

FDP on Advances in Optical Communication (AOC-2019) 9-14

February 2019

1. Title of the activity: Advances in Optical Communication (AOC-2019)

2. About the activity:-

a. Objective of FDP:

The objective was to provide an exposure to the participants to the various computational methods (like FEM, FDTD, TMM etc.) in the field of engineering, with experts from CSIR-CEERI Pilani and other academic CFTI institutions such as NITs/IITs including host institution. The technical program included mostly hands-on lab sessions, tool demonstrations, and discussion/presentation sessions with few lectures.

b. Program Detail:

Faculty Development Program on Advances in Optical Communication (AOC-2019) was jointly organized by EICT Academy, MNIT Jaipur and & Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur from 9th February to 14th February 2019

This FDP was inaugurated by Dr. S. N. Sharan, Director, School of Electrical and Electronics Engineering, Manipal University Jaipur and Dr Suchandan Pal, Principal Scientist, CEERI Pilani. In the Inauguration ceremony Sh. Jaipal Meel Prof S L Surana, Prof. Ramesh Kumar Pachar, Prof S. K. Bhatnagar, Prof. Ghanshyam Singh (MNIT) and Prof. Mukesh Arora were present.

The inauguration ceremony was followed by the invited talk from Dr. Suchandan Pal, Principal Scientist, CEERI Pilani. Dr. Manish Mathew, Senior Scientist, CEERI Pilani Prof. V Sinha, Emiritus Professor, MNIT Jaipur, Dr. Yogita Kalra, Associate Professor, Delhi Technological University, Dr. Manish Tiwari, Professor, Manipal University Jaipur, Prof. Anajan Basu, Head-CARE, IIT Delhi, Dr. Ravi Kumar, MNIT Jaipur, Prof. Y. K. Vijay, President, Vivekanand Global University Jaipur (Former Professor University of Rajasthan, Jaipur, Prof. R S Meena, RTU Kota enlighten on the theme of Advances in Optical Communication. Apart from that hands on practice session on optical tools was also taken by Dr. Monika Mathur, Dr. Rukhsar Zafar, Dr. Vinay Kanungo of host institute. A laboratory session on Optisystem was also engaged by Mr. Amandeep Singh and Mr. Varun Pandey (Expert from HRU System Inc). The student chapter of OSA at SKIT Jaipur was also inaugurated by Prof V. Sinha in the presence of Prof S. L. Surana, Prof. Ramesh Kumar Pachar, Prof S. K. Bhatnagar and Prof. Ghanshyam Singh (MNIT). The students of OSA chapter and participants were highly motivated. The Event ended with

Valedictory function and certificate distribution to the participants.

Program topics:

- Basics of Optical Communication, Photonic Crystals Fiber based Communication
- Nano photonics and Optical Characterization techniques of Thin Films
- Plasmonics and Metamaterial
- Optical sources and detectors
- Novel Antenna

c. Expected Outcome of FDP:

The FDP was:

- Having a content coverage based on new technologies which are going to be implemented in optical systems in near future.
- Helpful for participants to enhance his/her employability skills.

d. Type of FDP: National

3. Details of the activity:-

a. External Resource Person:

S.No	Name of Expert	Organization
1	Dr. Suchandan Pal	CSIR,CEERI Pilani
2	Dr. Manish Mathew	M. Mw. : Dr. Manish Mathew
3	Dr. Yogita Kalra	DTU, Delhi
4	Prof. Ananjan Basu	IIT Delhi
5	Prof. Manish Tiwari	Manipal University, Jaipur
6	Prof. R. S. Meena	RTU Kota
7	Prof. Y.K. Vijay	VGU, Jaipur
8	Prof. V. Sinha, Eminent Professor	MNIT, Jaipur
9	Prof. Ghanshyam Singh	MNIT Jaipur
10	Mr. Amandeep Singh	Optisys Expert ,HR

