to detect faults and improve efficiency and reliability.
- In energy consumption, sensors monitor energy usage in buildings, factories, and other facilities, helping to identify energy wastage and optimize energy usage, leading to cost savings and reduced environmental impact.

Overall, the use of sensors in energy systems is critical to ensuring efficient, safe, and reliable energy production, transmission, and consumption, and to meet the growing demand for sustainable energy solutions.

6. **A Study on Biogas and Solar Energy in Pastoral Area**

Author Details: Ayshwarya Dhana Lakshmi
Sri Sarada College for Women (Autonomous) Tirunelveli

Takeaway points

Here are some takeaway points from this topic is

- Biogas and solar energy have the potential to provide sustainable and clean energy solutions to pastoral communities.
- Biogas is produced from the decomposition of organic waste, and solar energy is produced by harnessing the energy from the sun through solar panels.
- A study on the feasibility of implementing biogas and solar energy systems in pastoral areas would involve assessing the availability of organic waste and solar resources in the area, evaluating the technical and economic viability of these systems, and considering the social and cultural context of the pastoral community.
- Community engagement and education are crucial in ensuring the successful implementation and sustainability of these systems.
- The implementation of biogas and solar energy systems in pastoral areas can significantly improve the standard of living in these communities, by providing a reliable and affordable source of energy for cooking, heating, lighting, and water pumps.

Suggestions

- For the paper "Sensor Application for Plant Disease Detection Using Deep Learning" the chair person recommended this team to participate in IIT, Delhi.
- Also suggested the students to work in new technology based Agriculture projects for rural people.
- Field visit is essential for studying the problems in villages clearly.

Follow up plans

- Formation of a committee that involves various stakeholders in identifying issues requiring intervention by higher education institutions.
- Development of an action plan for the adopted village in collaboration with Central and State Government organizations.
- State-level planning for rural development by incorporating all the UBA institutes.
- Adoption of a cluster-based approach for village development.
- Encouraging students to work on rural issues as a part of UG and PG projects.

Faculty Incharge

Principal

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NATIONAL CONFERENCE AND EXHIBITION ON RURAL INNOVATIONS

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TECHNICAL SESSION REPORT

SESSION III

Chairperson : **Dr.T.Jayasankar**, Senior Assistant Professor, Anna University, Trichy

Co-Chair : **Dr.G Mohanbabu**, Head/EEE, SSM Institute of Engineering and Technology, Dindigul.

1. Smart Hydrophonis in Agriculture using IOT

EEE / ME

Author Details: Vimal Vinisha S

Vivekanandha College of Engineering for Women (Autonomous), Thiruchengode

Takeaway points

Here are some key ways in which IoT is being used in smart hydroponics for agriculture:

- IoT sensors can be used to monitor key environmental factors such as temperature, humidity, pH levels, and nutrient levels. By collecting and analyzing data from these sensors, farmers can optimize plant growth and yield, while reducing water and fertilizer use.
- Smart hydroponics systems can be automated using IoT devices such as actuators, pumps, and valves. These devices can adjust environmental factors in real-time based on the data collected by sensors, ensuring that plants receive the optimal conditions for growth.
- With cloud-based data analytics, farmers can remotely monitor and control their smart hydroponics systems from anywhere in the world. This enables farmers to respond to issues quickly and efficiently, reducing the risk of crop failure.
- Smart hydroponics systems enable farmers to practice precision agriculture, which involves tailoring crop management practices to specific plant needs. This can improve crop yields, reduce waste, and lower the environmental impact of farming.

Overall, smart hydroponics using IoT has the potential to revolutionize the way we grow food, making agriculture more sustainable and efficient. By using sensors, automated systems, and cloud-based data analytics, farmers can optimize plant growth and yield, while minimizing resource use and environmental impact.

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2. Experimental Study on Industrial Sludge and Coconut Coir in Strengthening of Red Bricks

Author Details: Pranesh C, Arunramanan V & Guna T
Velalar College of Engineering and Technology, Erode, India

CE

Takeaway points

An experimental study on industrial sludge and coconut coir in the strengthening of red bricks could yield a range of observations, including:

- The physical and mechanical properties of the bricks can be improved by incorporating industrial sludge and coconut coir in varying proportions.
- The optimal mix ratio of industrial sludge and coconut coir can depend on factors such as the type and quality of the materials, the production process, and the desired properties of the bricks.
- The inclusion of industrial sludge and coconut coir can increase the water absorption of the bricks, which may affect their performance in certain applications.
- The strength and durability of the bricks can be influenced by the manufacturing process, including the mixing, molding, and drying conditions.
- The compressive strength and density of the bricks can be affected by the type and quality of the red clay used.
- The use of industrial sludge and coconut coir in the production of red bricks can provide a sustainable solution for the reuse of industrial waste and contribute to the development of eco-friendly building materials.

