Sree Vidyanikethan Engineering College
(Autonomous)
Sainath Nagar – 517 102, TIRUPATI

Proceedings of

AICTE Sponsored Two days seminar on "Research issues on Nano-Particles and Nano-Bio Sensor in Agriculture"

24th and 25th of Nov' 2017

Organized by

Department of Electronics and Communication Engineering

SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)
A. Rangampet, Near Tirupati - 517 102 (A.P), INDIA
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www.vidyanikethan.edu

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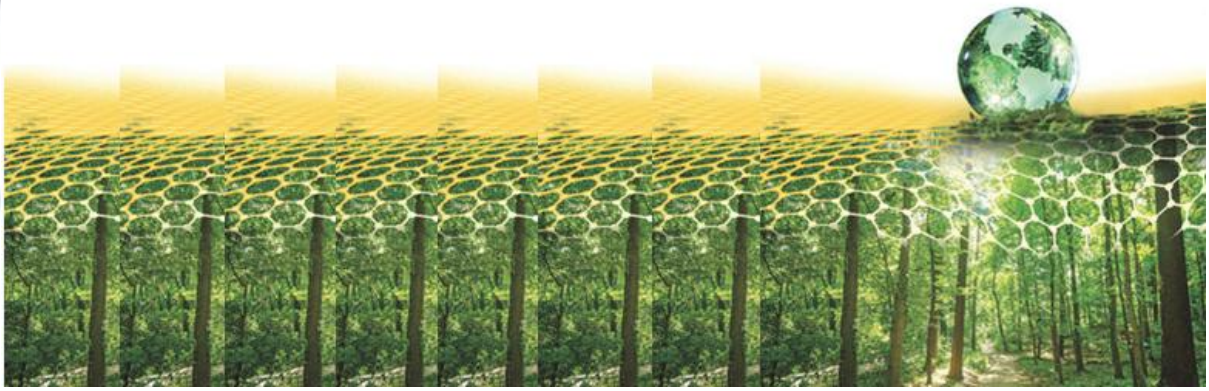


CONTENTS

Introduction

Emerging nanotechnologies could provide potentially substantial benefits in various sectors, including food, water and agriculture. New tools includes emerging applications such as water purification systems, rapid pathogen and chemical contaminant detection systems and nano-enabled renewable energy technologies. The challenges in food safety and food security that countries are facing today – in particular developing countries pertaining to sustainable agricultural development are needed to be addressed now with new nano tools.

Research and development in nanoscience and nanotechnologies have been growing in the public and private sectors in both developed and developing countries. It is becoming clear that in order to achieve the expected goals promised by nanotechnologies, the world community must ensure that direct, forthright global governance of these technologies is to be addressed.

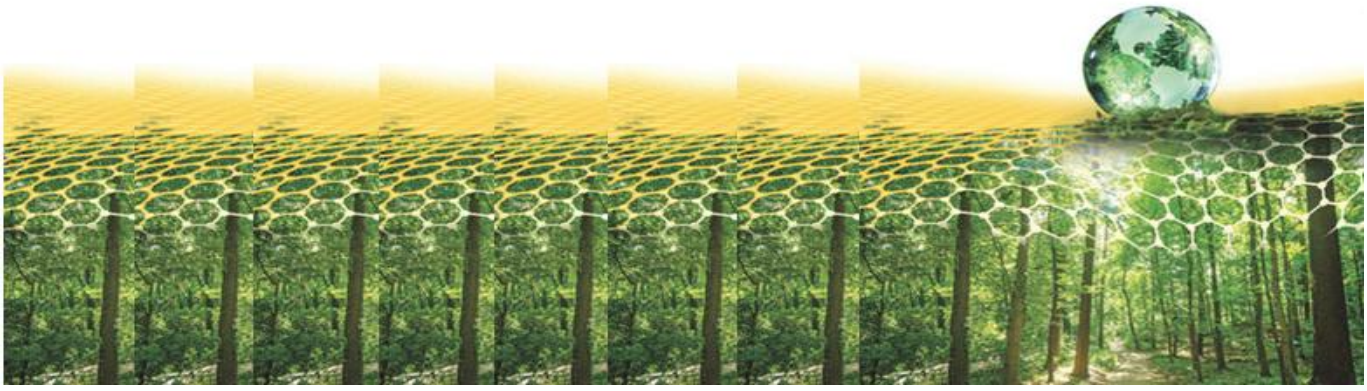
In the light of these developments, Sree Vidyanikethan Engineeirng College, Tirupati in collaboration with All Insdia Council of Technical Education(AICTE), has organized a National level seminar on **Research issues on Nano-Particles and Nano-Bio Sensor in Agriculture** as a forum on new and emerging applications of nanotechnologies in food, water and agriculture.

The purpose of the seminar is to review the state-of-the-art of R&D of nanotechnology for the agricultural sector and to analyse problems with possible solutions in crop production.