		Universal Systems Inc., New Delhi
11	Mr. Varun Pandey	HR Universal Systems Inc., New Delhi
12	Mr. Manoj Kumar Falaswal	Government Women Engineering College, Ajmer

Internal Resource Person:

S.No	Name of Expert	Organization
1	Dr. Rukhsar Zafar	Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur
2	Dr. Monika Mathur	Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur
3	Dr. Vinay Kanungo	Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur

b. Number of participants:

Faculties/ Participants: 24

S.No.	Ref.No.	Name	Category	Gender	Organization	Present Employment
1	2551	Durgesh Kumar	OPEN	M	Poornima College of Engineering, Jaipur	Faculty
2	5029	Priyanka Pathak	OPEN	F	SKIT, M&G, Jaipur	PG Student
3	2351	Ruchi Sharma	OPEN	F	VIT Jaipur	Faculty
4	5013	Puneet Sharma	OPEN	M	Birla Institute of Technology Mesra, Jaipur Centre	Faculty
5	5012	Surendra Kumar Saini	OBC-NCL	M	Jaipur National University	Faculty
6	5007	Deepak Bansal	OPEN	M	Global Institute of Technology, Jaipur	Faculty
7	5009	Manoj Sain	OBC-NCL	M	Jaipur National University	Faculty
8	4994	Sandeep Kumar Jain	OPEN	M	Vivekananda Institute of	Faculty

					Technology, Jaipur	
9	5003	Brajraj Sharma	OPEN	M	SKIT, M&G, Jaipur	Faculty
10	4942	Ashish Kumar Jangid	OBC- NCL	M	Poornima College of Engineering, Jaipur	Faculty
11	4861	Sakar Gupta	OPEN	M	Poornima College of Engineering, Jaipur	Faculty
12	4957	Ruchika Singh	OPEN	F	SKIT, M&G, Jaipur	Research Scholar (PhD)
13	4949	Satyendra Kumar	OBC- NCL	M	St. Wilfred's PG College Jaipur	Faculty
14	4956	Lalit Kumar Lata	OPEN	M	SKIT, M&G Jaipur	Faculty
15	4955	Harshal Nigam	OPEN	M	SKIT, M&G Jaipur	Faculty
16	4947	Kamal Kishor Choure	OPEN	M	Poornima Institute of Engineering & Technology, Jaipur	Faculty
17	4951	Vivek	OPEN	M	ANAND ICE	Faculty

		Bhojak			JAIPUR	
18	2296	Birendra Kumar Pandey	OPEN	M	Mahatma Gandhi Engineering College, Jaipur	Faculty
19	2625	Renu Sharma	OPEN	F	MNIT Jaipur	Research Scholar (PhD)
20	4484	Manju Choudhary	OPEN	F	SKIT, M&G, Jaipur	Research Scholar (PhD)
21	3989	Ankit Vijayvargiya	OPEN	M	SKIT, M&G, Jaipur	MNIT PhD Student
22	2322	Ankur Saharia	OPEN	M	MNIT Jaipur	MNIT PhD Student
23	2324	Nitesh Mudgal	OPEN	M	MNIT Jaipur	MNIT PhD Student
24	2502	Ankit Agarwal	OPEN	M	SKIT, M&G, Jaipur	MNIT PhD Student

c. Attainment of the objective: The FDP attained all the desired objectives

d. Brief proceedings of each day of activity:

Expert Lecture details during FDP AOCS				
S.N	Title of Lecture	Delivered by	Date	Affiliation
1	Fundamental Integrated-Optic Devices and Components for Communication and Sensing: An Overview	Dr. Suchandan Pal	09-Feb	CSIR CEERI Pilani
2	III-Nitride devices their fabrication and applications	Dr. Manish Mathew	09-Feb	CSIR CEERI Pilani
3	Photonic Crystals and their applications	Dr. Yogita Kalra	10-Feb	DTU Delhi

