

Department of Physics and Electronics

Annual Report 2019-20

The college reopened for the academic year 2019-20 on 6th June 2019 for staff , on 11th June for II and III year students and on 27th June for I years

Student strength:

For Physics:

YEAR	STUDENT STRENGTH
I B.Sc.	191
II B.Sc	170
III B.Sc	180

For Electronics:

YEAR	STUDENT STRENGTH
I B.Sc	29
II B.Sc	46
III B.Sc	48

Results - II,IV,VI semesters of 2018-19

Physics:

YEAR	PASS PERCENTAGE
I B.Sc.	94.2%
II B.Sc	98.2%
III B.Sc paper VII	86.7 %
Paper VIIIA1	100 %
Paper VIIIA2	100%
Paper VIIIA3	99%

Electronics:

YEAR	PASS PERCENTAGE
I B.Sc	90.6%
II B.Sc	97.5%
III B.Sc paper VII	90%
Paper VIIIA1	100%
Paper VIIIA2	95.45%
Paper VIIIA3	100%

For this year the **Departmental duties** are as follows:

Ms.A.Sai Sandhya	-	Secretary
Mrs. P.Rani & M. Saraswathi	-	Treasurer
Ms. G.N.S.Neelima	-	Library In charge
Mrs. B.Swathi	-	Notice Board

Lab in Charge :

Mrs.P.Rani
Ms.K.Srilekha - Electronics Lab

Mrs.T.Durga Bhavani
Mrs.M.Lakshmi Durga - Physics Lab

Ms.G.N.S.Neelima , Mrs.T.Durga Bhavani, Ms. P. Anusha, Mrs. M. Lakshmi Durga, Ms. K. Srilekha joined the department from this year.

The work load was distributed equally among all the staff members. The seniors gave guidance on teaching techniques to the new staff members and prepared them for taking theory and practical classes.

Staff Achievements

- We have a great reason to rejoice as Rev.Sr.K.Showrilu has secured a Ph.D degree in Physics from BHARATHIAR UNIVERSITY, Coimbatore. Dr.Sr.Showrilu submitted her thesis on “**The Synthesis, Growth, Structure and Characterization of Crown Ether and Transition Metal Complex Family Crystalline Materials Containing SCN Chromophor DCTZ, BCTZ and BCBT**” on 07 August 2019. Faculty of department of

Physics and Electronics express their heartfelt congratulations on her success. We are proud of her achievement as it added a feather in the cap of our department profile.

- **Dr.Sr.K.Showrilu**, received the Best Scientist Award in Physics on **10th Jan. 2020** for her Paper titled, “ **Crystal Growth, Structural, SHG, NMR, SEM Etching Studies of a Novel Organic-Inorganic Crystalline Material : BCTZ**”.
- **Dr.A.Nirmala Jyothsna**, HOD of Department of Physics & Electronics has spread the name of St.Theresa’s College, Eluru as a sweet Fragrance to the far and wide, by securing the prestigious **DR. APJ Abdul Kalam Life Time Achievement National Award** on **29th Feb, 2020** for her remarkable achievements in the field of Teaching, Research and Publications, conferred by IISER an organization recognised by Govt. of India.

Activities of the Department

Academia - 2019 was organised by department of Physics and Electronics:

- The Department of Physics & Electronics was in charge of Academia-2019 on 23rd July for the whole college i.e. for both U.G and P.G sections. Different Competitions like **Essay Writing, Elocution , Debate , Power Point Presentations** etc, were conducted by all the Departments to encourage & bring out the inherent talents of the students. As a part of this the Department of Physics & Electronics has conducted a PPT Competition on “**Chandrayan in Exploration of Moon**” in which nearly 20 students have participated.All the PPTs were very innovative and informative. Dr.K.L.Saraswathi devi,HOD of Mathematics and Dr.ANirmala Jyothsna were the judges for the competition..

Activities of SCOPE club :

The Department of Physics and Electronics inaugurated Physics club “SCOPE” on **05th July 2019** at **3:00 P.M** in Room. No: 20. The II B.Sc. Physics students are the members of **SCOPE CLUB**.

Following are the office bearers for SCOPE CLUB

Scope Club President : P. Vani , II B.Sc. M.P.C-I

Scope Club Secretary : B. Amulya of II B.Sc. M.P.C-II

- The students gave **Power point presentations** on “**Basics of Interference**” and “**Fresnel’s Biprism**”. The PPT presentations were quite interesting and informative.

