

Department of Physics

Departmental Report 2021-22

I. Departmental Activities

1. The Astronomy Club 'The Astrophiles' organized a National Level Quiz and Essay competition on occasion of National Science Day 28th February 2022. The response to these competitions was overwhelming. Students of different colleges from Chennai, Ahmedabad, Indore, Odisha, Uttar Pradesh, Kochi, Calicut along with students from different parts of Maharashtra participated in these competitions. Along with students, a few interested citizens also participated in the quiz. The registration for Quiz competition was nearly 230. 40 students participated in essay competition. Mrs. Chhaya Abnave coordinated this activity along with Dr. Varsha Joshi, Head Department of Physics, the coordinator of Astro club. Mr. Saurabh Singh of T.Y.B.Sc. (Physics) the student coordinator and Mr. Satish Kumar contributed in the smooth conduct of the competitions.

Result of Essay Competition-

First Prize- Pranali Khedkar, Fergusson College, Pune

Second Prize- Nayana Shyjan, Christ College, Pune and Rohini Karale, Modern College Ganeshkhind, Pune

Third Prize- Anvisha Thakur, Omkar Khapre and Gayatri Dharmadhikari, Modern College Ganeshkhind, Pune

2. A student induction programme was arranged for first year students. They were given information of infrastructure and facilities available in the college, Library and sports facilities, examination, scholarships and cocurricular and extracurricular activities.

II. Staff achievements:

Dr. Varsha Joshi-

1. Awarded Ph.D. in Physics by Savitribai Phule Pune University. Topic of research was 'Studies on Synthesis and Characterization of Nano Material Coating for Musical Instruments' under the guidance of Dr. Sharmila Chaudhari, Principal, Anantrao Pawar College, Pirangut, Pune at the research centre in Physics, B. R. Ghoalp College, Sangvi Pune.
2. An Indian patent was published entitled "A method for making Nano Ink for coating Indian Percussion Instruments".

3. Participated in an online national conference on “Advance Materials, Technology, Applications and Education” organized by Department of Physics, Balasaheb Jadhav College of Arts, Commerce and Science, Ale, Tal. Junnar on 16th October 2021.
4. Participated in a two day online workshop on ‘Restructuring Syllabus of T.Y.B.Sc. (Physics) (CBCS) Pattern, organized by Board of Studies in Physics, SPPU in collaboration with PEDDA’s Annasaheb Magar College, Hadapsar on 4th and 5th June 2021.
5. Participated in a one day international webinar on “Nano materials for Energy generation and Smart Storage” organized by Department of Physics and IQAC, Miraj Mahavidyalaya, Miraj on 24th June 2021.
6. Participated in an online national webinar on “Career Opportunities in Physics” organized by Department of Physics and IQAC, New Arts, Commerce and Science College, Parner on 29th January 2022.

Mr. Mahendra Waghmare

1. Participated in a two day online workshop on ‘Restructuring Syllabus of T.Y.B.Sc. (Physics) (CBCS) Pattern, organized by Board of Studies in Physics, SPPU in collaboration with PEDDA’s Annasaheb Magar College, Hadapsar on 4th and 5th June 2021
2. Attended Online Workshop - New Revised syllabus for T.Y.BSc physics, SPPU, Pune at Ramkrishna More Arts, Commerce and Science College, Akurdi, Pune on 9th September 2021.

Dr. Pratibha Rao

1. Invited as a Resource Person on 7th September 2021 in “Summer Internship Program in Nanotechnology, Level-1” Organized by MES Abasaheb Garware College, Karve Road , Pune -411004

Mrs. Chhaya Abnave

1. Participated in Career Katta, jointly organized by Department of Higher and Technical Education, Government of Maharashtra and Maharashtra Information Technology Support Centre on 19th April 2022 at Modern College of Arts, Science and Commerce, Ganshkhind, Pune.
2. Attended Online Workshop - New Revised syllabus for T.Y.BSc physics, SPPU, Pune at Ramkrishna More Arts, Commerce and Science College, Akurdi, Pune on 9th September 2021.

