



IEEE – MVSR STUDENT BRANCH

Student Branch Code: 12161 , School Code: 41329276

The IEEE Student Branch of MVSR Engineering college in collaboration with MTT-S has organised a distinguished lecture on **Smart Radio Frequency Integrated Circuits** on 27th March 2015. The guest speaker is **Dr. Tian-Wei Huang** , Professor of Electrical Engineering, National Taiwan University.

Student Branch Mentor:

Dr. Atul Negi,
Professor, School of CIS,
University of Hyderabad.

Student Branch Advisor:

Mr. V. Ashwini Kumar,
Assoc. Professor, IT Dept.,
MVSR Engineering College.

WIE Student Branch Advisor:

Ms. Dr. G. Kanaka Durga,
Head, IT Department,
MVSR Engineering College.

Student Branch Counselor:

Ms. A.V.Vahini
Asst. Professor, IT Dept.,
MVSR Engineering College.

Student Branch Executive Committee:

Ch. Vinay Kumar – Chairman
E.Sanjana - Vice Chair
Soumya Reddy – Secretary
G .Vinay Kumar - Joint Secretary
P. Sushma – Treasurer

WIE Affinity Group:

K. Akshitha Reddy - Chairman
A. Shivani Reddy – Vice-chair
K. Pooja - Secretary
A. Manideep – Joint Secretary
D. Sreeya Reddy- Treasurer

Event details:

Date: 27th March 2015
Time: 10:30 am to 12:30pm
Venue: EEE/Mech Seminar Hall, MVSR Engineering College.
Number of attendees: 150

Guest Speaker:
Dr. Tian-Wei Huang
Professor of Electrical Engineering,
National Taiwan University.

Chief Guest:
Dr. Nukala Srinivas Rao,
SMIEEE; Chairman-MTT/AP/EMC-S

The event commenced with a welcome note by Mrs. A.V.Vahini, Student Branch Counselor



S. Apoorva singing a prayer song

Mr. V. Ashwini Kumar, Branch Advisor, IEEE SB MVSREC, addressed the gathering. He thanked Dr.Tian-Wei Huang for accepting the invitation and spending his precious time in giving a lecture on Smart RF Integrated Circuits.



Mr. V.Ashwini Kumar
Branch Advisor, IEEE SB MVSREC



Dr.Tian-Wei Huang,
Guest Speaker

Dr.P.A.Sastry, Principal, MVSR Engineering College addressed the gathering. He appreciated Dr.Tian-Wei Huang for his research work on 28 GHz transmitter design and power amplifier packaging for LMDS systems and was glad to have a lecture by him in the College.



Dr.P.A.Sastry
Principal, MVSR Engineering College.



Dr.Tian-Wei Huang
Guest Speaker

Later on, Dr.Tian-Wei Huang was requested to start the lecture on Smart RF Integrated Circuits. He began the lecture with the Introduction of Radio Frequency Integrated Circuits, its applications. He then explained how these circuits could be evolved as Smart RF Integrated Circuits.

He stated features of 5G Vision

- User experience :1Gbps
- >10x more devices.(M2M)
- Low Latency (1ms)
- Massive MIMO (>100Ant)
- Millimetre-wave (BW>1Ghz)
- Full –Duplexing
- Energy saving

Smart RF Integrated Circuits

The Characteristics like **Amplitude sensing/Auto Gain Control, Frequency sensing/Auto-Band Switching** play a key roles to make RFIC turn into Smart RFIC and expansion of its applications.

The above characteristics were explained as an outline of the Smart RFIC.

