

# VALLURUPALLI NAGESWARA RAO VIGNANA JYOTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

An Autonomous, ISO 9001:2015 & QS I-Gauge Diamond Rated Institute, Accredited by NAAC with 'A++' Grade NBA Accreditation for B.Tech. CE,EEE,ME,ECE,CSE,EIE,IT,AME, M.Tech. STRE, PE, AMS, SWE Programmes Approved by AICTE, New Delhi, Affiliated to JNTUH, NIRF (2022) 113 Rank in Engineering Category College with Potential for Excellence by UGC,JNTUH-Recognized Research Centres:CE,EEE,ME,ECE,CSE Vignana Jyothi Nagar, Pragathi Nagar, Nizampet (S.O.), Hyderabad – 500 090, TS, India. Telephone No: 040-2304 2758/59/60, Fax: 040-23042761 E-mail: postbox@vnrviiet.ac.in, Website: www.vnrviiet.ac.in



### **Electronics and Communication Engineering**

## **Guest Lectures conducted under**

# AICTE sponsored Distinguished Chair Professor (DCP) scheme

S. No.	Title	Date	No. of Participants	YouTube Links
1.	Higher Education and National Development	31.05.2022	102	https://youtu.be/eh5VZK9FT5o
2.	Relevance of Nuclear Energy in Achieving Net Zero Emissions	25.06.2022	70	https://youtu.be/5ry2mfwZPiY
3.	Cillage: A Knowledge Inspired Ecosystem for Transforming Rural India	11-07-2022	60	https://youtu.be/wTO5gNTbSw4



### Speaker: Padma Vibhushan Sri. Anil Kakodkar

AICTE- Distinguished Chair Professor, Chancellor, Homi Bhabha National Institute, Chairman, Rajiv Gandhi Science & Technology Commission, Former Chairman, Atomic Energy Commission,

### **AICTE-Distinguished Chair Professor scheme**

### **Report on Guest lecture 1**

## **Topic : Higher Education and National Development**

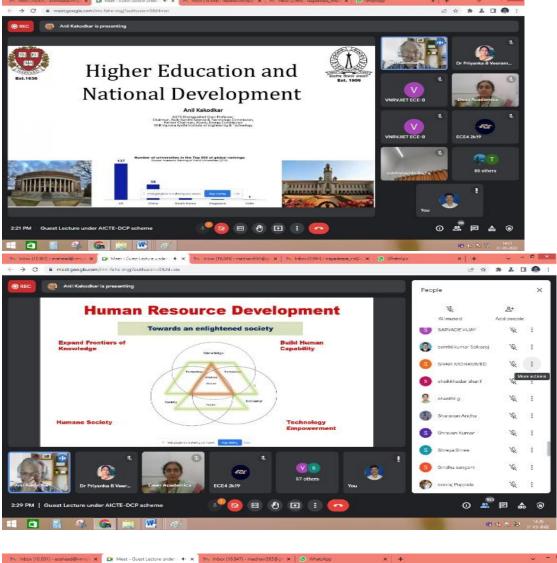
### Date : 31.05.2022

Under the AICTE - Distinguished Chair Professor (DCP) scheme, the Institution has organized the first lecture of **Padma Vibhushan Sri Anil Kakodkar**, titled '**Higher Education and National Development**' between 2.00 PM to 4.00 PM on 31.05.2022 (Tuesday) for all undergraduate students and faculty at the college. The event was coordinated by Dr. Rajendra Prasad Somineni, HoD and Professor of ECE department, and the lecture and interaction were conducted online through Google Meet platform. The interaction was very productive and a total of 102 students along with other faculty attended the lecture making the session a great success.

The session began with a brief history and achievements of the institution presented by Dr K. Anuradha, Dean academics. The session was moderated by Dr V. Priyanka from department of ECE, introduced the guest to students. A welcome note by Mrs. L. Dharma Teja, Faculty of Department of ECE. The vote of thanks is given by Dr. Naga Deepa Ch. Faculty of ECE department. The main aim of this session is to enlighten the students and faculty on the significance and essence of Higher Education and National Development as a foundation of hope and inspiration for the next 25 years to build a new India.