The seminar is aimed to: –

- identify those emerging nanotechnology applications which are considered as having the greatest potential in providing broad equitable social benefits;
- promote research collaboration and partnerships among Engineering and Agriculture professionals on issues in agriculture; and
- promote a harmonized approach toward the assessment and management of potential human health and environmental risks that may be associated with the application of nanotechnologies in the areas of food and agriculture.

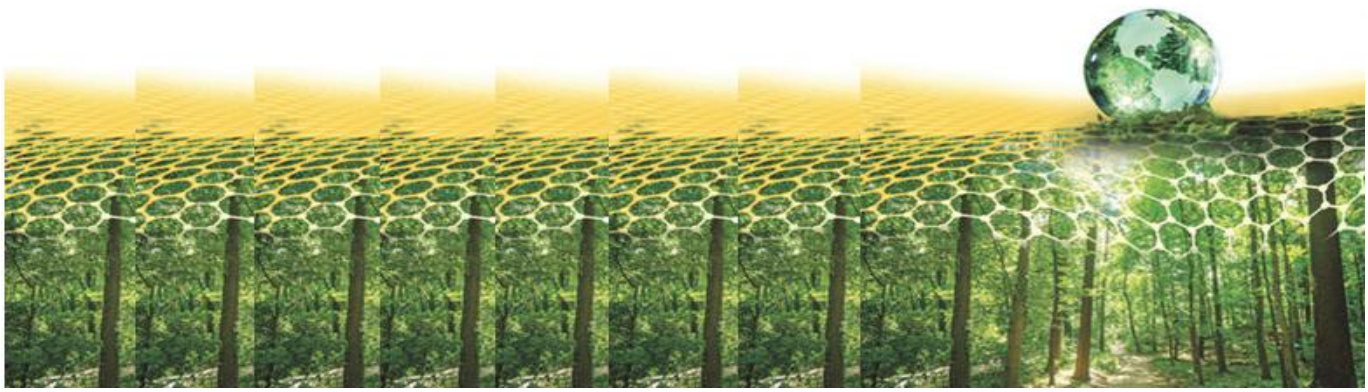
This seminar is to bring together leading scientists, key stakeholders and experts, in order to promote the presentation of research and industry results and the discussion of experiences.



Theme of the Seminar

The seminar has been planned to cover the following themes:

1. Researchable issues to be explored in agriculture using nanotechnology.
2. Synthesis of nano particles and nano-biosensors applicable to agriculture .
3. Current status of research in agriculture using.nano based materials.
4. Case-studies on applications of nano particles and nano-biosensors in agriculture.
5. Biosafety and Risk assessment in usage of nano particles for food production.
6. Socio economic and regulatory issues in technological adaption of nanomaterials and nano bio- at Indian prospective.



Program Schedule

DAY 1	24TH of November 2017
09:00 –10:00	Registration
10:00 – 11:30	Session 1 : **Agri NanoTtechnology -I** Resource Person : Dr. Dr T.N.V.K.V. Prasad, Senior Scientist, Nanotechnology laboratory, Institute of Frontier Technology, Regional Agricultural Research Station, A.N.G.Ranga Agricultural University, Tirpuati
11:30 - 11:45	High Tea
11:45 – 13:00	Session 2 : **Agri Nano Technology -II** Resource Person : Dr. Dr T.N.V.K.V. Prasad, Senior Scientist, Nanotechnology laboratory, Institute of Frontier Technology, Regional Agricultural Research Station, A.N.G.Ranga Agricultural University, Tirpuati
13:00 – 14:00	Lunch break
14:00 – 15:30	Session 3 : **Nano Sized Plant Nutrients in Agriculture - A Boon or Bane -I** Resource Person : Dr P. Sudhakar, Professor & Head, Department of Crop Physiology, S.V. Agricultural College, Tirupati
15:30 – 15:45	High Tea
15:45 – 16:45	Session 4 : **Nano Sized Plant Nutrients in Agriculture - A Boon or Bane -II** Resource Person : Dr P. Sudhakar, Professor & Head, Department of Crop Physiology, S.V. Agricultural College, Tirupati.

DAY 2	25TH of November 2017
9:00 – 11:00	Session 5 : **Problems and Prospects of Nanotechnology Applications in Agriculture** Resource Person : Dr. V.Sumathi, Professor & Head, Department of Agronomy, S.V. Agricultural College, Tirupati-517 502
11:00 - 11:15	High Tea
11:15 – 13:00	Session 6 : **MEMS/Nano Technologies: Development & Applications** Resource Person : Dr.V.Sudhakar, Scientist, Ada, Bangalore.
13:00 – 14:00	Lunch break
14:00 – 16:15	Session 7 : **MEMS/NEMS Technologies For Agriculture Industry** Resource Person : Dr.V.Sudhakar, Scientist, Ada, Bangalore.
16:15 – 16:30	High Tea
16:30 – 16:45	Valediction & Certificate Distribution