4	Photonic Crystal Fibers: Unfolding Exotic optical properties through creativity	Dr. Manish Tiwari	11-Feb	Manipal University Jaipur
5	Supercontinuum Generation in Photonic Crystal Fibers			
6	5G Antenna, Status and Challenges”	Dr. R S Meena	11-Feb	RTU Kota
7	Metamaterial and its Scope in 5 G Antenna”			
8	Photonics & Devices	Dr. Y K Vijay	12-Feb	VGU Jaipur
9	Some comparative aspects of Fibre and Wireless Communication	Dr. V Sinha	12-Feb	Retd. Prof. MNIT
10	Error Control Coding for Reliable Transmission			
11	Novel Antenna Technologies	Dr. Ananjan Basu	13-Feb	IIT Delhi
12	Microwave Measurements			

Lab details during FDP AOCS		
S.N	Details of Lab Session	Date
1	Hands on High Frequency Simulation Software	10-Feb
2	Hands on FDTD tool	11-Feb
3	Hands on OptiSystem	12-Feb
4	Hands on Lumerical Tool	13-Feb
5	Hands on FDTD tool	14-Feb

4. Enclosures:

a. Brochure:

Organized by
Electronics & ICT Academy



MNIT Jaipur
<http://www.mnit.ac.in/eict>

In Association with



**Swami Keshvanand Institute of
Technology, Management &
Gramothan, (SKIT,M&G) Jaipur**

Faculty Development Programme
Sponsored by



Department of Electronics
& Information Technology
Ministry of Communication
& Information Technology
Government of India.



Ministry of Electronics & Information Technology
Government of India
meity.gov.in/contents/schemes-projects

**Chairman, Advisory Board, EICT
Academy**
& Director MNIT Jaipur
Prof. Udaykumar R. Yarangatti

**Academic Chair, EICT
Academy Prof. V. Sinha**

**Chief Investigator, EICT
Academy Prof. Vineet Sahula,**
ECE

Co- Chief Investigators, EICT Academy
Dr. L. Bhargava, ECE
Dr. Pili Emmanuel Shubbakar, CSE
Dr. C. Periasamy, BCE
Dr. S. J. Nanda, ECE
Head, ECE (Prof. D. Boolchandani)
Head, CSE (Dr. Giridhari Singh)

Preamble (Electronics & ICT Academy)
Government of India had announced a National Policy on Skill Development, which has set a target of skilling 500 million people by 2022 in the domain of Electronics & IT. Under the plan scheme of "Digital India Manpower Development", DeitY has set up seven Electronics and ICT Academies as a unit in 03 IITs, 03 NITs and 01 IIIT with an objective of faculty/mentor development/up gradation in the areas related to Electronics & ICT leading ultimately to improved employability of graduates/diploma holders. MNIT Jaipur has set up such an academy for providing specialized training to faculty and industry persons in the states/UTs of Rajasthan, Gujarat, Daman & Diu, Dadra Nagar Haveli.

(A) Issues-

1. IT Hardware and Electronics Manufacturing industry-availability of properly trained, skilled and qualified manpower
2. Number of quality PhDs generated in IT / Computer Science is very low
3. In E & ICT domain- there is a very high degree of obsolescence of existing technologies and faster emergence of newer technologies

(B) Approach-

1. A focused faculty training/ updation programme for IT, Electronics and related sectors
2. Spreading up and continuous updation regarding Emerging Technology
3. Training and consultancy services for Industry
4. Design, Develop and Deliver

Advances in Optical Communication

9 February-14 February, 2019

Venue: SKIT, M&G, Jaipur

One-week training program is being organized for faculty of engineering and technological institutions. It is also open to faculty, persons from industry and doctoral students of Indian organizations. The objective is to provide an exposure to the participants to the to the various computational methods (like FEM, FDTD, TMM etc.) in the field of engineering with experts from CSIR-CEERI Pilani and other academic CFTI institutions such as NITs/IIITs including host institution. The technical program will include mostly hands-on lab sessions, tool demonstrations, and discussion/presentation sessions with few lectures.

