



# Koneru Lakshmaiah Education Foundation

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## "Recent research trends using Finite Element Method Tool"

18 February 2021

In Association with IETE Vijayawada Chapter

Venue: Online through Webex



Electronics & Communication Engineering



National Seminar on  
**INTRODUCTION TO FEM TOOL-COMSOL MULTIPHYSICS**  
18<sup>th</sup> February, 2021, @ 3 PM (IST)



Talk by



**Dr. VINEET DRAVID**  
Director of India operations  
at COMSOL

Registration link : <https://www.comsol.co.in/c/bhmv>

In association with



**IETE Student Chapter Vijayawada**

Department Chair  
**Dr. V. K. Mittal**  
Professor, ECE, KLVZA

Program Chair  
**Dr. M. Suman**  
Professor and Head, ECE, KLVZA  
**Dr. M. Gowtham**  
Professor and Head, ECE, KLH

CSRG Group-Head  
**Dr. K. S. Ramesh**  
Professor, ECE

Convenor  
**Dr. C. Joshitha**  
Assoc. Professor, ECE

Co-convenor  
**Dr. Lakshman Pappula**  
Assoc. Professor, ECE

Contact Details: [joshi1509@kluniversity.in](mailto:joshi1509@kluniversity.in)

## **Objective**

The lecture will aim to expose you to cutting-edge ways FEM is being utilized in various fields beyond traditional structural analysis. This could include areas like computational biomechanics, fluid dynamics, and multi-physics simulations. The lecture will focus on recent developments in FEM software and algorithms. This might cover topics like cloud-based FEM solutions, integration with other design software (CAD), high-performance computing for faster simulations, and more robust material modelling capabilities.

By attending this lecture, students, scholars and faculties would gain valuable insights into the exciting advancements happening in the field of FEM. You'll learn how this powerful tool is being pushed to its limits and how it's shaping the future of engineering simulations.

## **Description**

The Finite Element Method (FEM) has revolutionized engineering simulations, allowing us to analyze complex structures and phenomena. This guest lecture will delve into the exciting world of cutting-edge research pushing the boundaries of FEM tools. The lecture will focus on Emerging Applications on Discover how FEM is extending its reach beyond traditional structural analysis. Computational Biomechanics: Simulating the behavior of biological tissues and organs. Fluid Dynamics: Analyzing fluid flow and heat transfer in complex geometries. Multi-Physics Simulations: Coupling various physical phenomena for a more holistic understanding

## **Outcome**

The guest lecture would paves way towards the following outcomes

- ✓ A deeper understanding of the evolving capabilities of FEM tools
- ✓ Insights into how FEM is being used to tackle new and challenging engineering problems
- ✓ Awareness of the role of machine learning in pushing the boundaries of FEM simulations
- ✓ Inspiration to explore the vast potential of FEM research and applications

This lecture is ideal for anyone interested in staying ahead of the curve in the field of engineering simulations. Whether you're a student, engineer, or researcher, you'll gain valuable knowledge and be exposed to the exciting future of FEM technology.

# Photos

The screenshot shows a Cisco Webex meeting interface. The main slide is titled "Memory Interface Protocols" and contains two diagrams. The left diagram is a tree structure showing "DRAM-based (DRAMs)" branching into "Standard DDR", "Mobile DDR", and "Graphics DDR". "Standard DDR" includes "Form-Factor" (DIMMs, DRAM on PCB) and "Discrete DRAMs" (consumer applications, digital home, etc.). "Mobile DDR" includes "DRAM on PCB, PoP" and "Mobile, automotive systems". "Graphics DDR" includes "DRAM on PCB, PoP" and "TVS and integrated GPUs". The right diagram is a "Simplified block diagram of the interface between DRAM and GPU", showing the "GPU SIDE" (Command/ADD, GPU PLL, Oscillator, Training Circuit, CORE) and "DRAM SIDE" (MUX, PLL, CORE) connected via "DRAM ADDRESS" and "DRAM DATA" buses. A caption below reads "Figure 1. Simplified block diagram of the interface between DRAM and GPU".

