

*Vol. I, Issue I*



**OPJU**

UNIVERSITY OF STEEL TECHNOLOGY  
AND MANAGEMENT

# UNMESH

## NEWSLETTER 2023

### School of Science



**OP Jindal University, Raigarh (C.G.)**



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## Message by the Vice-Chancellor

“

The School of Science at OP Jindal University is an emerging and renowned department imparting the excellence in Science Education in the state of Chhattisgarh and in the Central India significantly. This promising department plays a crucial role to strengthen its students and scholars from various streams with brilliantly adopted methods of experiential learning, and consistently striving to make them perfectly employable equipped with latest knowledge and skills to excel any difficult situation in the sphere of their life and career. The School of Science has brilliant laboratory facilities with top-rated scientific instruments, and sterling faculty members in each department. It consists of four departments: Physics, Chemistry, Mathematics, Biotechnology and Humanities offering UG, PG and PhD Courses. Instruments like Electrochemical Analyzer, High Sensitivity Fluorescence Spectrometer, Microtome, Micro-Centrifuge, Hot air oven, Autoclave, Digital Spectrophotometer, Muffle Furnace, Digital Conductivity Meter, Digital pH Meter, Digital Potentiometer, Fume Hood are available in the laboratories of various departments to facilitate the students to learn and acquire the core knowledge with proper experiments. Besides subjective knowledge, the faculty and staff members of the departments are very sincere and diligent to let the students armored with assorted skills like Soft Skills, Employability Skills, different Value-Added Courses on demand of the time to compete the students befitting the global professional scenario. I strongly believe that the seeds of quality education, skills and values implanted by the School of Science in the minds of the students will turn into big banian trees one day in the society through its superb and outstanding contributions. I extend my best wishes for its all the future endeavor!

”



**Dr. R. D. Patidar**  
Vice Chancellor

## From the Desk of the Associate Dean - School of Science

“

I take this opportunity to proudly mention in the First Volume of the Newsletter of the School of Science that the Alpha Publication (a registered publishing house under the Ministry of MSE, Govt. of India) ranked the School of Science as the Best Emerging School in Science Education (Central India). The mentioned laurel speaks about the school and its success which would not have been fruitful without the consistent endeavors of the faculty and staff members, students, parents and all the stake holders of the school and its departments. Well-structured curriculum, world-class laboratory facilities, outstanding faculty members, empathetic staff members, and amicable environment of OP Jindal University together working as a never-ending source of impetus to prepare its students a perfect and all-round future citizen and through their significant contributions in various platforms in future will definitely lead our country towards a Knowledge Super-Power. The teaching-learning, research and extra-curricular activities are incessantly updating with the emerging trends in technological development and innovations. I wish to express my best wishes and thanks to all the stakeholders of the School of Science for their constant support and contribution to make this a unique part of OPJU and this testimony will be a guiding document to the upcoming and existing family members of SoS. “Miles to go...”

”



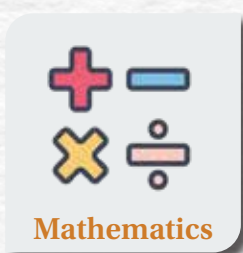
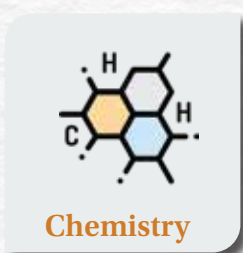
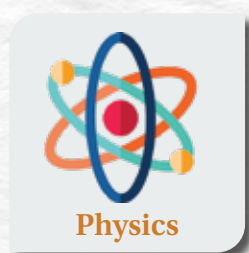
**Dr. Girish C Mishra**  
Associate Dean  
School of Science