Overall, an experimental study on industrial sludge and coconut coir in the strengthening of red bricks can provide valuable observations on the properties and behavior of different materials and their interactions in building materials. These observations can contribute to the development of more sustainable and efficient building practices.

3. Blockchain Based Intrusion Detection in IOT Networks

Author Details: Deepak S
Anjalai Ammal Mahalingam Engineering College, Thiruvarur.

ECE

Takeaway points

The use of blockchain technology in intrusion detection systems (IDS) for Internet of Things (IoT) networks can bring about several benefits. Here are some observations from an article on blockchain-based intrusion detection in IoT networks:

- Blockchain technology can enhance the security of IoT networks by providing a decentralized and tamper-proof database for storing security-related data.
- The use of blockchain can prevent the manipulation of data by attackers, as any alteration of data would require consensus from the network participants.
- Blockchain-based IDS can provide more accurate and timely detection of intrusions by enabling real-time sharing of threat intelligence among network nodes.

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Principal

- The decentralized nature of blockchain can reduce the reliance on centralized security authorities, which can be vulnerable to attacks and single points of failure.
- The use of smart contracts in blockchain-based IDS can automate the response to detected threats, increasing the speed and efficiency of incident response.
- The integration of blockchain-based IDS with other security technologies, such as machine learning and artificial intelligence, can enhance the accuracy and effectiveness of intrusion detection.

For improving intrusion detection in IoT using blockchain technology requires addressing technical, privacy, regulatory, and legal challenges. Developing standardized protocols, enhancing scalability, improving data privacy, developing smart contract templates, integrating with other security technologies, and addressing regulatory and legal challenges can help accelerate the adoption and effectiveness of blockchain-based IDS for IoT networks.

4. IOT Devices Proximity Authentication and Surveillance in Industrial Network

Author Details: Manoharan B
Anjalai Ammal Mahalingam Engineering College, Thiruvarur.

CSE

Takeaway points

Here are some key learnings from proximity authentication and surveillance in industrial networks using IoT devices:

- The proximity authentication and surveillance using IoT devices can improve security and safety in industrial settings by providing real-time monitoring, reducing the risk of unauthorized access and security breaches, and enabling timely detection and response to safety hazards and potential accidents.
- The use of IoT devices for proximity authentication and surveillance can reduce the need for physical security personnel and equipment, resulting in cost savings for industrial organizations.
- The data generated by IoT devices can be analyzed to identify trends, optimize operations, and improve decision-making in industrial settings.
- The integration of IoT devices with existing industrial systems and networks can be challenging, and ensuring interoperability is crucial for successful deployment.
- The security of IoT devices and networks is a critical concern, and appropriate measures must be taken to ensure the confidentiality, integrity, and availability of data.
- The use of IoT devices for surveillance raises concerns about data privacy, and measures must be taken to ensure compliance with relevant regulations and standards.

Overall, the use of IoT devices for proximity authentication and surveillance in industrial networks has the potential to bring about significant benefits, but also requires careful consideration of technical, security, and privacy challenges.

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5. Neural Network Based Intrusion Detection System in IOT Environment

Author Details: Surya Kumar S
Anjalai Ammal Mahalingam Engineering College, Thiruvarur.

ECE

Takeaway points

Here are some key takeaways from a neural network-based intrusion detection system (IDS) in an IoT environment:

- Using neural network-based IDS can improve the accuracy of intrusion detection in IoT environments, reducing the risk of false positives and false negatives.
- Neural network-based IDS can provide real-time monitoring of network traffic, enabling timely detection and response to security threats.
- Neural network-based IDS can automate the intrusion detection process, reducing the need for human intervention and freeing up security personnel for other tasks.
- Neural networks can be trained on large datasets and are scalable, making them suitable for deployment in IoT environments with a large number of devices and data streams.
- Neural networks can adapt to changes in the network environment and can learn from new data, making them well-suited for dynamic IoT environments.
- Neural network-based IDS can detect advanced and sophisticated security threats that may be missed by traditional signature-based IDS.
- There are challenges associated with deploying neural network-based IDS in an IoT environment, such as addressing data privacy and network security concerns, and ensuring explainability of the decision-making process of the neural network.