Program topics:

- A. Basics of Optical Communication, Photonic Crystals Fiber based Communication
- B. Nano photonics and Optical Characterization techniques of Thin Films
- C. Plasmonics and Metamaterial
- D. Optical sources and detectors
- E. Novel Antennas

Eminent Invited Experts: -

1. Dr. Suchandan Pal, Principal Scientist, Optoelectronic Devices Group CSIR-CEERI Pilani
2. Prof. Ananjan Basu, Head, Centre for Applied Research in Electronics (CARE), IIT Delhi.
3. Dr. Manish Mathew, Senior Scientist, CEERI Pilani
4. Dr. Yogita Kalra, DTU, Delhi

Academia Programme coordinators

Prof. Ghanshyam Singh	gsingh.ece@mmit.ac.in	9549654233 (M)
Dr. Rukhsar Zafar	rzaifar@skit.ac.in	8058318786 (M)
Dr. Monika Mathur	monikamathur16@gmail.com	9460265776 (M)
Dr. Swati Arora	aroraswati14@gmail.com	9829036054 (M)

Registration:

Registration is open to faculty, industry persons, doctoral and postgraduate students of Engineering. Participants will be admitted on a *first-come first-served basis*. Selected participants will be notified on or before 14th January, 2019. Participants may register on line at

http://www.mnit.ac.in/eict/acad_training_prg.php

Fee:

- > The one-time registration fee of Rs. 500/- would be applicable for each participant attending first time, irrespective of affiliation. This fee is not applicable for those participants, who have attended Academy training program earlier.
- (i) The participants from academia and research scholars are required to pay a further fee of Rs. 2000/- (faculty/research-scholars). Rest expenditure is sponsored by DeitY through Electronics & ICT Academy at MNIT Jaipur.
- (ii) However, the participants from industries, UG/PG students would pay a fee of Rs. 5000/-.
- (iii) Relaxation/rebate of 50% of course fee in (i) and (ii) is applicable for SC/ST candidates.

> **The fee covers the participation in the programme, registration material including tutorial notes, boarding (breakfast/lunch) on all the days of the workshop.** The travel and other expenses would have to be borne by the participants or their parent organizations.

> **Lodging and boarding of first 20 registered participants (outside Jaipur) would be provided free of costs on sharing basis in MNIT hostels.** However, the boarding for other outside participants is available at additional payment basis.

The organizers should receive the registration amount through online payment/NEFT/IMPS/DD.

Account Name- 'Electronics & ICT Academy MNIT Jaipur'	Account Number- 676801700483
Bank address- ICICI Bank, MNIT Campus Branch, Jaipur	IFSC Code- ICIC0006768

> Please pre-intimate your desire to participate through e-mail, before registration form reaches us.

Further query: Please visit us at (a): <http://www.mnit.ac.in/eict>,
(b) Email us: academy@mmit.ac.in

b. Details of funding:

MNIT/EICT/2018/27

MEMORANDUM OF UNDERSTANDING

BETWEEN

EICT Academy

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY, JAIPUR

JAIPUR-302017, RAJASTHAN, INDIA

AND

Organizing Institute

Swami Keshwanand Institute of Technology, Management
& Gramothan (SKIT, M&G)
Jagatpura, Jaipur - 302017
Rajasthan, India

[Handwritten signature]

1. PREAMBLE

Electronics & ICT Academy, Malaviya National Institute of Technology, Jaipur, Rajasthan (henceforth called- Academy) and the SKIT, MGC, Jaipur henceforth called Host- institution) here by agree to encourage academic and research cooperation through jointly organizing Faculty development programme for faculty of engineering/technology/other streams in furtherance of the development of learning as stipulated below.