Following is the list of students who participated in PPT

1. M. Tejaswini II B.Sc. M.P.C-1
2. V. Mahathi II B.Sc. M.P.C-1
3. A. Jaswanthi Devi II B.Sc. M.P.C-1
4. G. Kavya II B.Sc. M.P.C-1

The Academic achievers of II and IV semesters were recognized and were awarded prizes by Dr.A.Nirmala Jyothsna, HOD of Physics & Electronics. The program ended with an inspirational message by Dr.A.Nirmala Jyothsna.

- Power point presentations on “**Astrophysics**” and “**Lasers in Communication**” has been conducted on **12th July 2019** as a part “**SCOPE CLUB**”

Following is the list of students participated in PPT

1. S. Swathi II.BSc. M.P.C-II
2. M. Sridevi II.BSc. M.P.C-II
3. S. Gnana Prasuna II.BSc. M.P.C-II
4. G. Geethanjali II.BSc. M.P.C-II
5. D. Navya Sri II.BSc. M.P.C-II

The program ended with a motivational message by Dr.A.Nirmala Jyothsna.

- Power point presentations on “**Solar Tree**” and “**Holography**” has been conducted on 19th July 2019

The following students presented PPT :

1. M. Navya II.BSc. M.P.CS
2. P. Pravallika II.BSc. M.P.CS
3. B. Nithya Sri II.BSc. M.P.CS
4. M. Bhavani II.BSc. M.P.CS
5. N. Rekha II.BSc. M.P.CS
6. M. Vidhya Sri II.BSc. M.P.CS

- The department of **Physics and Electronics** conducted **SCOPE club Valedictory** on 19th Feb 2020 in which a **PPT Competition** was held on different concepts of Physics, the students enthusiastically participated. Dr. A .Nirmala Jyothsna, HOD, Dept. of Physics & Electronics has inspired the students with her talk by informing the summer courses and future scope in the field of Physics.

Activities of E-hub:

- The Department of Physics and Electronics inaugurated the **Electronics club “E-hub”** on **11th July 2019**. The II B.Sc Electronics students are the members of Electronics club named as **E-Hub**. It was inaugurated with prayer.

The Office Bearers for E-Hub are

E-Hub President - Uma Asritha, II B.Sc. M.E.CS

E-Hub Secretary - Sai Tejaswini, II B.Sc. M.E.CS

A **Quiz Program** was conducted for all the E-hub members by the office bearers of E-hub. The students have actively participated in the Quiz Competition. The Winners of the Quiz and the Academic achievers of II & IV Semesters were recognized and awarded prizes by Dr.A.Nirmala Jyothsna, HOD of Physics & Electronics. The program ended with a motivational message by Dr.A.Nirmala Jyothsna.

- The department of **Physics and Electronics** conducted **E-Hub Valedictory** on 15th Feb 2020 in which the students of II B.Sc. M.E.CS have explained their projects on the topics Dancing LED's, Flashing LED's, Wire Less Power Transmission, Strobe Light, Water Level Indicator and Fire Alarm. Dr.A.Nirmala Jyothsna, HOD, Dept. of Physics & Electronics has motivated the students by notifying them the summer courses and future scope that are related to Electronics.

Staff Activities:

International Conference organized:

- The Department of Physics & Electronics along with Dept. of Chemistry has organized a **International FORUM on “Recent Trends in Physics, Chemistry & Allied sciences for Sustainable Development” (IFPCA 2019) sponsored by RUSA** on 27th & 28th Sept 2019. **Dr.Sr.K.Showrilu** was the Convener & **Dr.A.Nirmala Jyothsna** was the Organizing Secretary for the Forum. All together **6 papers were presented & published** by the staff of Dept. of Physics & Electronics and 4 papers were published by students of M.Sc. Physics.

Seminars & Workshops organised:

- The Department of Physics & Electronics has organized a Three day Workshop on **“Internet of Things”** on **29, 30 & 31 August 2019**. Sri. V. Govinda Rao, Director Technical **Microlink Peripheral Pvt. Ltd**, Vijayawada was the Resource person. More than 100 students of Physics & Electronics of III B.Sc. M.P.CS & M.E.CS actively participated in it. In this workshop the concepts & basic Electronics behind IOT & its application in Smart

technologies was very clearly explained. The students have put the theoretical knowledge into practice by developing some smart appliances like “LED blinking”, “Buzzer”, Relay ON & OFF, Bluetooth, Smart Mobile interface for home Automation, ADC interface for measuring temperature & Light intensity using IOT.