### **Upshots from the lecture:**

- Human resource development towards an enlightened society
- Strengthening human values to eliminate exploitation
- How a university contributing to National Development beyond Human Resources?
- Ecosystem for nurturing excellence
- Key Education Challenges in specific Indian context
- Enabling environment by R&D, Technology Product / Demonstration, Incubation startups, Research Park, Venture capital, Triple helix framework for large platforms, etc.





## **Report on Guest lecture 2**

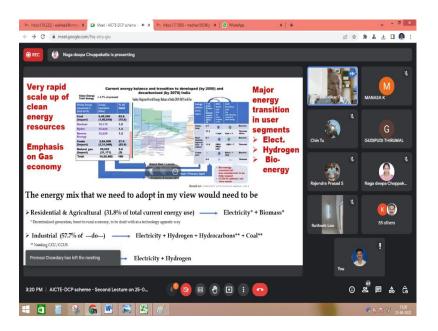
Topic: Relevance of Nuclear Energy in Achieving Net Zero Emissions Date: 25.06.2022

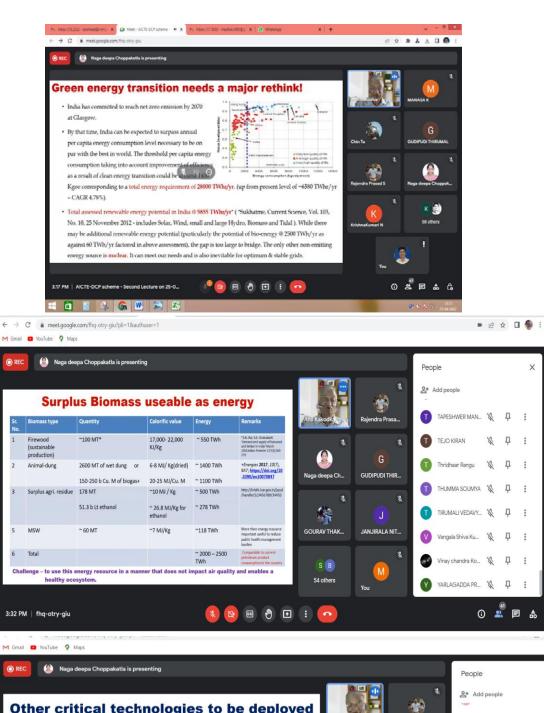
Under the AICTE - Distinguished Chair Professor (DCP) scheme, the Institution has organized the Second lecture of **Padma Vibhushan Sri Anil Kakodkar**, titled '**Relevance of Nuclear Energy in Achieving Net Zero Emissions**' at 3.00 PM on 25.06.2022 (Saturday) for all undergraduate students and faculty at the college. The event is coordinated by Dr. Rajendra Prasad Somineni, HoD and Professor of ECE department, and the lecture is conducted online through Google Meet platform. The interaction is very productive and a total of 70 students along with other faculty attended the lecture making the session a great success.

The session is moderated by Dr. Naga Deepa Ch. from department of ECE, introduced the guest to students. A welcome note and vote of thanks is given by Mrs. K. Manasa, faculty of Department ECE. The main aim of this session is to enlighten the students and faculty on the significance and essence of Green energy, clean energy, etc.

### **Conclusions from the Lecture:**

- Green energy transition needs a major rethink!
- Share of electricity would thus need to go up
- Clean energy consumption would need to increase ~ 80 times
- Discussion on Key elements of suggested sustainable clean energy policy
- Encouraged to develop new technologies even while accelerating approach to net zero for sustainable and cost competitive energy security
- Ecosystem for technology leadership



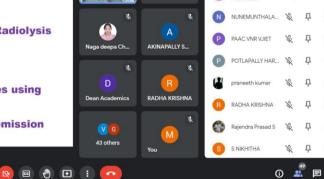


#### Other critical technologies to be deployed

- · Steam electrolysis (and also SOFC)
- Thermo-chemical splitting of water (Radiolysis of water could also be explored)
- Energy storage

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- **Production of hydro-carbon substitutes using** hydrogen and bio-mass
- CCU&S to meet energy needs, meet emission targets and produce value