Screenshot of the online Meeting

The screenshot shows a Cisco Webex meeting interface. The main slide is titled "How to improve the Eye diagram after the channel" and lists several methods to counter channel loss:
 

- Need to counter the channel loss by either,
  - Equalizing at the Receiver side- CTLE (Continuous time Linear Equalizer), DFE (Decision Feedback Equalizer)
  - Equalizing at the Transmitter side (Feed Forward Equalizer)
  - Repeaters (If cable length is long we can keep Repeaters in between)

 Below the text are three diagrams:
 

- A graph of "Channel response" showing Amplitude vs. Frequency with a downward-sloping curve.
- A graph showing "Equalizer" (red dashed line), "Overall" (blue solid line), and "Channel" (black solid line) responses, where the equalizer compensates for the channel loss.
- A graph of "Gain (dB)" vs. "Frequency (Hz)" showing gain curves for "gain1.1V", "gain1.0V", and "gain1.05V".

 To the right is a "Schematic diagram" of a CTLE circuit, showing an input node with a resistor  $R_L$  and a capacitor  $C_{in}$ , followed by a series resistor  $R_1$  and a parallel combination of a capacitor  $C_{in}$  and a resistor  $R_2$  connected to ground. The output node has a resistor  $R_L$  and a capacitor  $C_{out}$  to ground. The schematic is labeled "CTLE - curve & Schematic diagram".

Screenshot of the online Meeting

**National Seminar on "Recent research trends using Finite Element Method Tool" by  
Communication Systems Research Group, Department of ECE, KLEF - Reg.**

Registrar <registrar@kluniversity.in>

Thu 2/11/2021 11:54 AM

To: PRESIDENT <president@kluniversity.in>; Havish <havish@kluniversity.in>; Raja H Koneru <krh@kluniversity.in>; Dr. S S Mantha <ssmantha@kluniversity.in>; Dr. Venkat <drvenkat@kluniversity.in>; Vice Chancellor - KLU <vc@kluniversity.in>; N Venkat Ram <venkatram@kluniversity.in>; Sreenivasulu <nikhi\_bt@kluniversity.in>; Dr. B. Jayakumar Singh <jksingh@kluniversity.in>; Dr. Burra V L S Prasad <pburra@kluniversity.in>; Vemuri Praveen Kumar <vemuripraveen@kluniversity.in>; sudhamani <sudhamani@kluniversity.in>; Mahi <drmahi\_bt@kluniversity.in>; Giridhar Kanuri <giridharkanuri@kluniversity.in>; Dr. Karthikeyan S <karthikeyan@kluniversity.in>; Nadeem Siddiqui <siddiqui@kluniversity.in>; Dr. ARUN C <carun@kluniversity.in>; Dr. Ashish Runthala <ashish@kluniversity.in>; 1318 <felicebt@kluniversity.in>; M. Maheswara Reddy <mahesh\_bt@kluniversity.in>

📎 1 attachments (4 MB)

ECE COMSOL webinar poster.jpg;

Ref: KLEF/RO/HOD-ECE/2020-21

Date: 11-02-2021

Orders of the Vice-Chancellor dt.11-02-2021

**CIRCULAR**

Sub: National Seminar on "**Recent research trends using Finite Element Method Tool**" by  
Communication Systems Research Group, Department of ECE, KLEF - Reg.

Ref: Letter dated 10.02.2021 from Dr. Joshita C, Assoc. Professor, ECE forwarded by  
Dr. M. Suman, HoD-ECE.

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This is to inform that Communication Systems Research Group, Department of ECE, KLEF, in association with IETE, Vijayawada chapter, is conducting a National online seminar on "**Recent research trends using Finite Element Method Tool**" for all the students, faculty and research scholars as per the details given below.

Speaker : Dr. Vineet David, Director of India operations, COMSOL Pvt. Ltd.

Date and Time : 18.02.2021 (Thursday), from 3.00 p.m. to 4.00 p.m.

Link for registration : <https://www.comsol.co.in/c/bhmv>

Program Convener : Dr. Joshitha C, Associate Professor, Department of ECE, Mobile  
No.9074545969, E-mail Id: joshi1509@kluniversity.in

Program Co-Convener: Dr. Lakshman Pappula, Associate Professor, Department of ECE

Department Chair : Dr. V. K. Mittal, Professor, ECE

Program Chair : Dr. M. Suman, Professor & HOD, ECE

Dr. M. Gowtham, Professor & HoD-ECE, KLH

CSRG Group-Head : Dr. K. S. Ramesh, Professor, ECE

All the interested students, faculty members and research scholars can participate in the seminar after the successful registration using above mentioned link.

Poster of the seminar is attached herewith.