- **Dept. of Physics & Electronics**, has inaugurated a six Day Internship Program “**EMBEDDED SYSTEMS & IT’S DESIGNING**” on 13th NOV 2019 in collaboration with **MICROLINK Technologies**, Vijayawada, Sponsored by RUSA (2.0). This program is conducted from **13th Nov to 19th Nov 2019**. In this M.Sc. Physics & III B.Sc. Electronics students have participated in this during which they have learnt theoretical concepts & they have also learnt practical skills in doing the projects related to Embedded Systems. This Program is organized under the able guidance of Dr.Sr.K.Showrillu, Vice Principal & Dr.A.Nirmala Jyothsna, Head, Dept. of Physics & Electronics.
- **Dept. of Physics & Electronics**, has conducted a Workshop on “**PCB Designing & Manufacturing**” on **18th & 19th NOV 2019** in collaboration with **MICROLINK Technologies**, Vijayawada, Sponsored by RUSA(2.0). In this M.Sc. Physics & II B.Sc. Physics & I B.Sc. Electronics students have participated during which they have learnt theoretical concepts & they have also learnt Circuit designing using PCB Wizard, Etching process, Drilling, Mounting the Electronic components on PCB and they have all done three projects namely...Power Supply, Night lamp, & IR tester. This program instilled confidence in them so that they can take up more innovative & higher level projects in future. This Program is organized under the able guidance Dr.Sr.K.Showrillu, Vice Principal & Dr.A.Nirmala Jyothsna, Head, Dept. of Physics & Electronics.
- **Workshop on usage of ERDAS software** -- Training on RS & GIS image analysis was organized by the Dept. of Physics & Electronics in GIS lab. In this the resource person was Mr. Sai Venkateswar Reddy from Hexagon Solutions, Hyderabad. All together twenty faculty from dept of Physics, Mathematics, Chemistry, Computer science have participated in this training. This is a very useful tool to map the data used in different projects on 11th & 12th Dec 2019.
- **Celebration of Energy Conservation Week :**

As a part of **Energy Conservation Week celebrations**, the department of Physics and Electronics organized a *PPT competition* on 19th December 2019.. The participants presented papers related to Energy Conservation and Renewable Energy Sources . The

Students of the SCOPE Club gave PPT presentations on the topics related to Renewable Energy . They are as follows:

Types of Renewable & Non-Renewable Energy – M. Vani Srilatha II B.Sc.MPCI

How to Conserve Energy for Future Generations- V. Mahathi, II B.Sc.M.P.C I

Percentage of wastage of Energy – N. Chandra lekha, II B.Sc.M.P.C I

Energy audit & Energy Conservation across the world – A. Reshma II B.Sc.,MPC I.

Participation in Courses, Seminars & Workshops:

- Dr.A.Nirmala Jyothsna, Dr.Sr.K.Showrilu, Mrs.P.Rani, Mrs.M.Saraswathi and Mrs.B.Swathi participated in an **“International FORUM on Transformation of Public Health & Community Responsibility”** on 8th & 9th Aug 2019. Dr.A. Nirmala Jyothsna was the rapporteur for one of the technical sessions on 2nd day of the forum. Dr.Sr.K.Showrilu, Dr.A.Nirmala Jyothsna, Dr.K.Sreelatha & Ms.A.Anantha Lakshmi have presented paper on **“Research concepts in Modern Physics for Medicine”**.
- Dr.A.Nirmala Jyothsna, HOD, Dept. of Physics & Electronics along with the members of Dept. of Physics & Electronics have participated in an **“International Forum on Recent Trends in Physics, Chemistry & Allied Sciences for Sustainable Development”** on 27th & 28th Sept. 2019 and presented paper on **“Study on Variation of TOMS AI(AEROSOL INDEX) in Kerala State, India during Different years” & “Influence of Silver Ions on some Physical properties of LiI-AgI-B2O3 Glass System” & “Comparative study of DCTZ, BCTZ and BCBT Single Crystals”**.
- Dr.A.Nirmala Jyothsna, Head, Dept. of Physics & Electronics has participated in an **“International Conference-Impact of Gandhian Ideals on socio – Economic, Cultural and Literary Aspects”** on 29th & 30th NOV 2019 and published paper titled **“Mahatma Gandhi and Satyagraha – A Powerful Tool”**.
- Dr.A.Nirmala Jyothsna, Head, Dept. of Physics & Electronics along with the members of the Dept. of Physics & Electronics have participated in National Seminar on **“Modern Tools in Evaluation - A shift from Quantitative to Qualitative techniques”** on 5th December 2019 and she presented paper on **“Reforms in student Assessment”**.
- Dr.Sr.K.Showrilu and Ms.A.Sai Sandhya have attended an **“International Conference on Applications of physics, Chemistry and Engineering Sciences”** on 9th & 10th JAN 2020 at

