

IEEE EDS MJCET Celebrates Transistor Week

The following events were organized as a part of transistor week celebrated by IEEE EDS Chapter.

Day 1: Chapter Inaugural and Online DL Talk

The IEEE EDS SB MJCET organized its First Distinguished Lecture talk on the topic 'Birth And Evolution Of Semiconductor Devices: 75 Years Of Transistor And Its Impact On Humanity' by distinguished lecturer Dr. M.K. Radhakrishnan on 17th January 2022 from 3:00 pm. To celebrate the 75th year of Transistor invention the DL talk was planned as part of Transistor Week. The newly formed IEEE EDS SB MJCET was officially inaugurated by Dr. M.K. Radhakrishnan followed by which the DL talk was delivered. The DL talk was attended by 80 participants which included 50 IEEE members.

Day 2: Webinar on Career Opportunities in VLSI Design

The IEEE EDS SB MJCET organized a webinar for ECE students was organized on the topic of 'Preparation Strategies For Job In Electronics' by Dr Mohammed Arifuddin Sohel, Professor and Head ECE Department, MJCET on 18th January 2022 at 3 p.m.

The webinar mainly focused on career opportunities in vlsidesign ,vlsi companies in India and list of vlsi service based companies. Also an overview on support provided by government organisations was presented.The webinar was attended by 80 candidates of which 50 are IEEE members and 30 are non IEEE members.

Day 3: Quiz on Transistors

The IEEE EDS student branch MJCET, organized a Quiz Competition for the students of MJCET on 19th January 2022. The Quiz was based on the lectures delivered during the transistor week and some basic electronic concepts.

This Quiz competition was conducted to test how much the students were able to gain from the transistor week lectures and also to facilitate interaction between the team members and the participants.The session was conducted through kahoot online platform where the questions were framed based on Distinguished lecture talk, webinars and basics of electronics hosted as part of transistor week. There were a total of 60 participants in the quiz competition. At the end, the participants were asked to fill a feedback form, for improving in the future events.

Day 4: TED-MJ Talks by student

The IEEE EDS SB MJCET organized a TED talk session as part of Transistor Week for the students of MJCET on 'Latest Technological Innovations' on 20th January 2022 at 3 p.m.

To Celebrate the 75th year of transistor invention, the TED talk was organized to give the participants an understanding of how technology has evolved and impacted the human lives.

The Ted talk started with a presentation by the members of the IEEE EDS team on the topic 'Understanding the different specifications of hardware devices and how they compare to older devices'. The session was then followed by presentations from the audience. The session was attended by 50 students including 30 IEEE members and 20 Non-IEEE members.

Day 5: Scientific Reading and Analysis

A webinar session for ECE students was organized by IEEE EDS SB MJCET on the topic "Scientific Reading and Analysis" by Dr.AyeshaNaaz, Professor, ECED. The session was scheduled on 21st January at 3 p.m. and 70 candidates attended the event.

In the webinar, the lecturer talked about how scientific papers are to be read and analyzed. The session was interactive and very insightful, the speaker also clarified any doubts regarding the topics discussed in the session.

The session was beneficial for everyone interested in scientific paper publications in good conferences or journals.

Distinguished Lecture on SPICE and Verilog-a Modelling using Open Source Tools by Dr. WladekGrabinski

The IEEE EDS SB MJCET organized a Distinguished Lecture talk on 'SPICE and Verilog-a Modelling using Open Source Tools' by distinguished lecturer Dr.WladekGrabinski on 25th January 2022 from 3:00 pm. A total strength of 99 Participants was recorded which included 50 IEEE members and 49 non IEEE members.

In the webinar, the lecturer talked about various open source tools for Verilog modelling. The session was interactive and informative, the speaker also clarified any doubts regarding the topics discussed in the session. At the end of the session, a feedback form was filled by the participants for any improvements in the upcoming events.

Distinguished Lecture on Fundamental Insights into Channel and Gate Engineered Double Gate Junction-Less Transistor by Dr. Manoj Saxena

The IEEE EDS SB MJCET organized a Distinguished Lecture talk on ‘Fundamental Insights into Channel and Gate Engineered Double Gate Junction-Less Transistor’ by distinguished lecturer Dr. Manoj Saxena on 23rd February 2022 at 2:30p.m. The DL talk was attended by 80 participants which included 55 IEEE members and 25 non- IEEE members.