## Unveiling the School of Science

The School of Sciences started functioning in 2018, with the challenge of imparting good quality theoretical and practical education in science disciplines; and plays a significant role in development of the University. The School of Science is comprised of the Departments of Physics, Chemistry, Mathematics, Biotechnology and Humanities. Each department is engaged in ground-breaking research and the education of students from Under Graduates to Postgraduates and Research Activities. The present curriculum of School of Science is structured to provide a common, broad-based foundation, imparting fundamental concepts and principles in Science to develop students' intellect, research aptitude and ability to work collaboratively. The School offers B.Sc. (Honours) Physics, Chemistry, Mathematics, Biotechnology, Data Science and Analytics and M.Sc. in Physics, Chemistry and Mathematics. The School also offers Doctoral programmes in Physics, Chemistry, Mathematics and Humanities. The School of Science promises to nurture young minds by developing intellectual and providing professional faculties with service to the cause of society & prides itself as one of the leaders in providing quality Science education in Central India. Education can excel only if it is carried on with research. As per the vision and mission of the University, it is focusing on research and development initiatives. The School of Science is committed to be one of the leading centre of Science education, facilitating its students to recognize their zeal and potential enabling them to achieve their academic and professional goals. The Mission of the School of Science is identifying and nurturing scientific talent amongst the young, upholding the principle of social responsibility for all and preparing students academically for success in university work and life. The Alpha Publication (a registered publishing house under the Ministry of MSE, Govt. of India) ranked the School of Science as the Best Emerging School in Science Education (Central India).



## Departments



## The School of Science @A Glance

### Programmes:

#### Bachelor of Science (B.Sc.) Hons

- B.Sc. (Hons.) Physics
- B.Sc. (Hons.) Chemistry
- B.Sc. (Hons.) Mathematics
- B.Sc. (Hons.) Biotechnology
- B.Sc. (Hons.) Data Science and Analytics

#### Master of Science (M.Sc.)

- M.Sc. in Physics
- M.Sc. in Chemistry
- M.Sc. in Mathematics & Computing

#### Doctor of Philosophy (Ph.D.)

- Physics
- Chemistry
- Mathematics
- English

## Spotlight: The School of Science



**Faculty with global experience**



**100 % faculties are Ph.D. from IITs & Institutes of National repute**



**Industry-oriented curriculum**



**Strong emphasis on Soft Skills Development**



**Project and Research based learning**



**Strong Career support and Guidelines for Competitive Examinations (JAM, NET-CSIR, UPSC, etc.)**

## Research and Publication Corner

### Research Paper (SCI/SCOPUS)

- **R.S. Singh**, A.K. Singh, A. Gautam, V. Rai, M.K. Jha, *Modeling and Simulation of Thin Film InP/GaAs Dual Junction Solar Cells, Iranian Journal of Chemistry and Chemical Engineering* (2023). DOI: 10.30492/IJCCE.2023.563052.5625
- **R.S. Singh, R.D. Patidar**, A.K. Singh, K. Deshmukh, K. Thakur, A. Gautam, *Simple Thermal Annealing Assisted Direct Synthesis and Optical Property Study of CuO Nanoparticles Incorporated PVA Films, physica status solidi (a)*, (2023). DOI: <https://doi.org/10.1002/pssa.202300328>
- B. Kumar, **S. Singh**, R. Grover, K.R. Isabels, A. Garg, B.C. Dattatraya, *Analysis of Mathematical Modelling Deterministic and Stochastic Problems in Federated Learning*, 2023 3rd International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE), IEEE, 2023, pp. 1700-1704. DOI: 10.1109/ICACITE57410.2023.10183114
- **G. C. Mishra**, Upendra K. Vermaa, S. J. Dhobleb, and A. Pandeyc, *Lyoluminescence study of  $\gamma$ -ray irradiated Cu doped YCa4O (BO3) 3 microcrystalline phosphors for Radiation Dosimetry applications*, Eur. Chem. Bull. 2023,12( Special Issue 6), 7623 – 7631
- Tatte, S.P., Parauha, Y.R., Dhoble, N.S., **Mishra, G.C.** and Dhoble, S.J., (2023). *Photoluminescence and thermoluminescence study of Ca1. 02Sr1. 98Al2O6: Dy phosphor synthesized by combustion method*. Materials Letters: X, 18, p.100203.
- P. Verma, **S. Verma**, G. Rao., *A New NTRU Cryptosystem with Block Matrix Formulation*, Eur. Chem. Bull. 2023, 12(Special Issue 5), 3471 – 3474
- **Singh, R. S.** (2023). *CO2 Capture by Metal-Decorated Silicon Carbide Nanotubes*. Silicon. DOI:<https://doi.org/10.1007/s12633-023-02368-9>
- **Singh, R. S.**, Gautam, A., & Rai, V. (2023). *Engineering the Electronic Structure in Titanium Dioxide via Scandium Doping Based on Density Functional Theory Approach for the Photocatalysis and Photovoltaic Applications*. Iran. J. Chem. Chem. Eng. Research Article Vol, 42(3).