Kuala Lumpur, Malaysia and presented papers on “Crystal Growth, Structure, SHG, NMR, SEM, ETCHING Studies of a novel organic – Inorganic crystalline material” & “Urban Material Identification and Classification from Hyperspectral using AMEE technique”.

- **NNRMS Course at IIRS, Dehradun**

Ms.A.Sai Sandhya, faculty of Department of Physics & Electronics has attended a Two month NNRMS course from **13th May 2019 – 5th July 2019** on “ **Satellite Image Analysis and Photogrammetry**” financially supported by College. The course was held at IIRS, Dehradun. She was awarded a certificate for successfully completing the program and she was conferred ‘A’ grade for the course.

IIRS Outreach Program

- **46th IIRS Course:**

As our college is a Network Institute of IIRS, Dehradun, the Department of Physics & Electronics has coordinated a Live & Interactive program on “**46th IIRS course on Advances in Remote Sensing and Geospatial technologies for Disaster early warning, monitoring and mitigation**” during **8th July 2019 – 12th July 2019**. All together 55 students and 10 faculty have participated in this program.

- **48th IIRS Course:**

As our college is a Network Institute of IIRS, Dehradun, the Department of Physics & Electronics has coordinated a Live & Interactive program - **48th IIRS Outreach program on “Digital Photogrammetry based 3D modeling”** during **29th July 2019 – 2nd August 2019**. Faculty of Department of Physics & Electronics have registered and attended this course.

- **50th IIRS Course:**

As our college is a Network Institute of IIRS, Dehradun, Dr. A. Nirmala Jyothsna, HOD, Department of Physics & Electronics is coordinating a Live & Interactive program - **50th IIRS Outreach program on “Basics of RS, GIS and GNSS”** which is currently being conducted from **19th Aug 2019 – 15th Nov 2019**. Faculty of Department of Physics & Electronics, other dept faculty, along with nearly 150 students of different streams have registered for this course and are attending the classes daily from 4p to 5 pm.

- **55th IIRS Course:**

As our college is a Network Institute of IIRS, Dehradun, the Department of Physics & Electronics has coordinated a live & interactive program on **55th IIRS Outreach program on “Web GIS –Geo-Visualization and online mapping ”** during 25th Nov 2019 – 29th Nov 2019. Faculty of Department of Physics & Electronics has participated in this program.

Guest Lecture on “Recent Advances in Nanoscience Research”

- A guest Lecture has been organized by Dept. of physics & Electronics on 22.08.2019. **Dr.K.Ramachandra Rao**, HOD, Govt. college, Rajahmundry was the Resource person. He enlightened the students on the topic **“Recent Advances in Nanoscience”** which was very interesting. The students of U.G. & P.G Physics have actively participated in this and gained knowledge.

Knowledge Extension Program:

- An extension program on **“LASERS - A Solution for Every Problem”** was put up on **21st Nov 2019** in our college auditorium by III B.Sc- MPC-II, the ward students of Ms.P.Anusha, Lecturer in Physics & Electronics. In this program the Principle of LASRS & Applications of LASERS in various fields like NASA Satellite Communication, Beauty Therapy, Medicine, Defense, Industry and other purposes are explained in detail with the help of interesting videos and Power Point Presentations.

Duties of the Staff:

Graduation Day

- Mrs.P.Rani & Mrs.M.Saraswathi were the Incharge of apparel for VIP’s.
- Mrs.B.Swathi is the Incharge for Felicitation on the stage & Uniform for graduates..
- **IIT Mumbai Course Coordinator**
- Electronics – Mrs. P. Rani
- Physics – Mrs. M. Saraswathi
- Mrs. P. Rani has registered 92 students of I, II & III M.E.CS students for **Expeyes & Introduction to Computers.**
- Mrs. M. Saraswathi has registered 153 students of I, II, III Physics students for
- **Expeyes & Introduction to Computers.**

- Mrs.B.Swathi is the member of **Women Studies**.