In the webinar, the lecturer talked about necessity of scaling, challenges faced by scaling and also structure of the transistor. The session was interactive and very insightful, the speaker also clarified any doubts regarding the topics discussed in the session.

At the end of the session, the participants were told to take quiz to get to know their understanding in the topic and a feedback form was filled by the participants for any improvements in the upcoming events.

The screenshot shows a Zoom meeting interface. The main window displays a presentation slide with the following content:

- Challenges in Scaling Conventional MOSFET Contd...**
- Enhancement in Sub-threshold Slope**
- S is a measure of how sharply the drain current increases as a function of gate voltage during switching from 0 to V_{th}
- Equation:
$$S = \left(\frac{d(\log_{10} I_{DS})}{dV_{GS}} \right)^{-1}$$
- Equation:
$$= \frac{kT}{q} \ln(10) \left(1 + \frac{C_{dep,min}}{C_{oxe}} \right) \cong 60 \left[1 + \frac{C_{dep,min}}{C_{oxe}} \right]$$
- How to minimize Sub-threshold Slope??**
- Diagram of a MOSFET structure with labels: Gate, Source, Body, Drain. Capacitors C_{ox} and C_{dep} are indicated.
- Graph showing Drain current I_D (mA) vs. Gate voltage V_G (V). The graph shows a sub-threshold region with a slope of 60 mV/decade and a threshold voltage $V_{th} = 0.5$ V.
- Footer: IEEE DL @ EDS Muffakhamjah College of Engineering & Tech, February 23, 2022.

The Zoom interface shows a list of participants on the right, including Jaideep Kumar Nag, Manoj Saxena, SHAIK BAJI BABA 16041..., Maliha Naaz, Ayesha Naaz, AHMED FARZEENUDDIN..., SYED ILYAS JAWED 160..., MD MUSTHAQEEM 1604..., and 68 others.

Dr. Manoj Saxena discussing about the challenges in Scaling Conventional MOSFET

The screenshot shows a Zoom meeting interface. The main window displays a presentation slide with the following content:

- Moore's or Huang's Law**
- Diagram of a Raspberry Pi board with various components labeled: GPO HEADERS, RCA VIDEO OUT, AUDIO OUT, SD CARD SLOT (BACK OF BOARD), MICRO USB POWER (5V 1A DC), BROADCOM BCM2835 ARM11 PROCESSOR, CSI CONNECTOR CAMERA, HDMI OUT, ETHERNET OUT (ONLY ON BOARD MODELS), USB 2.0, and SD DISPLAY CONNECTOR.
- Text: "The first working monolithic devices ('flip-flop' logic IC employed four transistors) presented by Fairchild Semiconductor on May 26, 1960"
- Text: "The Raspberry Pi a tiny and brilliantly inexpensive proto-computer (\$25 as of 2014)"

The Zoom interface shows a list of participants on the right, including Wlodek Grabinski, Mohammed Abd..., Maliha Naaz, MAHEEN NAAZ 1..., sucharitha nagul..., M. Mohd. Sabir..., and 86 others.

Dr. Wlodek Grabinski presenting an overview of Moores's Law

M K Radhakrishnan is presenting

Birth and Evolution of Semiconductor Devices 75 Years of Transistor and Its Impact on Humanity

Dr. M.K. Radhakrishnan
radhakrishnan@ieee.org

IEEE EDS Distinguished Lecture
IEEE EDS Student Chapter, MJCET,
Hyderabad, India, Region 10
17 January, 2022
(Virtual Talk)

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Anutham Krishna
Rafath Unnisa
MOHAMMAD IRTEZA SA...
MOHAMMED ISMAIL 16...
Md. Zakir Hussain
67 others

M.K. Radhakrishnan
Maliha Naaz
Nazia Parveen
CHATLAPALLY SHRAVA...
Kamala
Peethala Kamala Kumari
You

Dr. Radhakrishnan delivering a Distinguished Lecture on Birth and Evolution of Semiconductor Devices: 75 years of Transistor and its Impact on Humanity