- Bajpai, P. K., Mohan, C. R. K., **Singh, K. N.**, Dwivedi, A., Hait, M., & Guo, Z. (2023). *Effect of B-site Disorder on the Electrical Properties of Barium Zirconium Titanate Ceramics Composites*. ES Materials & Manufacturing.
- **Shukla, D.**, & Rani, S. (2023). *Effect of autoclave and non-autoclave hydrothermal synthesis methods on the structural properties and optical properties of LiBaF<sub>3</sub> phosphor: A comparative study*. Materials Today: Proceedings.
- **Singh, R. S.**, Jansen, M., Ganguly, D., Kulkarni, G. U., Ramaprabhu, S., Choudhary, S. K., & Pramanik, C. (2022). *Shellac derived graphene films on solid, flexible, and porous substrates for high performance bipolar plates and supercapacitor electrodes*. Renewable Energy, 181, 1008-1022.
- **Singh, R. S.** (2022). *Sulfur-doped silicon carbide nanotube as a sensor for detecting liquefied petroleum gas at room temperature*. Diamond and Related Materials, 124, 108932.
- Singh, A. K., **Singh, R. S.**, & Singh, A. K. (2022). *Recent developments in chemical doping of graphene using experimental approaches and its applications*. Advanced Engineering Materials, 24(11), 2200259.
- Gautam, A., Sharma, A., **Singh, R. S.**, & Gautam, P. (2022). *Impact of Post-Processing Technologies in Additive Manufacturing for Aerospace Applications-A review*. Iranian Journal of Chemistry and Chemical Engineering. DOI: 10.30492/IJCCE.2022.551274.5266
- **Mishra, G. C.**, Verma, U. K., **Singh, R. S.**, & Dhoble, S. J. (2022). *Enhanced luminescence in co-doped LaCa<sub>4</sub>O (BO<sub>3</sub>)<sub>3</sub> phosphor: Photoluminescence, mechanoluminescence and thermoluminescence study*. Optik, 261, 169112.
- Bargat, S. R., Parauha, Y. R., Shirbhate, N. S., **Mishra, G. C.**, & Dhoble, S. J. (2022). *Novel red color emitting Ca<sub>0.995</sub>Mg<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>: 0.5 Eu<sup>2+</sup> phosphor under UV, blue and green excitation for plant growth LEDs*. Luminescence, 37, 463-471.
- Mehare, C. M., **Mishra, G. C.**, Dhoble, N. S., & Dhoble, S. J. (2022). *Improvement of self-activated luminescence properties of Ca<sub>2</sub>KZn<sub>2</sub>(VO<sub>4</sub>)<sub>3</sub> down-conversion materials by SSR method based on co-doped Eu<sup>3+</sup>, Dy<sup>3+</sup> rare earth ions concentrations*. Journal of Molecular Structure, 1264, 133250.
- Das, G., Tripathi, B. P., **Verma, S.** and Sharma, B. K. (2022). *Management of the Oil and Gas Industry Using the Chameleon Hash Algorithm for Blockchain Technology*. Neuro Quantology, 20(6):01-06. DOI: 10.14704/nq.2022.20.7.NQ33397
- **Shukla, D.** March 2022, "To Study of the effect of reheating on structural characterization and Photoluminescence properties of nano-sized trivalent europium-doped alkaline earth silicate based M<sub>3</sub>SiO<sub>5</sub> (M= Sr, Ca, and Mg) phosphors" GIS Science Journal, Volume 9, Issue 6, Page No- 2325-2330.
- **Shukla, D.** Oct 2022, "To Study the Photo-Luminescence Properties and Comparative Study of PL of different Viscous Fluids Milk, Honey, and Oil for active food packaging", Journal of Basic science, Volume 22, Issue 10, Page No- 100-104.
- **Shukla, D.** (2022). *To Study the Photo-luminescence Properties and Comparative Study of PL of Different Viscous Fluids Milk, Honey, Oil for Active Food Packaging*. GIS SCIENCE JOURNAL, 22, 100-104.
- **Shukla, D.** (2022). *Evaluation of novel Blue Emitting Phosphor with High Thermal Stability and High Color Purity for Solid State Lighting Applications-Ca<sub>2</sub>MgSi<sub>2</sub>O<sub>7</sub>: Eu<sup>2+</sup>*. Res. J. Chem. Environ., 23-27.
- **Mishra, G. C.**, Verma, U. K., & Dhoble, S. J. (2022). *Investigation of good dopant (Sm, Cu, Tb, Mn, Sb) for radiation dosimetry in the γ-excited GdCa<sub>4</sub>O (BO<sub>3</sub>)<sub>3</sub> phosphor: mechanoluminescence study*. Radiation Effects and Defects in Solids, 177(9-10), 1135-1147.