Background:

The approval for setting up of Electronics and ICT Academies at IIT Kanpur, IIT Roorkee and MNIT Jaipur has already been issued by Ministry of Electronics & IT (Govt. of India) vide Administrative Approval No. 3(6)/2012-HRD(Vol.V)(Pt.), dated 09.11.2015

In order to facilitate the growth of IT/ITeS, Electronics Manufacturing industry the growth of entire spectrum of ICTE industry as a whole is essential so that a sustainable global market share could be carved out for India. For sustaining the growth of the IT-BPO industry, IT Hardware and Electronics Manufacturing industry, availability of properly trained, skilled and qualified manpower is essential.

The requirements in the areas of ICTE sector are unique as it has a very high degree of obsolescence of existing technologies and faster emergence of newer technologies that would require a shorter cycle of updation of curricula and launching of new courses, etc. Further, the quality of R&D is the weakest link for the IT and Electronics manufacturing Sector. Quality PhDs generated in IT / Computer Science is very low.

This emphasizes on the need for a focused faculty training/updation programme for IT, Electronics and related sectors. At present the initiatives taken by the Government through the UGC, AICTE, etc. for faculty updation are generic and holistic in nature and do not specifically focus on the emerging requirement of ICTE sector.

The above mentioned aspects have been addressed through launching a scheme for setting up of Electronics and ICT Academy at IITs, IIITs, NITs, etc. in the select Seven(07) States / UT's by the respective State Governments/UTs with financial assistance from Central Government- IIT Kanpur, IIT Guwahati, IIT Roorkee, MNIT Jaipur, NIT Warangal, NIT Patna and IIITDM, Jabalpur. This would ensure a wider spreading up of quality faculty development and continuous updation of faculty in an all-inclusive manner leading to an overall improved employability of the graduates at various levels in the academic institutions.

2. OBJECTIVE AND SCOPE

Each Electronics and ICT Academy would focus on improving the quality of faculty of institutes and colleges in the respective states/UTs which would result in improvement of quality of students there by making them industry ready and employable in the ICT/ Electronics Manufacturing industry.

Bakur

Both the Institution (MNIT & SKIT, MAG) shall encourage cooperation between researchers, academicians of both the institutes for organizing the faculty development programmes in the field of Electronics & ICT.

Target Beneficiaries: Faculty / Mentors of Engineering, Science, Arts, Commerce colleges & Polytechnics of the respective/neighbouring States/UTs. As an outcome of the faculty training, the graduates/ diploma passing out from their respective institutions would be benefited.

3. IMPLEMENTATION OF THE PROGRAMME

Both the institutes acknowledge that the FDP will be organized with following guidelines, broadly, and shall comply with the regulations and policies of the SKIT, MAG, Jaipur, India and Malaviya National Institute of Technology, Jaipur, India.

A. Responsibility of Host Institute

1. Preparation of brochure, and getting approval from CI, MNIT EICT Academy; printing of course material
2. Advertising and Mobilization of Delegates
3. Facilitating Lecture Hall with Audio Visual equipment
4. Facilitating Labs, Computers / Experiment kits
5. Stay arrangement (boarding and lodging) of the participants
6. Stay arrangement (boarding and lodging) of speakers
7. Pick & Drop of speakers
8. Marking attendance daily and Conduct of examination at the end of the course
9. Planning and controlling Schedule and Time Table
10. Preparing a summary report for MeitY – No of participants, states involved, No of women participants, No of participants for SC / ST category. Also, compiling feedback from participants.
11. Payment of Advertisement material (printing), Stationery (Book, pen, file folder), Certificates (printing), Course Handouts (printing / photocopy)
12. A registration fee of NOT more than Rs. 2500/- may be charged from each participant for ONE week programme (5-days programme); the same may be used alongwith any other grant from host institution to meet expenses as in Table of para 4. In case fee of more than Rs. 2500/- is charged, the net profits after expenditures settled by host-institution will be shared equally between both the institutions.