Invitation

SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)
Sree Sainath Nagar, A. Rangampet – 517102

Department of Electronics and Communication Engineering

Cordially invites you

to

***AICTE** Sponsored*

Two day National Level Seminar

On

"Research Issues on Nano-Particles and Nano-Bio Sensors in Agriculture"

24th & 25th November, 2017

Resource Persons:

Dr. T.N.V.K.V. Prasad
Senior Scientist, Nanotechnology Laboratory,
Institute of Frontier Technology, Regional Agricultural Research Station,
A.N.G. Ranga Agricultural University, Tirupati

Dr. V. Sudhakar
Scientist, ADA, Bangalore

Dr. P. Sudhakar
Professor & Head, Department of Crop Physiology,
S.V. Agricultural College, Tirupati

Dr. V. Sumathi
Professor, Department of Agronomy,
S.V. Agricultural College, Tirupati

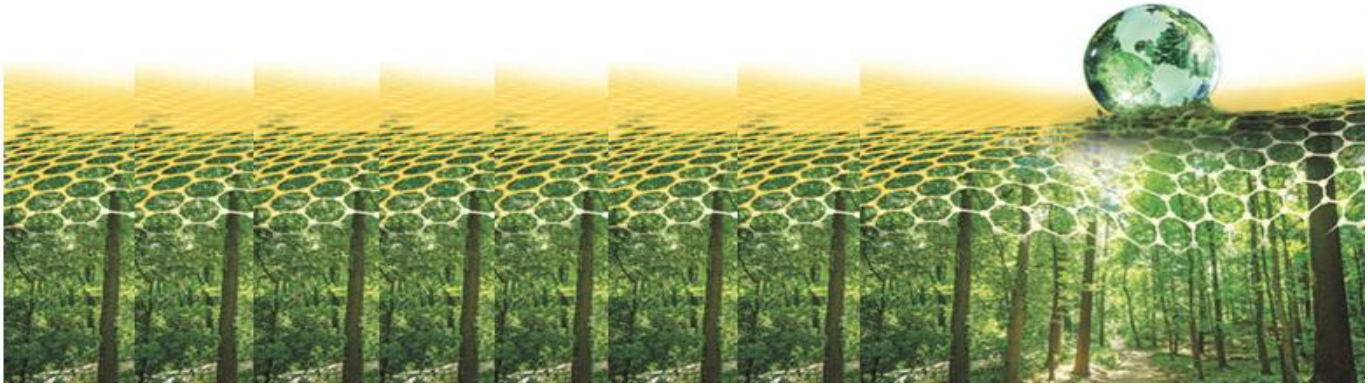
Date	: **24th & 25th** November, 2017
Time	: 09.00 AM - 05.00 PM
Venue	: e-Class Room
Target Group	: Faculty, Research Scholars, Industry Experts

Session 1: Agri NanoTtechnology –I & II

The speaker emphasized the importance of Nano particles allied with sciences in Agriculture sector .Initially, he described about bio synthesis of Nano particles using Oak leaf extract and nano scale chitsoan flowers.

And also he has given brief explanation about his research findings as a case study as mentioned below.

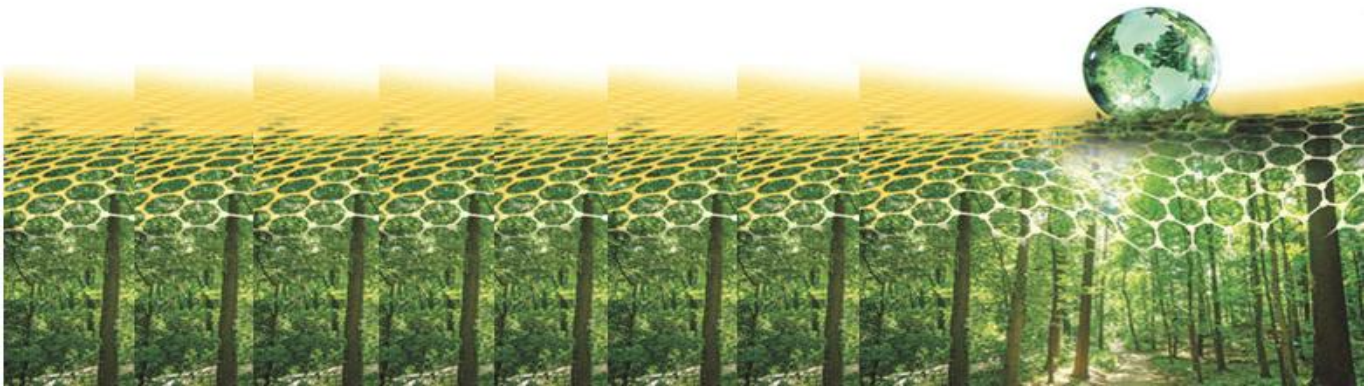
- The Effect on nanoscale Zinc Oxide material and Zinc biofortification of maize for improving the crop production.
- Plant growth- Seed treatment of groundnut seeds with silver nano particles
- How Nanoscale Calcium oxide is used for remediation of sodium hazard in soils.
- A Case study of incision of Aloin coated silver Nano particles on mice to control the Bovine Mastitis.
- Amelioration with Zinc Oxide Nano particles coated Momordica Charantia has been used for control diabetics in rats.