- Tatte, S. P., Dhoble, N. S., **Mishra, G. C.**, & Dhoble, S. J. (2022, October). *Synthesis characterization and Luminescence Properties of B<sub>2</sub>BiMg<sub>2</sub>V<sub>3</sub>O<sub>12</sub> based phosphors with rare earth activated Dy<sup>3+</sup> phosphor for solid state lighting*. In IOP Conference Series: Materials Science and Engineering (Vol. 1258, No. 1, p. 012016). IOP Publishing.
- Tatte, S. P., Parauha, Y., Dhoble, N. S., **Mishra, G. C.**, & Dhoble, S. J. (2022). *Influence of rare earth ions on luminescent properties of self-emitting KCa<sub>2</sub>Mg<sub>2</sub> (VO<sub>4</sub>)<sub>3</sub> phosphors for lighting application*. Optik, 270, 169976.
- Dwivedi, A., Singh, K. N., Hait, M., & Bajpai, P. K. (2022). Ferroelectric relaxor behavior and dielectric relaxation in strontium barium niobate—a lead-free relaxor ceramic material. Engineered Science, 20, 117-124.
- **Samal, D., Mishra, M. R.**, & Kalam, A. (2022). *An EOQ model for Inventory System dependent upon on hand inventory without shortages*. Journal of Integrated Science and Technology, 10(3), 193-197.
- Tatte, S. P., Dhoble, N. S., **Mishra, G. C.**, & Dhoble, S. J. (2022, October). *Synthesis characterization and Luminescence Properties of B<sub>2</sub>BiMg<sub>2</sub>V<sub>3</sub>O<sub>12</sub> based phosphors with rare earth activated Dy<sup>3+</sup> phosphor for solid state lighting*. In IOP Conference Series: Materials Science and Engineering (Vol. 1258, No. 1, p. 012016). IOP Publishing.
- **Verma, S.**, Verma, P., & Rao, G. J. (2022). *A Variant Of Ntru With Split Conic Quaternion Algebra*. Journal of Pharmaceutical Negative Results, 7813-7823.

## Book Chapter

- **K N Singh** and **G C Mishra**, *Basics of Crystallography*, Evincepub Publishing, 2023. ISBN: 9356732515
- Singh, A. K., **Singh, R. S.**, & Singh, A. (2023). *Overview of 2D Materials*. In Emerging Two Dimensional Materials and Applications (pp. 1-6). CRC Press.
- Das, A., Rai, V., Behera, K., & **Singh, R. S.** (2022). *Nanomaterials-based biosensors*. In Advanced Nanomaterials for Point of Care Diagnosis and Therapy (pp. 1-14). Elsevier.
- Dhahiya, R., Saha, M., Kumar, A., Sharma, P., **Singh, R. S.**, Rai, V., & Behera, K. *Role of 2D Materials in Environmental Monitoring*. In Emerging Two Dimensional Materials and Applications (pp. 195-216). CRC Press.