The main areas which were discussed are

Frequency Calibration

Digital-Calibrated Miller Frequency Divider

Auto-Band Switching for Multi-band B4G/5G Applications

Amplitude Calibration

1st order: Isolator, Circulator

3rd order: Linearizer for PA/LNA

QAM Calibration

Low group delay phase shifter

60-GHz 1024-QAM CMOS Transceiver





Dr.Tian-Wei Huang giving the lecture

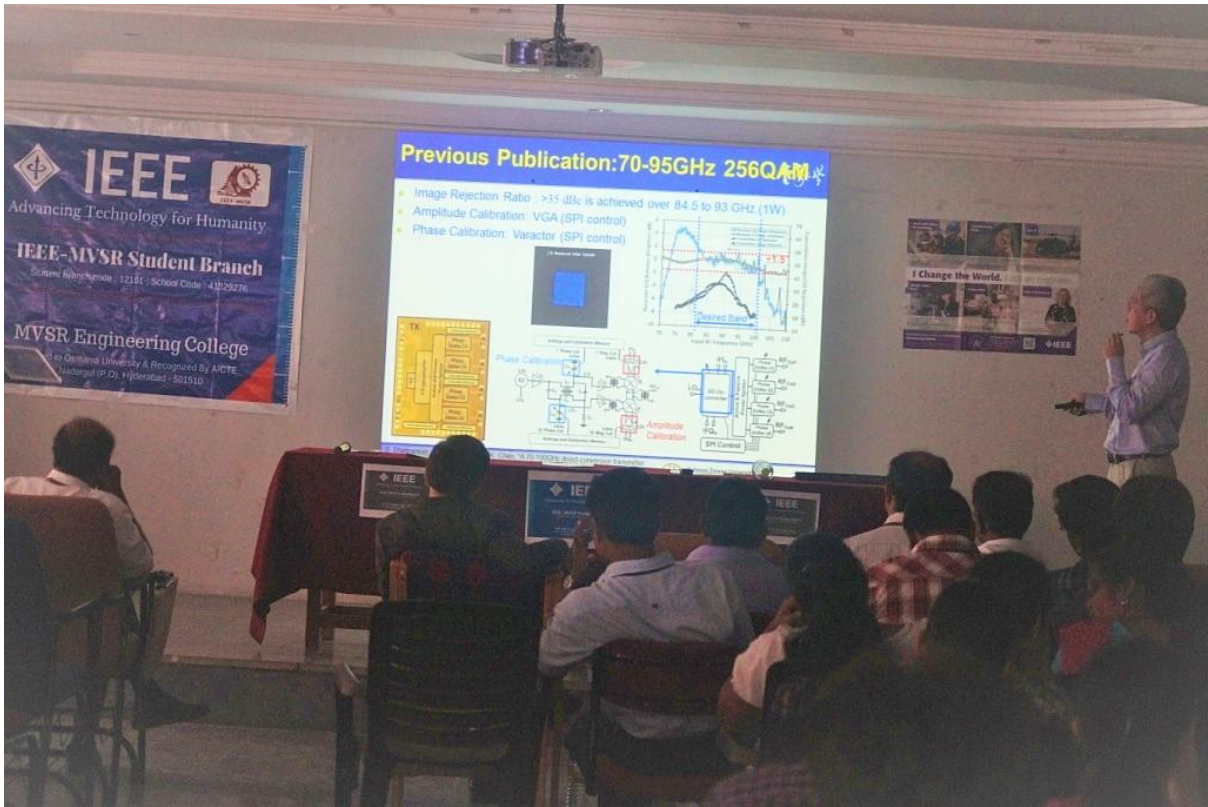