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### **Report on Guest lecture 3**

### Topic: Cillage: A Knowledge Inspired Ecosystem for Transforming Rural India

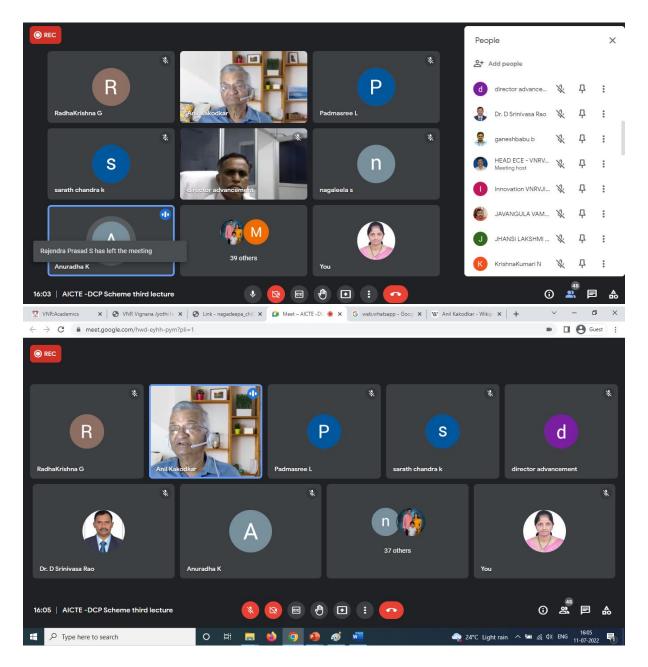
Date: 11.07.2022

Under the AICTE - Distinguished Chair Professor (DCP) scheme, the Institution has organized the third lecture of **Padma Vibhushan Sri Anil Kakodkar**, titled "**Cillage: A Knowledge Inspired Ecosystem for Transforming Rural India**" at 3.00 PM on 11.07.2022 (Monday) for all faculty at the college. The event is coordinated by Dr. Rajendra Prasad Somineni, HoD and Professor of ECE department, and the lecture is conducted online through Google Meet platform. The interaction is very productive and a total of 60 faculty attended the lecture making the session a great success.

The session is moderated by Dr. Naga Deepa Ch. from department of ECE, introduced the guest to students. The main aim of this session is to enlighten the faculty on the significance and essence of city to village Knowledge transfer, etc. The speaker has been propagating the concept of CILLAGE, a knowledge-based ecosystem for bridging city and village gaps for technology enabled sustainable development in rural areas. The session is concluded by Dr. Chennakesava Rao, Director of advancements and vote of thanks is given by Dr K. Anuradha, Dean academics.

### **Conclusions from the lecture:**

- Opportunities in rural domain
- Higher education institutions need to be both, knowledge creators as well as value creators
- Cillage ecosystem
- CILLAGE Architecture
- Ecosystem for technology leadership
- Science & Technology Resource centre (STRC) Gondwana University Gadchiroli



## **Electronics and Communication Engineering**

# **Guest Lectures conducted under**

# AICTE sponsored Distinguished Visiting Professor (DVP) scheme

S.No.	Title	Date	No. of	
			Participants	
1.	Insights into IoT	17-11-2021	107	
2.	Wireless Communication in the IoT	19-11-2021	120	
3.	Edge Intelligence in IoT	29-11-2021	115	
4.	Battery Life Enhancement in IoT devices	30-11-2021	95	

Speaker: Distinguished Visiting Professor (DVP):



**Sri. N. Venkatesh** Senior Director,Engineering Silicon Labs

Report

### **Guest Lecture -1**

### **Topic: Insights into IoT**

### Date: 17-11-2021

Under the AICTE - Distinguished Visiting Professor (DVP) scheme, the Institution has organized the first lecture of **Sri. N Venkatesh**, titled '**Insights into IoT**' between 2.30 PM to 4.30 PM on 17.11.2021 (Wednesday) for all undergraduate students and faculty at the college. The event was coordinated by Dr. Rajendra Prasad Somineni, HoD and Professor of ECE Department, the lecture and interaction were conducted online through Google Meet platform. The interaction was very productive and a total of 107 students along with other faculty attended the lecture making the session great success.