## Book

- Singh, A. K., **Singh, R. S.**, Singh, A. (2022). *Emerging Two Dimensional Materials and Applications*. CRC Press-Taylor & Francis Group, ISBN: 9781032162874, DOI: <https://doi.org/10.1201/9781003247890>
- G. M. Madhavi, **Singh, S. K.**, Mishra, R. K., Rao, Y. V. *Business Communication*.
- Bajpai, P. K., **Singh, K. N.**, Dwivedi, A. (2022). *Applied Physics*. Evincepub Publishing, ISBN: 9789354466328

## Patent ( Granted/Published)

- **Singh, R. S.**, Singh, P. 2022. *Method of preparation of silver dendrites using graphene electrodes*. Indian patent, Application No.: 202221039611. (Published)
- Tiwari, R., Khan, S., Vyas, A. Ali, Z., **Shukla, D.**, Singh, V. K., Wangpo, T., Deshmukh, R. G., Kaikini, R. R., Marathe, A., Suchetha, C., Kaushik, E., Ashak, M., Sirisha, K., Panda, R. C. (2022). *A Novel Sustainable Cultivation Method for Ayurvedic Herb Lemongrass*. Republic of South Africa, Patent No. 2022/07836 (Granted)

- G Venkatasubbaiah, Dr Ratesh Kumar, Keshav Kumar K., **Manas Ranjan Mishra**, Chennupalle Venkata Sai Raghavendra Reddy, Dr R M Mastan Shareef, Dr A. K. Shrivastav, Hennupalle Divya, Dr M.A. Rifayathali Thulasimani T, Mohd Asif Shah, Dr Vijay Kumar Salvia, 2023, *Systematic Study to Analyze the Impact of Discrete Mathematics and Probability in the Theory of Machine Learning*, Application No. 202341003382. (Published)
- Anthati Sreenivasulu, Karuna Nidhan Singh, **Girish Chandra Mishra**, Dr T.Gowrani, Dr Nikale Vasant Muralidhar, Miss. Nikale Pooja Vasant, Dr Prashant Mundeja, Pravat Kumar Swain, Dr M Anusuya, Mohd Asif Shah, Dr P.Selvaraj, Mrs. D. Nagamalleswari, *Fabrication of Stable Lead Free Bismuth based Perovskite Solar Cells using a Non Toxic Solvent*, 2023, Application No. 202341003877. (Published)
- Dr Capt. K. Sujatha, S P Kishore, Devendra Kumar, Priyanka Babasaheb Shingade, **Manas Ranjan Mishra**, Priyanka Sharma, Dr Vinod Kumar, Dr V.P.Murugan, Dr R. M. Mastan Shareef, Dr A. Sasi Kumar, Dr Vijay Kumar Dwivedi, Dr Manikandan K, *Application of linear algebra and partial derivatives to machine learning and artificial intelligence*, 2023, Application No. 202341015521. (Published)
- Rohit Srivastava, Sachin Kumar, Sakshi Chaudhary, **Ankur Rastogi**, Tamilselvi D Pravat Kumar Swain, Nikale Vasant Muralidhar, Mr Sugeet Sethi, Miss Nikale Pooja Vasant, J Ramprabu, Ravi Mohan, Uday Nandlal Trivedi, 2023, Application No. 202311016895. (Published)
- Nasrin Khan, Aparna Ghosh, Ambarish Ghosh, Ritu Sanjeev Sood, Sanjeev Sood, Ravina Nikhar, Ruchir Joshi, **Sanjay Kumar Singh**, T.Rani, M.Deepa Harikumar Pallathadka, Application No. 202311016895. (Published)
- Dr Sanjeev Gautam, **Dr Anal Kant Jha**, Dr Shiv Kumar Giri, Dr Sunil Kumar Rai, Dr Abhijeet Mishra, Dr Vikash Kumar, *Trans-Differentiation of a Subpopulation Of Wharton Jelly Derived Mesenchymal Stem Cells (Wj-Mscs) In Human Astrocytes For Possible Treatment Of Neurodegenerative Disorders*, Application Number: 202311032938 A. (Published)

## Sponsored Project

Co-PI: **Dr. R. S. Singh**

Project Title: Tailoring the properties of 2D materials using WO<sub>3</sub> and MoO<sub>3</sub> nanostructures.