5G Vision 2020+

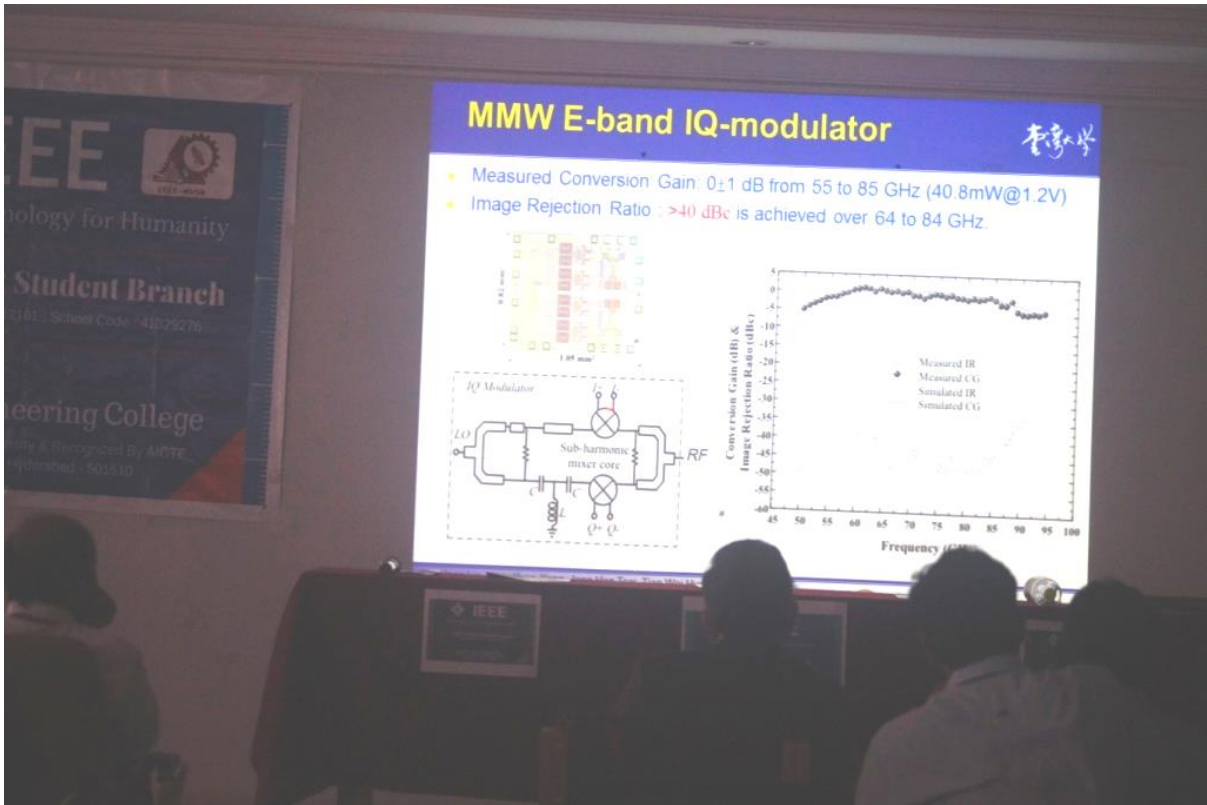
臺灣大學

- User Experience: 1 Gbps
- >10x More Devices (M2M)
- Low Latency (1ms)

'Smart' Robot
(ME+Control +DSP+Software)







Students listening to the lecture.

After the lecture, Dr.Nukala Srinivasa Rao; SMIEEE; Chairman-MTT/AP/EMC-Society gave few suggestions to Student branch members of IEEE SB MVSREC for further progress of Student Branch.