Session 2: Agri Nano Technology –II

In the second session of the first day, the expert pointed out the Bio safety studies of Nanoparticles have a major concern and still this need to be addressed in a proper way. There is a need for forum which provides the safety guidelines and ethical issues in usage of nano particles.

The first of its kind ‘SOCIETY OF AGRINANO TECHNOLOGY’ has been introduced by the speaker. He invited the New Registrations are welcome for this society.

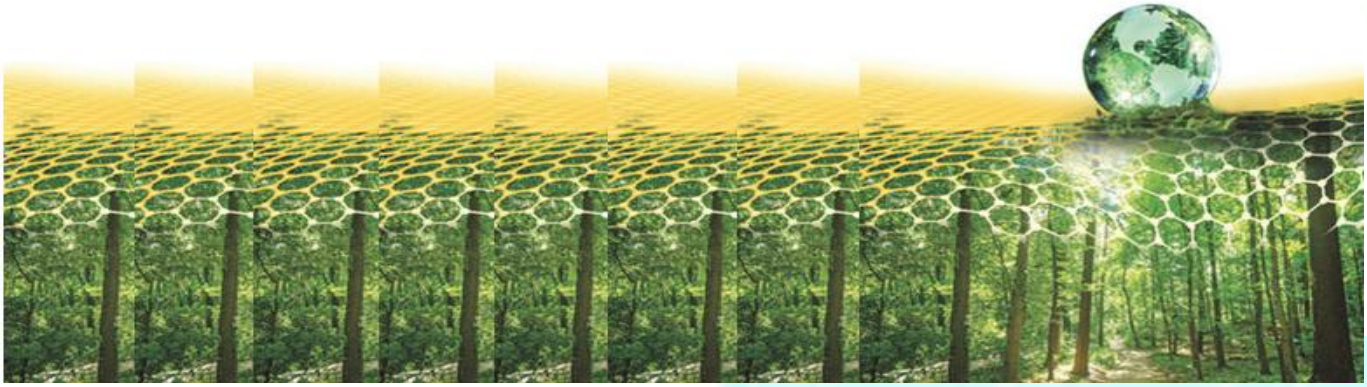


Session 3 & 4: **Nano Sized Plant Nutrients in Agriculture - A Boon or Bane- I & II**

This session started with an introduction of different types of Nanoparticles and micro nutrients along with synthesization of nano particles using different techniques has been addressed. The colloidal properties of the particles should be verified before Chemical composition also explained in detailed manner.

In addition to that, the expert discussed about how the plants are consuming the Nano particles through Bio-transformation in the form of Ions. If it is not converted in the form of Ions then it becomes toxic nature. And also he mentioned the application of nano particles in Agriculture like Bio-nano technology, Surveillance and control of pest and diseases, Development of e-generation pesticides and removal of contaminants from soil and water.

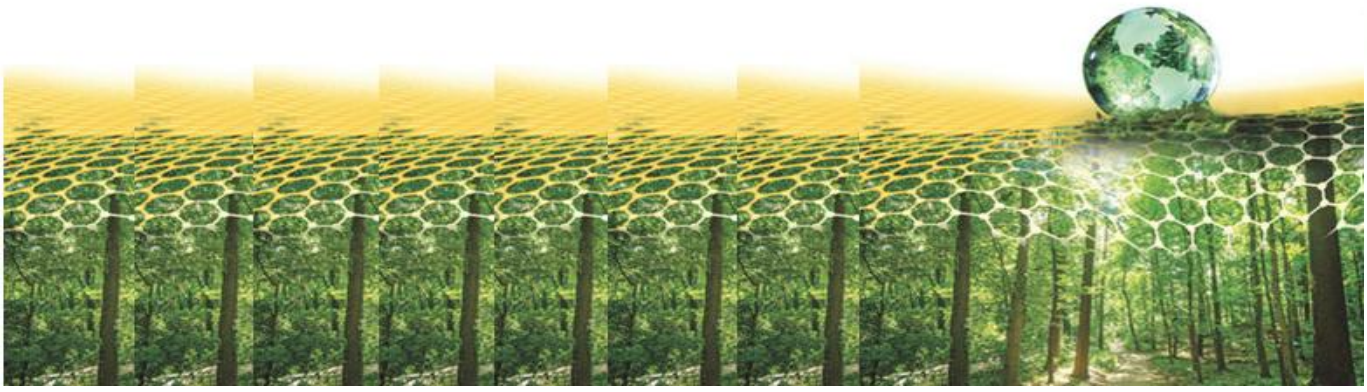
Finally, the effect on growth of stem cells with ZnO, CuO and CaO, among these ZnO is the one which gives very promising results compared to other nano particles.