Budget: ~ INR 14 00000

Funding Agency: UGC-DAE Consortium for Scientific Research, Indore

## Glimpses of Top-Notch Laboratory and Research Facilities



Reflex Klystron & Gunn Diode



High Sensitivity Fluorescence Spectrometer



Semi Micro Balance



High Sensitivity Fluorescence Spectrometer



Digital Potentiometer



Mechanoluminescence Research Set-up



Laser Equipment & Optical Fibre Set-up



**Bomb Calorimeter**



**Colorimeter**



**Fume Hood**



**Vernier Lab Quest System,  
Stir Station & Drop Counter**



**Single Pan Electronic Balance**



**Microtome**



**Autoclave**



**Muffle Furnace**



**Digital Conductivity Meter**



**Micro-Centrifuge**



**Laser Equipment**

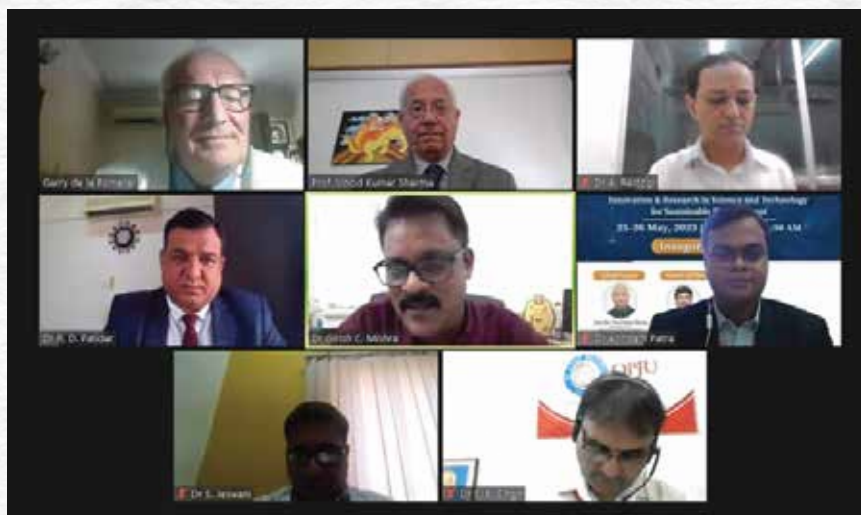


**Hot Air Oven**

## Gathering and Engagements: A Calender of Experience

### Conference/Seminar & Guest Lecture

- The School of Science organized the 2nd Virtual **International Conference on Innovation and Research in Science and Technology for Sustainable Development** from 25<sup>th</sup> to 26<sup>th</sup> May, 2023. The conference was successfully organized with a constellation of internationally renowned resource persons from the fields of science and technology. Prof. Vinod Kumar Sharma, Senior Professor, Disaster Management and Consultant at the Indian Institute of Public Administration graced the occasion as the Chief Guest. Dr Dharmendra Singh Sir, Senior Professor in Electronics and Communication Engineering Department, Indian Institute of Technology Roorkee and Mr. Garry de la Pomerai, Independent DRR consultant to UNISDR, UNESCO, UNCRD, EAC, Resilient Cities Initiative, GADRRRES graced the occasion as the Guests of Honour. Hon'ble Vice-Chancellor of OP Jindal University, Dr R D Patidar delivered the Welcome Address and the Vote of Thanks was extended by Dr Girish C Mishra, Associate Dean and Professor, School of Science, OPJU. A huge number of participants from academia and industry participated in the Inaugural Session with exceptional enthusiasm and fervor. There would be several keynote and technical sessions in the upcoming two days to synthesize and share knowledge on various themes and topics.