B. Responsibility of MNIT EICT

1. Permission to conduct the programme, approving brochure
2. Registration (one time) in MNIT EICT Portal at Rs 500/- of each participant
3. Payment towards Speakers Honorarium @ Rs 3000/- per one hour Lecture and Rs 1000/- per one hour lab session. (honorarium to be shared, in case of multiple experts in same slots)
4. Payment of travel of speakers (Max Two speakers air travel – Total Rs 24,000/-)
5. Approval of course material of experts

C. Joint responsibilities

Identified mutually

4. FUNDING

In furtherance of cause of research and education in multidisciplinary areas, the faculty/scientists of the two institutions are encouraged to submit joint faculty development programmes proposal to EICT Academy, MNIT Jaipur with their mutual consent and discussions regarding the scope and extent of such funded program to meet its goals. Following is suggestive template for the same as approved at MNIT Jaipur for on-campus programmes being organized by Academy.

Head of expenditure (approx. for 30 participants, 1 week programme)	Proposed Amount
Course - Coordinator	20,000
Honorarium to experts (Lectures + Lab hours approx 50% each) - Total 40 hours (@3000/- per lecture, Rs. 1000/- per lab hour)	80,000
Travel Support to Experts within India (Flight Travel upto 02 experts)	24,000
Contingency - Certificates, Memento, Posters, Registration Kit, Course Material, Stationery, other Miscellaneous & Contingent expenses, Local Travel	30,000
Paid by MNIT EICT Academy	154,000

Head of expenditure (approx. for 50 participants, 1 week programme)	Proposed Amount
Lunch, Tea & Refreshments (Morning and Evening), Drinking Water	26,000
Lodging, Breakfast and Dinner for Outstation Participants (May be charged from Outside Participants) at actuals	20,000
Lodging and Boarding for Experts (Host Institute Guest House)	10,000
Paid by Host Institute	36,000/-

May be charged from Outside Participants, at actuals

Total	1,90,000/-
--------------	-------------------

Contributions: MNIT EICT Academy > 80%, Host Institute < 20%
(provided Part payment can be charged by host institute/s)

5. JOINT PROGRAMS

Training programs, workshops, seminars may be jointly organized. The host institute will extend its facilities to organizers of the faculty development programme.

6. COMMENCEMENT AND TENTURE

This memorandum of Association (MoA) shall become effective on the date of signing for period of project duration unless either institute gives other a written notice of its desire to revise or terminate the MoU at least three months prior to its termination.

7. PROGRAMME COORDINATOR(S)

Host institution will have programme coordinator(s) identified for a specific programme. From that moment onwards this programme coordinator will form the coordination committee to help him, if needed. The Coordination committee will plan the activities of the FDP.

MNIT/ECT/62018/27

B. (i) No amendments, changes, alterations or modifications to this agreement shall be effective unless it is stated in writing and signed by both the parties and in certain cases, if required, upon approval by the competent authority of each party.

(ii) If any dispute or difference of any kind whatsoever arises between the parties in connection with the agreement, the party shall try to resolve the same by mutual discussions, failing which, dispute or difference shall be referred to the Head of both the Institutions. If all fails, courts of Jaipur, shall have exclusive jurisdiction on matters relating to this agreement.

On behalf of SKIT, M&G, Jaipur

Programme coordinator

1. Dr. Monika Mathur *mainif*
2. Dr. Ruchana Zafar *(Defar)*
3. Dr. Smiti Anora *Shrab*

Head of Institution S.K. Swana
Prof. (Dr.) S.L. Swana
Director (Academics)



On behalf of MNIT

Programme co-coordinator (if any)

Prof. Ghanshyam Singh
DepH. of ECE

Academic Chair/ Chief Investigator

ECT Academy

MNIT, Jaipur



c.

d. Souvenir: NIL

e. Proceeding : NIL

f. Photograph