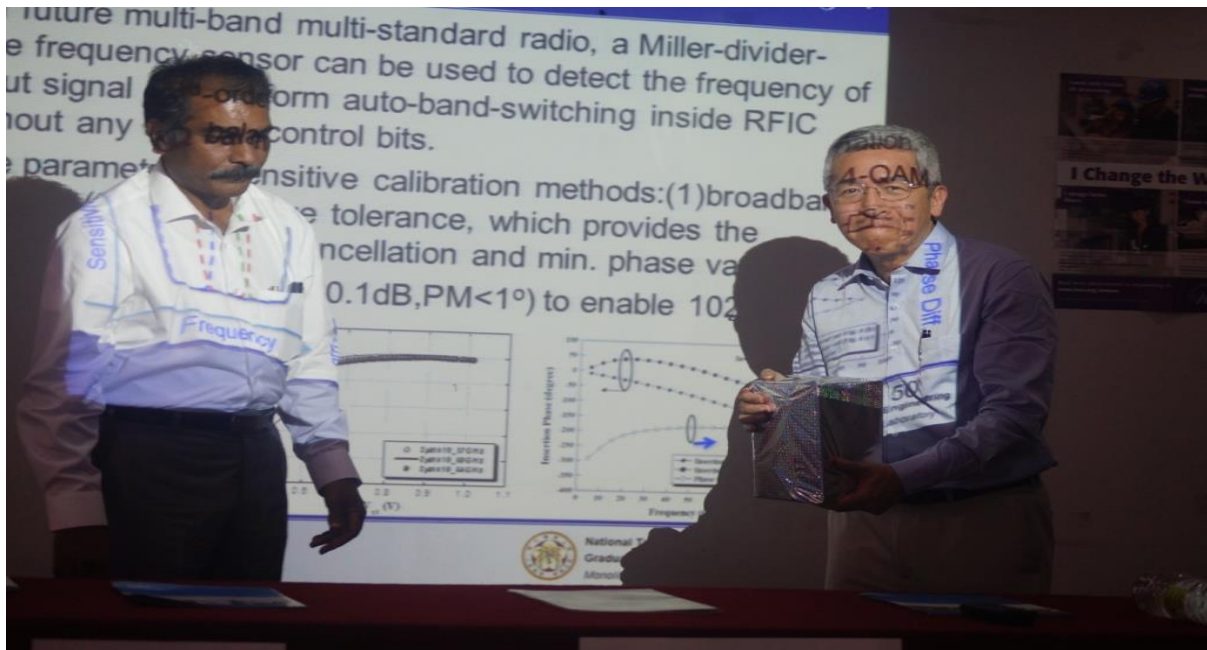


Dr.Nukala Srinivasa Rao; SMIEEE; Chairman-MTT/AP/EMC-Society



Dr.G.Kanaka Durga, Advisor, WIE AG felicitating Dr.Nukala Srinivasa Rao; SMIEEE; Chairman-MTT/AP/EMC-Society

Mr. V.Ashwini Kumar ,Branch Advisor, IEEE SB MVSREC gave a token of gratitude to Dr.Tian-Wei Huang for sharing his knowledge on Smart RF Integrated Circuits with the students and faculty of MVSR Engineering College.



From left: Mr. Ashwini Kumar, Branch Advisor and Dr.Tian-Wei Huang, Guest Speaker

The event ended with a vote of thanks by Dr.G.Kanaka Durga, Advisor, WIE-AG.



Dr.G.Kanaka Durga, Advisor, WIE AG proposing the Vote of thanks.



From left to right: Mrs. A.V.Vahini, Branch Counselor, Dr.G.Kanaka Durga, Advisor WIE AG, Dr.D.V. M.Chary, Head of EEE Dept., Dr.Nukala Srinivasa Rao; SMIEEE; Chairman-MTT/AP/EMC-Society, Dr.Tian-Wei Huang, Professor of EE, National Taiwan University & Mr. V. Ashwini Kumar, Branch Advisor, IEEE SB MVSREC

IEEE SB Executive Committee & members of MVSREC who took active part in organising the event



In the top row, from left to right: Mrs. A.V.Vahini, Branch Counselor, Dr.G.Kanaka Durga, Advisor WIE AG, Dr.D.V. M.Chary, Head, EEE Dept., Dr.Nukala Srinivasa Rao; SMIEEE; Chairman-MTT/AP/EMC-Society, Dr.Tian-Wei Huang, Guest Speaker, Mr. V.Ashwini Kumar, Branch Advisor.

In the bottom row, from left to right: G. Manisha, A. Shivani, J. Sruthi, K. Pooja, Sruthi, T. Soumya, K. V. Sirisha, P. Ramya, V.B. Mounika, Ch. Vinay kumar (Chairman, IEEE SB MVSREC), B. L. Sushmita, Karthik Sripathi.