Overall, neural network-based IDS can bring about significant improvements in the accuracy, scalability, and efficiency of intrusion detection in an IoT environment. However, it is important to carefully consider potential challenges and ensure appropriate measures are taken to address them.

6. Experimental Study on Partial Replacement of Coarse Aggregate by using Coconut Shell and Cement with Flyash

CE

Author Details: Pranesh C, Sowmiya R, Vidhya Bharathi S
Velalar College of Engineering and Technology, Erode.

Takeaway points

Here are some key learnings from the experimental study on partial replacement of coarse aggregate by using coconut shell and cement with fly ash:

- Coconut shell can be used as a partial replacement for coarse aggregate in concrete production, which can contribute to the conservation of natural resources and reduce waste.
- Fly ash can be used as a partial replacement for cement in concrete production, which can reduce the demand for cement and its associated carbon emissions.
- The combination of coconut shell and fly ash as partial replacements can produce concrete with enhanced mechanical properties and improved sustainability, as well as reduced production costs.
- The optimal combination of coconut shell and fly ash replacements can vary depending on the specific requirements and intended application of the concrete.
- The use of locally sourced and waste materials can contribute to sustainable and environmentally friendly concrete production.

Overall, the study demonstrates the potential of using alternative materials such as coconut shell and fly ash as partial replacements in concrete production to improve its sustainability and reduce its environmental impact.

Suggestions

- Optimized water supply is essential besides vast agricultural land.
- Block chain technology could be explored in a wider way for doing student projects.
- Proposals or Projects related to authentication and security of Information to be transferred through IOT module is to be ensured.
- Machine learning/Deep learning technology for agriculture crop yield prediction should be done in detail. Also it could be extended to other activities of agriculture.

Follow up plans

- Formation of a committee that involves various stakeholders in identifying issues requiring intervention by higher education institutions.
- Development of an action plan for the adopted village in collaboration with Central and State Government organizations.
- State-level planning for rural development by incorporating all the UBA institutes.
- Adoption of a cluster-based approach for village development.
- Encouraging students to work on rural issues as a part of UG and PG projects.

Faculty Incharge

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TECHNICAL SESSION REPORT

SESSION IV

Chairperson : **Mrs. Uma Chandrika**, Assistant Director (Chemical), MSME Madurai
Co-Chair : **Dr.C.Sujatha,** Head/CSE, SSM Institute of Engineering and Technology, Dindigul.

1. **Crop Yield Prediction Using IOT**
   Author Details: Dr. P. T. Kalaivannia, Gowsalya. L , Jeevithra. J , Megavarshini. G , Monisha. N, Megavarshini G , Vivekanandha College Of Engineering for Women (Autonomous)

Key points taken

This paper proposes an IoT-based crop yield prediction system using Machine Learning techniques. Various factors like humidity, temperature, soil etc. are under monitor condition and that provides a crystal-clear real-time observation. Implementing Machine learning algorithms in agriculture is used to predict the productivity and quality of the crops in the agriculture sector. Here is some key learning from the topic:

- Machine learning algorithms like Bagged Tree Classifier, Decision Tree and Naïve Bayesian are used to predict the yield of crops based on the parameters like crop yield, area, seasons, humidity, temperature, and pH. The system includes a network of sensors to collect real-time data such as soil moisture, temperature, humidity, and sunlight, which are then fed to the Machine Learning model for crop yield prediction.
- To enhance the yield, this system also includes crop recommendation, pesticide recommendation and weather forecasting. The proposed system seems to improve crop yield and reduce the risk of crop failure, thereby increasing the profitability of farmers.
- Monitoring system is implemented first using IoT and then Prediction system using ML is implemented next in this project.

On the whole, crop yield prediction in Agriculture could be enhanced using the integrated technology of IOT and Machine learning. This method offers better accuracy at a lower computational cost.

Suggestions from Expert

The experts suggested this work to be analyzed in detail and asked to attend in National and International Conferences .This would take this work to the next level and apply for Government Proposals.