Session 5: Problems and prospects of Nanotechnology Application in Agriculture

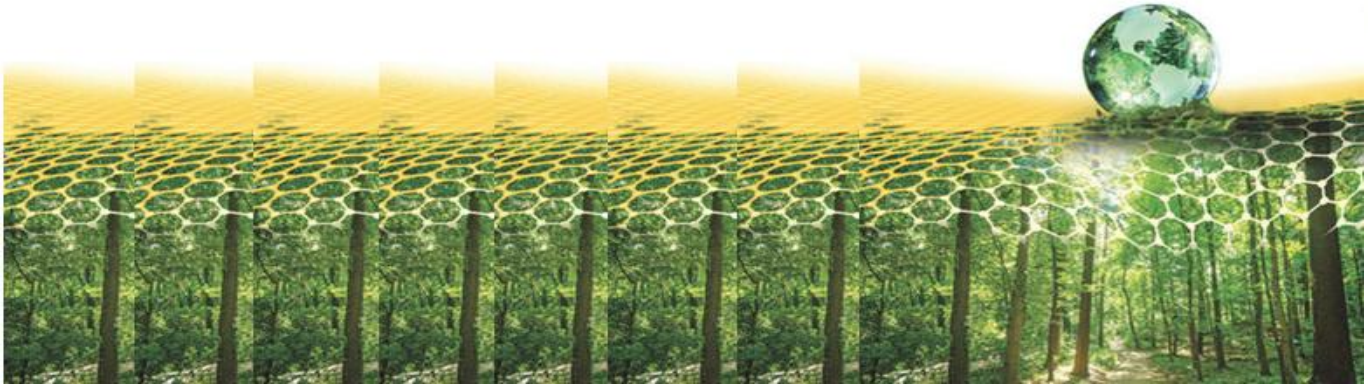
The expert opened up the session on the topic of solution for imbalance Food shortage faced by many formers rely on agriculture more than a century It may be solved through recent developments in agriculture technology and the use of bio sensors in agriculture for the purpose of sensing biologically specific materials and to detect the pathogens ,contaminated detection .These materials are anti bodies ,protein, enzymes, immunological molecules. Further, how the hand held instrument that could detect bacteria in 15 minutes using nano technology was also discussed. In the near future with help of nano sized geotracers, the rotten part of the food items could be precisely located.

The speaker suggested that the interdisciplinary way of working (BIOLOGY+PHYSICS+CHEMISTRY) groups may give the better understanding of Nanotechnology and their future prospects to the benefits of society.



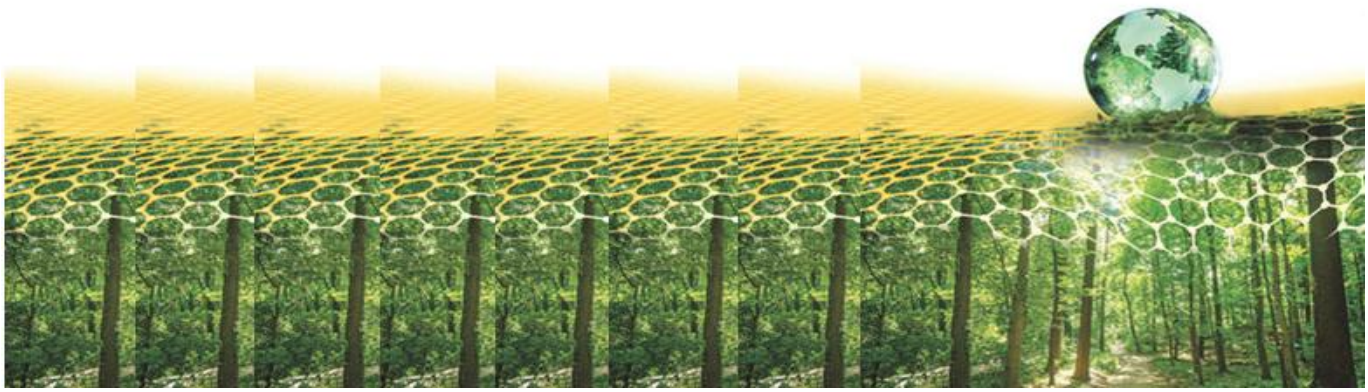
Session 6 : **MEMS/Nano Technologies Development & Applications**

The expert has given a presentation about the use of Nano materials in the Defense sector. The steps involved in the fabrication of MEMS sensor is presented in a lucid way. He asked the interested researchers to utilize of IISC fabrication Lab for designing any kind of MEMS sensor. The awareness about the entrepreneurship i.e., start of making new products has been created by quoting the 'make in India' slogan. And also he stressed the future India should be a 'made in India' by empowering the young minds to build indigenously developed products with our own technology. The lively demo of the pressure sensor, magneto meter and gyroscope used in TEJAS Light compact Air Craft (LCA) was given during the session.