Other duties in College:

- Ms. A. Sai Sandhya, Mrs. M.Lakshmi Durga & Ms.G.N.S.Neelima have taken E.S classes for I. B.Com Finance, I B.B.A, I M.P.CS, I B.Com Computers.
- Ms.K.Srilekha has taken ICT Classes for **II B.Sc.** Home Science & **CALT** students.
- The Department of Physics & Electronics was incharge of distribution of College Day Invitations & Light & Sound arrangements.
- Dr.A.Nirmala Jyothsna & Ms.A. Sai Sandhya have composed a Tableau **“From Darkness to Light”** a message oriented program stressing the need for humans to be the lights of the world to eradicate the present burning issues of humanity.

Faculty Development Program :

- Nine of the faculty of Dept. of Physics & Electronics have attended **“Communication Skills – LSRW”** in two batches from 1st July to 14th August 2019 & from 17th Aug to 30th Sept 2019.

- **PROJECTS**

Student Projects:

The following projects were taken up by the Electronics cluster students as paper-VIIIA3 under the guidance of Dr.A.Nirmala Jyothsna , Mrs.P.Rani, Ms. A. Sai Sandhya & Ms. K. Srilekha & Project Viva will be on 10th March 2020.

1. Controlling Home Appliances using IR remote
2. Blind Walking Stick
3. Efficient Power Management System
4. GPS & GSM based vehicle tracking System
5. Smart Card based Door Security System
6. LPG leakage detector with indication using Microcontroller
7. Automatic plant Irrigation using Moisture sensor
8. Home Air quality Monitoring system
9. Intelligent Accident Prevention system for trains
10. RFID based Attendance system with SMS.

Examination duties

Practical Examiners:

Mrs. M. Saraswathi &

Ms.A.Sai Sandhya - I B.Sc. Physics paper –I

Mrs.M.Saraswathi - I B.Sc. Physics paper-II

Mrs.B.Swathi - II B.Sc.Physics Paper- III

Mrs.M.Saraswathi - I B.Sc. Physics paper-IV

Mrs.B.Swathi - III B.Sc. Physics paper –V

Ms.A.Sai Sandhya - III B.Sc. Physics Paper-VI

Mrs.P.Rani - III B.Sc. Physics paper-VII

Mrs.P.Rani &

Ms.S.Mounika - III B.Sc. Physics paper-VIII A1

Mrs.P.Rani - III B.Sc. Physics paper-VIII A2

Mrs.P.Rani - III B.Sc. Physics paper-VIII A3

Mrs.P.Rani - I B.Sc.Electronics Paper- I

Ms.A.Sai Sandhya - I B.Sc. Electronics paper-II

Mrs.P.Rani - II B.Sc.Electronics Paper-III

Ms.S.Mounika &

Ms.G.N.S.Neelima - II B.Sc.Electronics paper-IV

Mrs.P.Rani - III B.Sc.Electronics Paper – V

Dr.A.Nirmala Jyothsna - III B.Sc. Electronics Paper-VI

Dr.A.Nirmala Jyothsna - III B.Sc.Electronics paper-VII

Dr.A.Nirmala Jyothsna - III B.Sc.Electronics paper-VIII A1

Mrs.P.Rani - III B.Sc. Electronics paper VIII A2

Dr.A.Nirmala Jyothsna - III B.Sc.Electronics paper-VIII A3

We congratulate **Dr.Mrs.A.Nirmala Jyothsna**, H.O.D of Physics & Electronics for her dedicated & unwavering service towards the college as she has received “**Dr.APJ Abdul Kalam life time achievement National Award**” & **Dr.Sr.K.Showrilu**, Vice-Principal cum P.G.Directress for her studious & commitment towards the work as she has completed her Ph.D & she has also received the “**Best Scientist Award**” for her paper titled “**Crystal**

Growth, Structure, SHG,NMR,SEM, ETCHING Studies of a novel organic – Inorganic crystalline material”.

We thank God Almighty for his abundant blessings throughout the last semester. We are grateful to Dr. Sr.Marietta D’Mello, Principal & Dr.Sr.Showrilu, Vice-principal for their constant support and guidance for the smooth conduct of the events during this semester.

We owe our gratitude to Dr.Mrs.A.Nirmala Jyothsna ,H.O.D of Physics & Electronics for her affectionate guidance ,support and encouragement throughout the year.

A.Sai Sandhya
(Secretary)