2. Design and Performance Analysis of Ultraviolet Sterilizer Using XT546 Timer

Author Details : G. Rajeswari, A. Rishita, J. Yeshwanthini, K. Sathiya, N. Mounika
Vivekanandha College OfEngineering for Women (Autonomous)

Key points taken

This topic provides important insights into the usage of UV-C , the best disinfectant used for purifying water, and air, sterilizing vegetables and surgical equipment and it suppresses the immunity of pathogens. Here are some key learning from the topic:

- Two 275nm UV-C LED arrays, each of 14.4watt power is placed inside a stainless-steel box and an XT546 Timer with a dual 3-digit, 7-segment display is used for displaying the time.
- UV-C LED is chosen over UV incandescent lamps because of the absence of mercury in UV-C LED. The UV Sterilizer is housed in a stainless-steel box, with two 14.4watt power UV-C LED arrays. Stainless steel is used for better reflection. The switch is placed on the front side wall of box, so that the switch will be operating in ON and OFF condition of the LED.
- To protect the human-beings from accidental UV exposure while opening the lid during its operation, a safety switch is incorporated here to prompt the microcontroller in the timer to cut off the radiation.

Suggestions from Experts

- Cost of product should be considered since the product should reach the village people at low cost.
- Also awareness should be created regarding the harmful effects of UV rays.

3. Tillage Savior

Author Details : Boomika M
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Multi-robot systems and collaborative approaches are discussed in this paper. Especially, swarm robotics features are discussed which gives an advance method with minimum man power and labour. Some of the key points are,

Key points taken

- The main motive of this project is to make awareness that "EVERYONE CAN DO FARMING", to make agriculture more comfortable to everyone.

Dr.D.SENTHIL KUMARAN, M.E., Ph.D., (NUS)
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- Agribot can be controlled using a technology named LORA (Long Range) in IOT. LORA is used to transmit data to a long range without any loss.
- LoRa is suitable for rural use due to its long range. In urban areas, where signals have to penetrate floors and walls, LoRa is suitable. Among its application areas are smart cities, smart homes and buildings, smart agriculture, smart metering, and smart supply chain and logistics.
- Since LoRa is bidirectional, applications can benefit from **command-and-control** functionality. Uplink can be used for continuous monitoring and downlink can be used for controlling the device.
- LoRa when combined with Wi-Fi can optimize a number of IoT use cases. For example, asset tracking, location services and on-demand streaming can be improved.

Overall,

LoRa is a wireless modulation technique from Chirp Spread Spectrum (CSS) technology. It encodes information on radio waves using chirp pulses - similar to the way dolphins and bats communicate. LoRa modulated transmission is robust against disturbances and can be received across great distances.

All such features make LoRa attractive for long range communication and for agriculture purposes.

4. A Study of Milk and Ghee Adulteration and Method of Detection of Various Chemicals Adulterants Qualitatively

Author Details : **Sakthivel K**

SSM College Of Arts and Science

This work gives a comprehensive review of the common Adulterant added in milk and ghee along with the various methods of detection quantitatively. Adulteration of ghee is more common malpractice in India because it will fetch more profit to the traders and also result into increased supply and it can start at the stage of milk itself. This work gives a clear view of the quality of milk and ghee. Some of the key points are

Key points taken

Overview of Food law are discussed.

- Food law shall be based on risk analysis where it is possible.
- Precautionary principle: Where after risk and uncertainty persists, provisional risk management measures may be taken to ensure a high level of health protection, until more scientific information is available.
- Consumers' interests will be protected.

Also discussed about the Material and methods of food collection and detection of adulterants in food items.

Overall, this analysis is carried out to bring awareness to the public about the malpractices in milk production and their health hazards. The ghee adulteration, is a serious problem in recent times, that doesn't even spare the food of infants. A report states that 80 percent of premature deaths are caused by contaminated water and food. Governments should take strict actions against the ones who practice this inhuman thing. The lack of awareness of this adulteration among people is the chance for a person who does adulteration, so the public should also be aware of this type of Malpractice.

5 . Smart Water Management System inUrban Areas Using Lora Technology

Author Details : R.Sneka ,M.Shobana

SSM Institute of Engineering &Technology

These work insights into usage of extraordinary performance of LoRa (Long Range) Technology for effective water management system in urban areas. From the discussion , it is understood that it enables the central water systems to manage the resources through a smart and automated system. The residential areas and institutions will be installed with sensors and connected through LoRa based home gateways or public LoRa WAN network. Some of the key points are

Key points taken

The water management system consists of a control unit, a LoRa gateway, a cloud-based server, and a mobile application. This system can be used in urban areas where the smart water meter can be installed in residential buildings.