**Encl: Poster**

*Mail & Hard copy to:* Hon'ble President, KLEF

*Mail to:* Hon'ble Vice-Presidents, KLEF

*Mail & Hard copy to:* Hon'ble Chancellor / Hon'ble Pro Chancellor / Hon'ble Vice-Chancellor

*Mail & Hard copy to:* OSD to Hon'ble Chancellor-Dr.K. Subrahmanyam

*Mail & Hard copy to:* Pro Vice-Chancellor (Administration)-Dr.N.Venkatram

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HoDs..Maths / PHY / CHEM / ENG / BES-I / BES-II

HoDs..MBA / BBA / COM / HM / CSS / CA&MS / Law / Architecture / Pharmacy / BCA / Arts

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*Mail to:*KL H HoDs..CSE / AI&DS / ECE / BS / H&S / ME

**Mail to: All faculty**

**Mail to: All students**

**Mail to: All research scholars**

Thanks & Regards



**Prof. Y. V. S. S. V. Prasada Rao**  
Ph.D(Mech. Engg.), DPM., MBA (Fin & HR), FICWA  
**REGISTRAR**

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**Participant List**

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3.	190040042	BANDI NANDITHA	ECE
4.	190040049	BATTULA RAVI TEJA	ECE
5.	190040123	DOMMETI SAI RAMYA	ECE
6.	190040147	GOLLAPUDI V N S S R KOUNDINYA	ECE
7.	190040152	GORRE SAHITHI	ECE
8.	190040172	GURRALA JAHNAVI	ECE
9.	190040194	KALAPALA THANUSHA	ECE
10.	190040243	KOMMANABOYINA JYOTHI KIRAN BABU	ECE
11.	190040262	KOTA SIVA SWATHI	ECE
12.	190040305	MANDADAPU PUJITHA	ECE
13.	190040362	NARANDAS VIJAYA LAKSHMI	ECE
14.	190040378	P NITHIN	ECE
15.	190040389	PALLAPOLU KALYANCHAKRAVARTHY	ECE
16.	190040394	PAMURU VISHAL REDDY	ECE
17.	190040472	SHAIK MASTAN VALI	ECE
18.	190040504	SWARNA RAMA VAMSI	ECE
19.	190040506	SYAMALA NAGA KOTI REDDY	ECE
20.	190040510	SYKAM NIKHITHA	ECE
21.	190040535	VADLA SREEDHAR	ECE
22.	190040571	VINUKONDA SRUTHI HASINI	ECE
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25.	190040587	YEMINENI CHAKRAVARTHI	ECE
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28.	190040625	PULLA ADITHYA VARDHAN	ECE
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33.	2000040040	SATHVIK GANGARAJU	ECE
34.	2000040069	YOGINDRA PHANI RAJU KANUMURI	ECE
35.	2000040110	PALNATI HARI PRAKASH	ECE
36.	2000040136	DUTTA SIVAMANI	ECE
37.	2000040210	TIRUMALASETTY DISNEY PARDHASARADHI	ECE
38.	2000040214	BOLLOJU VEERA BHADRA SRINISH	ECE
39.	2000040279	SIFA CLEMENCE	ECE
40.	2000040284	BALAM RUFUS	ECE
41.	2000040292	RAHUL SUBHASH BHANGE	ECE
42.	2000040038	GANAPAVARAPU JYOTHI SWAROOP	ECE

43.	2000040001	ANUMOLU PADMAVATHI	ECE
44.	2000040018	B L GNAPIKA	ECE
45.	2000040031	DADANI POOJA	ECE
46.	2000040066	KAMBHAMPATI HAVEELA	ECE
47.	2000040073	JOHN KAMAL KATEKELA	ECE
48.	2000040080	KORUKONDABATTAR VARUN KRISHNA	ECE
49.	2000040106	PATNAIK MOHAN SANDEEP	ECE
50.	2000040114	PONNURU SRI VARSHA	ECE
51.	2000040130	SHAIK ALTHAF HUSSAIN	ECE
52.	2000040143	TAMMA MONIKA REDDY	ECE
53.	2000040145	KOLLURU TARAKA CHANDRA SRIKAR	ECE
54.	2000040148	TUMMALA HRUDAY	ECE
55.	2000040152	VANGA SAI TARUN REDDY	ECE
56.	2000040156	GANIPISETTY VENKATA SIVA PRAVEEN	ECE
57.	2000040164	YARRAGUNTLA DEEPIKA JYOTHI	ECE
58.	2000040169	GADAMSETTI PAVAN TEJA	ECE
59.	2000040179	VARI GAYATHRI	ECE
60.	2000040201	MUTYALA HORA SATYA MADHU BABU	ECE
61.	2000040206	SHAIK MUNNA	ECE
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