III. Student Achievements:

1. Mr. Siddhant Nagimukh of T.Y.B.Sc. (Physics), NCC Cadet attended Republic Day Parade at New Delhi on 26th January, 2022
2. Mr. Pranay Sapkal of T.Y.B.Sc. (Physics) passed Wireman certification Examination conducted by Government of Maharashtra
3. Mr. Rohit Jadhav and Mr. Chaitanya Jaybhaye of T.Y.B.Sc. (Physics) participated in Versatalia, National Level Project Competition organized by PVG's College of Engineering, Pune on 30th April 2022.
4. Mr. Shlok Pillai and Mr. Abhishek Sharma of T.Y.B.Sc. (Physics) completed internship at Society for space Education Research and Development from 10th January to 21st February 2022.
5. Mr. Abhishek Sharma attended Introductory Summer School in Astronomy and Astrophysics (ISSAA) from 16th May–17th June 2022 organized by IUCAA.
6. Mr. Shlok Pillay of T.Y.B.Sc. (Physics) attended Workshop on Python with Space Applications on 5th and 6th December 2021 organized by Spaceonova and Fergusson College, Pune.
7. Mr. Shlok Pillay completed B1 Certification examination of Max Muller Bhavan from Goethe Institute in 11th August 2021.
8. Mr. Abhishek Sharma completed certificate course in Computer Hardware from Success Institute of Technology from 5th to 17th July 2021.
9. Mr. Abhishek Sharma completed a short term course titled 'Basic course in Astronomy- Introduction to Stars' conducted by breakthrough Science Society in association with Astronomical Society of India in December 2021.
10. Mr. Saurabh Singh of T.Y.B.Sc. (Physics) actively participated in different projects, internships, summer and winter training programmes, workshops and conferences all related to astronomy.

Projects:

- a) Completed project under Citizen Science Radio Astronomy (CSRA) in May 2022. CSRA is a great initiative by National Center for Radio Astrophysics (NCRA) and Center for Citizen Science (CCS).
- b) Completed project on Study of transit method and plotting data of TESS in Jan 2022 by collecting and analysing the data of Transiting Exoplanet Survey Satellite (TESS) from NASA's exoplanet archive.
- c) Completed International Asteroid Search Campaign (IASC): It is a citizen science program that provides high-quality astronomical data to citizen scientists around the world to make original astronomical discoveries. Saurabh with his team discovered 2 preliminary asteroids during 1st–26th Nov 2021.

Internship:

- a) Completed internship at Instituto de Astrofísica e Ciências do Espaço (IA) in July 2022 on The Cosmic Microwave Background Radiation (CMBR) under the supervision of Dr. Noemi Frusciante, Postdoc, IA/FCUL, Lisbon
- b) Completed internship at Society for Space Education Research and Development (SSERD) on Effect of the proper motion on the shapes of constellations from 10 Jan – 21 Feb 2022 under the supervision of Mr. Sundar M.N, DST INSPIRE Fellow, Jain University

Summer and Winter Program/School:

- a) Introductory Summer School in Astronomy and Astrophysics (ISSAA) from 16th May–17th June 2022 organized by IUCAA.
- b) Summer Particle Astrophysics Program from 3rd to 12th May 2022.
- c) International Astronomical Union (IAU) WIA third Training Program from 11th to 15th April 2022.
- d) Research Review Program (RRP) during February – March 2022.
- e) X-Ray Astronomy School from 7th to 10th March 2022.
- f) SOKENDAI Asian Winter School from 2nd to 4th February 2022.

Workshops:

- a) The HR Diagram with Remote Telescopes at Las Cumbres Observatory (LCO) from 2nd and 3rd Oct 2021.
- b) Online workshop on High Performance Computing (HPC) for Astrophysics by NCRA-TIFR and IIT Kharagpur from 20th to 23th September 2021.
- c) Zero Shadow Day Workshop by Inter University Centre for Astronomy and Astrophysics (IUCAA) from 13th May 2021.
- d) One Day RAD at home Astronomy Workshop (ODRAW) from 11th Apr 2021.
- e) One day online conference on Emerging Trends in High Energy Astrophysics organized by Department of Applied Sciences, Tezpur University in collaboration with Indian Association of Physics Teachers (IAPT) Rc-17 on 16th March 2022.

Conferences:

1. Emerging Trends in High Energy Astrophysics by Tezpur University in collaboration with the IAPT on 16th March 2022.
2. International Space University (ISU) Adelaide Conference on Space Junk and Overcrowding of the Skies from 4th and 5th Feb 2022.
3. The European Physical Society Conference on High Energy Physics (EPS-HEP). from 26th–30th Jul 2021.
4. International Astronomical Union (IAU) Communicating Astronomy with Public Conference (CAP) from 24th to 27th May 2022.

Dr. Varsha Joshi,
Head, Department of Physics