Session 7 : **MEMS/NEMS Technologies for Agriculture Industry**

The second lecture in this session future prospects of Indian agriculture with nano technology was explained. The statistical analysis about food production, land area, use of fertilizer, GDP and organic products across the states of India were compared. At the end of lecture, the yield of Agri products could be improved by incorporating nanotechnology in agriculture in a sustainable manner to get rid off the famine, drought, and in extreme situations were highlighted.



Annexure-I (Brochure)

ABOUT THE COLLEGE

The College was established in 1996 by Sree Vidyanikethan Educational Trust under the stewardship of Dr. M. Mohan Babu, renowned Film Artiste and Former Member of Parliament (Rajya Sabha). The College has initial intake of 180 students to serve the cause of technical education in the backward region of Rayalaseema. The intake has increased exponentially to 2112 in 2017-18. The College now offers 8 B.Tech programs; 8 M.Tech programs; MCA Program; and 3 Doctoral Programs. AICTE has also accorded permission for 2nd Shift Polytechnic from the academic year 2009-10 and presently 5 Diploma courses are being offered. Today, Sree Vidyanikethan Engineering College is one of the largest, most admired and sought after Institutions in Andhra Pradesh. The College is approved by AICTE and affiliated to JNTU Ananthapuramu. The College has been accorded Autonomous Status by the UGC, New Delhi in 2010-11 which was extended for six years (from 2016-17 to 2021-22).

The College is known for its quality initiatives which are amply reflected in accreditations by National Board of Accreditation (NBA) for UG & PG programs, National Assessment and Accreditation Council (NAAC) with 'A' Grade and many multinational organizations such as TCS, WIPRO & IBM. The College is successfully implementing. TEQIP-II under Sub-component 1.1: Strengthening institutions to improve Learning Outcomes and Employability of Graduates, funded by the Ministry of HRD, Govt. of India. The College has been accorded "UGC-Colleges with Potential for Excellence" status under CPE Scheme by UGC, New Delhi. It also has been accorded 'GOLD' category by CII-AICTE Survey; and was conferred with 'A' Grade by Department of Higher Education, Andhra Pradesh. The college participated in National Institution Ranking Frame Work (NIRF), 2017 and stood within the Rank Bank: 151-200. SIEMENS established 6 State-of- the art I-SDI laboratories.

COURSES OFFERED

The college offers B. Tech Programs in ECE(240),CSE (240), IT (120), EEE (240), EIE (120), CSSE (120), Civil (120), Mech. (180). The college also offers M. Tech. in DECS, VLSI, CMS, CS, CNIS, SE, EPS & MCA (120) along with Ph.Ds in ECE, EEE & CS.

ABOUT TIRUPATI

Tirupati is famous for Sri Venkateswara Swamy temple dedicated to Lord Venkateswara, located about 15 kilometers North West of Tirupati in Tirumala hills at an elevation of 853 meters (2,799 ft). It is one of the most important pilgrimage centers in the World and the temple draws millions of pilgrims and is the busiest pilgrimage centre in the world. Also, the city is a major economic and educational hub in the southern region of the state.

ROUTE

15 km from the temple town of Tirupati on Tirupati – Madanapalle National Highway No. 205

ABOUT THE DEPARTMENT

The core strength of any College/University lies in the quality of its faculty. The Department of Electronics & Communication Engineering has a team of highly motivated and dedicated faculty to the cause of academics and striving to do the best in the interest of the College and its students. The Department of Electronics and Communication Engineering offers an Undergraduate program in Electronics and Communication Engineering and three Postgraduate programs in DECS, VLSI, and CMS Specializations. The Department has been recognized as research centre by JNTUA, Anantapuramu. The department has full time Ph.D Scholars, JRFs. In addition department has established Research Laboratories like National MEMS Design Centre, Antenna Research Lab and Nanoelectronics Lab. The department is undertaking research projects from DST, AICTE, ISRO, INUP, Govt of A.P. & etc.,

ABOUT THE WORKSHOP

Research and development in nanoscience and nanotechnologies have been growing in the public and private sectors in both developed and developing countries. It is becoming clear that in order to achieve the expected goals promised by nanotechnologies, the world community must ensure that direct, forthright global governance of these technologies is addressed. In the light of these developments, Sree Vidyanikethan Engineering College, Tirupati in collaboration with All India Council of Technical Education(AICTE), is organizing a National level seminar on Research issues on Nano - Particles and Nano-Bio Sensor in Agriculture as a forum on new and emerging applications of nanotechnologies in food, water and agriculture.