The session began with a brief history and achievements of the institution presented by Dr Rajendra Prasad. The session was moderated by Dr V. Priyanka from department of ECE, introduced the guest to students. A welcome note by Dr. Naga Deepa Ch., Faculty of Department of ECE. The vote of thanks is given by Mr Shabarinath B. Faculty of ECE department.

The main aim of this session is to enlighten the students and faculty on the significance IoT. The talk given by Venkatesh sir can be divided into two phases. In which phase 1 explains the architecture of IoT and phase 2 explains the areas of focus in the context of IoT. The structure of the IoT node can be mapped to a closed-loop control system with negative feedback. Modern IoT device is a System on chip (SoC) incorporating sensors, battery management, interface, I/O devices, Communication interface, and software controlling all these elements. IoT involves communication between various platforms using various protocols. It is important to know the key difference between Fog computing, Cloud computing, and Edge Computing which forms the modern-day computing framework for IoT. Sensors, 5G Communications Technology, Cloud Computing, Industrial IoT, Artificial Intelligence, Automobiles, and Wearables form the major focus areas in the context of IoT. It is important to realize the importance of IoT in modern-day recruitment for students and utilize the college life accordingly for success.

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#### **Guest Lecture-2**

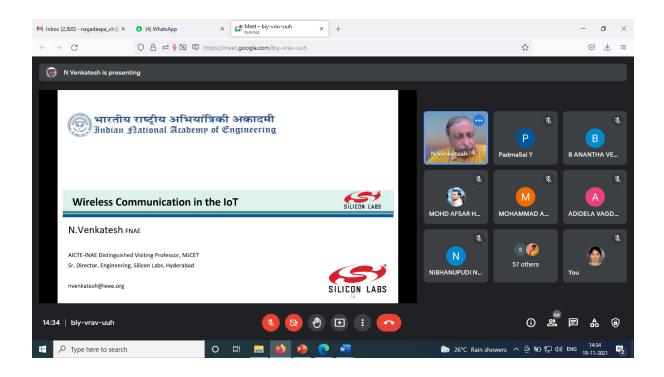
### **Topic: WIRELESS COMMUNICATION IN THE IOT**

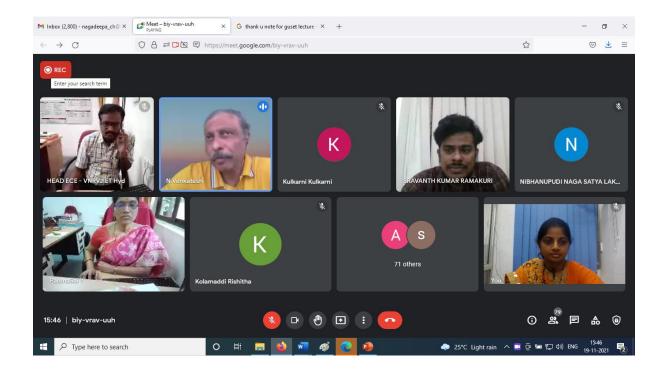
#### Date: 19-11-2021

Under the AICTE-Distinguished Visiting Professor (DVP) scheme, the Institution has organized the Second lecture of **Sri. N Venkatesh**, titled "**WIRELESS COMMUNICATION IN THE IOT**" between 2.30 PM to 4.30 PM on **19.11.2021 (Friday)** for all undergraduate students and faculty at the college. The event was coordinated by Dr. Rajendra Prasad Somineni, HoD and Professor of ECE Department, the lecture and interaction are conducted online through Google Meet platform. The interaction was very productive and a total of 120 students along with other faculty attended the lecture making the session great success.

The session began with a brief history and achievements of the institution presented by Dr Rajendra Prasad. The session was moderated by Dr D. Sravanth Kumar from department of ECE, introduced the guest to students. A welcome note by Dr. Naga Deepa Ch., Faculty of Department of ECE. The vote of thanks is given by Dr. Y. Padma Sai, Professor of ECE department.