Here the cloud-based server acts as a centralized server that will be accessible by the central authorities only. The server then communicates with the mobile application to notify the user based on the water usage he/she has used in his/her house.

Here only 1 node is chosen and implemented in the system. Hence, the data of only 1 house is considered. A house can act as a node. The gateway comprises a Raspberry pi model 2B, which is configured to use SPI communication protocol to communicate with the HPD13A LoRa module which is based on Semtech's SX1276 transceiver; the gateway is being provided with internet connection via Ethernet.

Overall, the received signal strength indicator (RSSI) value tested on the LoRa modules were found to be dependent on the antenna parameters such as distance between transmitter-receiver, obstructions encountered if any, and transmitter power. The gateway requires stable internet connectivity for reliable data delivery to the TTN server. The TTN server works in sync with the Tago.IO server to store the received sensor data that can be analyzed in detail, and further insights can be sent to the end user depending upon the set program conditions and thresholds. The LoRa module successfully transmits data to the gateway in its line of sight.

6 . Survey on Health Care in RuralIndia

Author Details : Revathy.S , RuthraSivaguru.K

SSM Institute of Engineering &Technology

These paper insights into declaration of primary health care in rural which is a vital need and basic requirement as well. It is also recommended to know the actual requirement of the health society in both rural and city sides through statistical study. Both central and state government should reduce the gap between the actual number of available health centers and required number of health centers in country. Implementing heath centers for mental illness also takes same weightage as the physical one. Some of the key points are

Key points taken

Factors affecting the Physical health and Mental health are discussed.

Also the National Institute of Health shows that yoga supports stress management, mental health, healthy eating, mindfulness, weight loss and quality sleep. There are many types of yoga postures and every sign defines a specific healing process.

Also it is discussed that even though these health things are managed by many organizations worldwide, we have the serious responsibility of taking care of ourselves and the people we have around. Each and every life in this world is very important and only a healthy environment of today can create a healthy tomorrow.

Overall, the Primary Health Care was envisaged to provide an integrated curative and preventive health care to the rural population with emphasis on preventive and promotive aspects of health care.

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Certificate

This is to certify that Prof./~~Dr~~. Senthil Kumar. R., Department of ECE, SSM Institute of Engg. & Tech. presented a paper on Automatic solar Power Multipurpose agriculture Rover using LORA in the **NATIONAL CONFERENCE AND EXHIBITION ON RURAL INNOVATIONS (NCERI-23)** Organized by Unnat Bharat Abhiyan SSM Institute of Engineering and Technology, Dindigul on 24th and 25th March 2023.

SSM Institute of Engineering and Technology DINDIGUL-624 002

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SSMIET/216/March/2023

Date: 25.03. 2023

திண்டுக்கல், SSM பொறியியல் கல்லூரியில் உன்னத் பாரத் அபியான் சார்பில் SSM கல்லூரியின் முதல்வர் முனைவர் D. செந்தில் குமரன் தலைமையில் தேசிய அளவிலான கருத்தரங்கம் மற்றும் ஊரக வளர்ச்சிக்கான கண்காட்சி மார்ச் 24 மற்றும் 25 ஆகிய தேதிகளில் நடைபெற்றது. இவ்விழாவில் சிறப்பு விருந்தினர்களாக Maxelarator Foundation, மதுரை நிறுவனர் திரு. நானுசாமி மற்றும் திருமதி நவீனா நானுசாமி, UBA மண்டல ஒருங்கிணைப்பாளர் முனைவர் K. ரவிச்சந்திரன் கலந்து கொண்டனர். விழாவில், கிராமப்புற ஊரக வளர்ச்சித் திட்டங்கள் குறித்து பல்வேறு தலைப்புகளில் கருத்தரங்க விவாதம் மற்றும் கண்காட்சி நடைபெற்றது. இவ்விழாவில் பல்வேறு கிராமப்பற மக்கள் மற்றும் கல்லூரி மாணவர்கள் பங்கேற்று பயன்பெற்றனர். MSME – DFO மதுரையின் உதவி இயக்குநர், உமா சந்திரிக்கா அவர்கள் கருத்தரங்கம் நிறைவு விழாவில் பங்கேற்று சிறப்புரை ஆற்றினார். நிகழ்ச்சி ஏற்பாட்டினை பேராசிரியர்கள் K.வினோத்குமார், R.செந்தில்குமார் மற்றும் C.சிலம்பரசன் ஆகியோர் செய்தனர்.

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