OBJECTIVES:

- To identify those emerging nanotechnology applications which are considered as having the greatest potential in providing broad equitable social benefits
- To promote research collaboration and partnerships among Engineering and Agriculture professionals on issues in agriculture; and
- To promote a harmonized approach toward the assessment and management of potential human health and environmental risks that may be associated with the application of nanotechnologies in the areas of food and agriculture.

ELIGIBILITY CRITERIA:

- Academic Professionals
- Researcher Scientists & Engineers
- Industry Experts

Registration Fees:

No Registration Fee.

RESOURCE PERSONS

The resource persons constitutes of scientists, Experts, Senior faculty members and various guest speakers from different R&D organizations, Premier Academic institutes like IITs, NITs & Univerisities of Engineering and Agricultural Sciences.

IMPORTANT DATES

Registration Open: **Nov' 15, 2017**

Last Date for Registration: **Nov' 23, 2017**

Please send the filled-in registration forms before the deadline to nanoagriseminar2017@gmail.com (Limited Participants & Selection Process is on First Cum First Serve bases).

BOARDING & LODGING

Boarding, Lodging and travel expenses shall be borne by the participants. Several good hotels and lodges with reasonable price are available in & around Tirupati. Participants may contact directly for their accommodation in Hotels.

CONTACT PERSONS:

DR. D. LEELA RANI,
Professor, ECE

M: 9441151699 || email: dlrani79@gmail.com

DR. N.VITHYALAKSHMI,
Assoc. Professor, ECE

M: 9047161687 || email: vidhyavinoth@gmail.com

REGISTRATION FORM

ALL INDIA COUNCIL OF TECHNICAL EDUCATION (AICTE)

Sponsored

TWO DAYS NATIONAL LEVEL SEMINAR ON

"Research issues on Nano-Particles and Nano-Bio Sensor in Agriculture"

(24th & 25th NOVEMBER 2017)

Name: _____

Designation: _____

Organization: _____

Address for Correspondence:

_____

_____

_____ Pin Code: _____

Phone: _____

E-mail: _____

Place: _____

Date: _____

Applicant's Signature

Signature of the Head of Institution / Sponsoring Authority (for sponsored candidates)

Sree Sainath Nagar, Tirupati – 517 102 (A.P)
Ph: +(91) 877-2236711-14 Fax: 0877-2236717
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Dr. B. Senthil Kumar, Assoc. Professor, ECE
Dr. C. Venkataramanan, Assoc. Professor, ECE
Dr. V. V. Satyanarayana, Assoc. Professor, ECE
Dr. N. Ashok Kumar, Assoc. Professor, ECE
Dr. P. Nagarajan, Assoc. Professor, ECE
Mr. R. Nagendra, Asst. Professor (SL), ECE
Mr. P. Madhu Kumar, Asst. Professor (SL), ECE
Mr. T.V.S. Gowtham Prasad, Asst. Professor (SL), ECE
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Ms. K. Neelima, Asst. Professor, ECE
Mr. T. Ravi Kumar Naidu, Asst. Professor, ECE
Mr. M. Naresh Babu, Asst. Professor, ECE
Mr. G. Guru Prasad, Asst. Professor, ECE
Dr. G. Arul Elango, Asst. Professor, ECE & Faculty, Dept. of ECE.

Address for Correspondence:
Coordinator
TWO DAYS NATIONAL LEVEL SEMINAR ON
"Research issues on Nano-Particles and Nano-Bio Sensor in Agriculture" (24th & 25th NOVEMBER 2017)
Department of ECE SREE VIDYANIKETHAN ENGINEERING COLLEGE

All India Council of Technical Education (AICTE)

Sponsored

TWO DAYS NATIONAL LEVEL SEMINAR

on

"Research issues on Nano-Particles and Nano-Bio Sensor in Agriculture"

(24th & 25th NOVEMBER 2017)

Organized by
Department of Electronics and Communication Engineering

SREE VIDYANIKETHAN Engineering College

SREE VIDYANIKETHAN ENGINEERING COLLEGE
(AUTONOMOUS)

Annexure-II (Registration Form)

SREE VIDYANIKETHAN ENGINEERING COLLEGE
(Autonomous)

Department of Electronics and Communication Engineering

All India Council of Technical Education (AICTE)
Sponsored
TWO DAYS NATIONAL LEVEL SEMINAR ON
"Research issues on Nano-Particles and Nano-Bio Sensors in Agriculture"
(24TH & 25TH NOV' 2017)