The main aim of this session is to enlighten the students and faculty on the significance of Wireless Communications in IoT. The talk given by Venkatesh sir about Wireless standards, protocols used in IoT.





Report

### **Guest Lecture-3**

### **Topic: Edge Intelligence in IoT**

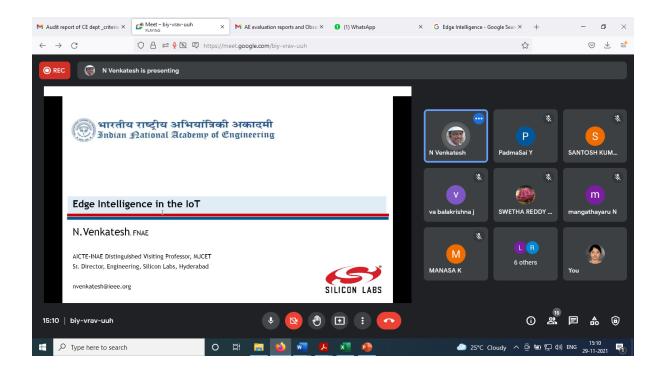
### Date: 29-11-2021

Under the AICTE-Distinguished Visiting Professor (DVP) scheme, the Institution has organized the third lecture of **Sri. N Venkatesh**, titled "**Edge Intelligence in IoT**" between 2.30 PM to 4.30 PM on 29.11.2021 (Monday) for all undergraduate students and faculty at the college. The event was coordinated by Dr. Rajendra Prasad Somineni, HoD and Professor of ECE Department, the lecture and interaction are conducted online through Google Meet platform. The interaction was very productive and a total of 115 students along with other faculty attended the lecture making the session a great success.

The session began with a brief history and achievements of the institution presented by Dr Rajendra Prasad. The session was moderated by Mrs. K. Manasa from department of ECE, introduced the guest to students. A welcome note by Dr. Naga Deepa Ch., Faculty of Department of ECE. The vote of thanks is given by K. Manasa, Assistant Professor of ECE department.

The main aim of this session is to enlighten the students and faculty on the significance of Edge Intelligence in IoT. The lecture started with informing how data is getting overloaded in the IoT as billions of devices sending out data every few seconds/minutes/days. Also analysed how data is being stored and how it is analyzed and as a result there is an exponential growth of data with the growth of IoT devices. And next participants were able to understand what to do for that increased load problem with analytics for better understanding of either health of the system, customer preferences, reliability of the system, trends, and Lacunae. And for the analytics for immediate action one requires corrective measures, warnings and alerts and identification of safety and security issues.

And to do analysis one should always take the help of Artificial intelligence where AI is a technique which enables machines to mimic human behaviour. And participants learned about role of Machine learning here which is a subset of AI techniques which use statistical methods to enable machines TI to improve with experience. Next also discussed about Training and inference and Road map from F and S. Finally discussed about how important it is for brining intelligence to the Edge.





#### Report

#### **Guest Lecture -4**

#### **Topic: Battery Life Enhancement in IoT Devices**

#### Date: 30-11-2021

Under the AICTE-Distinguished Visiting Professor (DVP) scheme, the Institution has organized the fourth lecture of **Sri. N. Venkatesh**, titled "**Battery Life Enhancement in IoT devices**" between 3.15 PM to 4.15 PM on 30.11.2021 (Tuesday) for all undergraduate students and faculty at the college. The event was coordinated by Dr. Rajendra Prasad Somineni, HoD and Professor of ECE Department, the lecture and interaction are conducted online through Google Meet platform. The interaction was very productive and a total of 95 students along with other faculty attended the lecture making the session great success.

The session began with a brief history and achievements of the institution presented by Dr Rajendra Prasad. The session was moderated by Mrs. Y. Manasa from department of ECE, introduced the guest to students. A welcome note by Dr. Naga Deepa Ch., Faculty of Department of ECE. The vote of thanks is given by Y. Manasa, Assistant Professor of ECE department.

The main aim of this session is to enlighten the students and faculty on the significance of Battery Life Enhancement in IoT devices. The lecture started with internal devices in IoT and the importance of battery life in IoT.