REGISTRATION FORM

S. No.	Name of the Participant	Designation & Department	Organization	Email-id	Phone No.	Signature
1.	D. Rakesh	Assistant Professor, Department of ME	SVEC	rakesh.smat@gmail.com	9949112421	
2.	P. Bhanu Prakash	Assistant Professor, Department of ME	SVEC	bhanupalem@gmail.com	9000017164	
3.	S. Nagesh	Assistant Professor, Department of ME	SVEC	nageshsunupsula@gmail.com	7396750727	
4.	Dr. B.Sachuthananthan	Professor, Department of ME	SVEC	bsachu7@yahoo.co.in	9043333326	
5.	Dr. S. Raghunathan Dr.S.Ragu Nathan	Associate Professor, Department of ME	SVEC	raghucemajor@gmail.com	9715064464	
6.	Dr.J.S. Binoj	Associate Professor, Department of ME	SVEC	binojlaxman@gmail.com	8754379212	
7.	K. Lakshmi Kala	Assistant Professor, Department of ME	SVEC	lakshmikala1982@gmail.com	8332046762	

Annexure-III (Certificate)

SREE VIDYANIKETHAN ENGINEERING COLLEGE

(Autonomous)

SREE VIDYANIKETHAN Engineering College

Approved by AICTE, New Delhi, Affiliated to JNTUA, Anantapuramu, Accredited by NAAC with 'A' Grade
Sree Sainath Nagar, A. Rangampet, Tirupati, Andhra Pradesh – 517102

Department of Electronics & Communication Engineering

AICTE SPONSORED

TWO DAY NATIONAL LEVEL SEMINAR

ON

"RESEARCH ISSUES ON NANO-PARTICLES AND NANO-BIO SENSOR IN AGRICULTURE"

(24-25 November 2017)

Certificate

This is to certify that Dr./Mr./Ms. _____

of _____ *has participated in AICTE*

Sponsored Two Day National Level Seminar On **"RESEARCH ISSUES ON NANO-PARTICLES AND NANO-BIO SENSOR IN AGRICULTURE"** *organized by the Department of Electronics and Communication Engineering during 24-25 November, 2017.*

Coordinator

Principal

Annexure-IV (Feedback Form)

SREE VIDYANIKETHAN ENGINEERING COLLEGE

(Autonomous)

Sree Sainath Nagar, A.Rangampet – 517 102

Department of Electronics and Communication Engineering

AICTE Sponsored Two days National level Seminar

On

"Research Issues on Nano-Particles and Nano-Bio Sensor in Agriculture"

(24th & 25th November, 2017)

Feedback Form

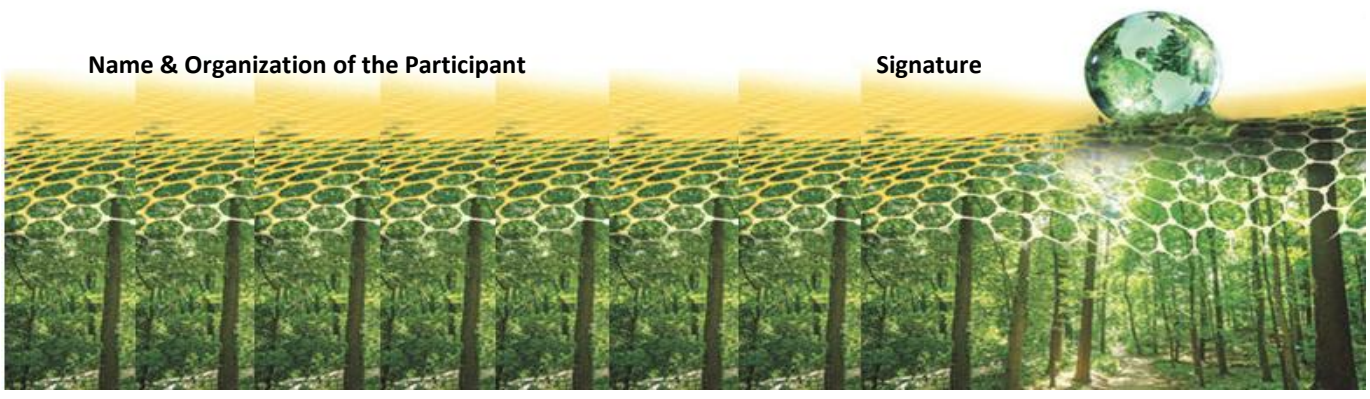
Session Number: 05

Resource Person: Dr. V. Sumathi **Date: 25-11-2017 (FN)**

Please rate the following parameters **A-Excellent, B-Very Good, C-Good, D-Fair.**

S.No	Points to Evaluate	Session 3				Comments
		A	B	C	D	
1.	The aim and objectives of the seminar are met					
2.	The seminar was started at scheduled time					
3.	The facilities provided were satisfactory					
4.	The session is clear and well organized					
5.	The speaker was interactive and effective					
6.	The presenter responded to questions in a satisfactory manner					
7.	Overall, the session was informative and valuable					
8.	How would you rate this session overall?					
9.	Additional comments or suggestions for future improvements					
10.	Other Comments					

Name & Organization of the Participant **Signature**



Photos


.....Material age
Stone Age
2.5 million years
Iron Age
Plastic Age
Silicon age
Nano age
Flavor of the day