The School of Science in association with Academic Staff College, IQAC, and DRC organized a workshop on **Writing a Research Paper and Preparation of Research Project Proposal** on 15<sup>th</sup> May, 2023. The resource person was Dr. S J Dhoble, Professor, Dept. of Physics, R.T.M. Nagpur University, Nagpur.



The Department of Chemistry, School of Science organized a guest lecture entitled **How to select an Innovative Project** on 26<sup>th</sup> April, 2023. The Resource person was Dr. Dhanesh Singh, Professor, Department of Chemistry, Kirodimal Govt. Arts & Science College, Raigarh.

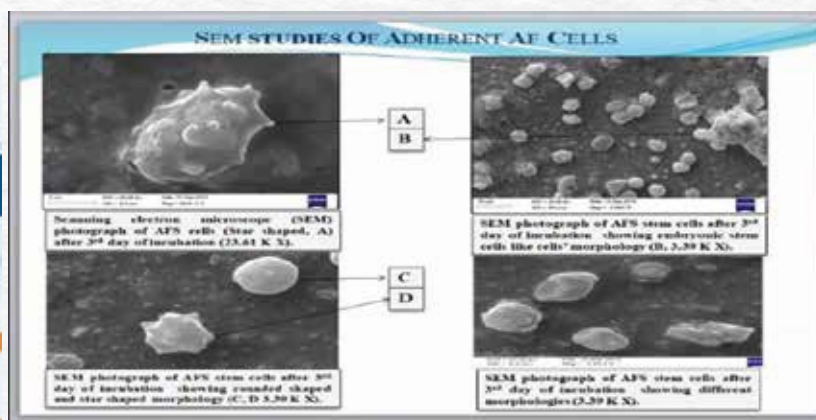
- Dr. Ankur Rastogi, Associate Professor, Dept. of Chemistry; Dr. Kavita Patel, Sr. Assistant Professor, and Dr. Deepak Patel, Assistant Professor, Dept. of Chemistry delivered sessions as resource persons in an FDP organized by Department of Chemistry, Govt. K. G. Arts and Science College Raigarh from 19th to 24th April, 2023.
- The School of Science organized a One Day Capacity Development Programme on **Soft Skills and Impression Management** on 21<sup>st</sup> April, 2023 for the purpose of building real capabilities rather than giving the students mere academic degrees and qualifications to improve productivity among the workforce in a workplace, and to offer opportunities for lifelong learning for developing various soft skills. The resource persons were Dr S.K. Singh and Dr Arindam Patra, and the session was coordinated by Prof. Suchismita Panda, from the Dept. of Humanities, SoS.
- Department of Biotechnology, School of Science organized a one day skill enhancement Workshop entitled **Awareness of Trends in Biotechnology** on 13th April, 2023.



- Dr. Taniya Sengupta Rathore, Associate Professor Dept. of Biotechnology received the Best Oral Presentation Award in an international conference **Innovation in Biotechnology Research for Sustainable Development: Challenges and Practices** on 28th and 29th March, 2023 organized by Sanjivani Arts, Commerce and Science College, Kopargaon, Shirdi in association with Microbiology Society, India.



- Department of Biotechnology, School of Science organized a guest lecture entitled **Future Prospects of Biotechnology** for B.Sc. (Hons) Biotechnology students on 13th January, 2023. Dr. Sushma Patel, Assistant Professor, Dept. of Botany, PG Govt. College Raigarh was the resource person. Dr. Analkant Jha and Dr. Taniya Sengupta Rathore coordinated the programme.
- Department of Biotechnology, SoS organized a lecture entitled **Promise and Peril of Stem Cell Technology for the students of B.Sc.(Hons) Biotechnology** on 16th December, 2022. The key speaker for the session was Dr. Sanjeev Gautam, Associate Professor, Kurukshetra (Haryana). He discussed about importance of Biotechnology and its application for mankind practice. It was an interactive session.

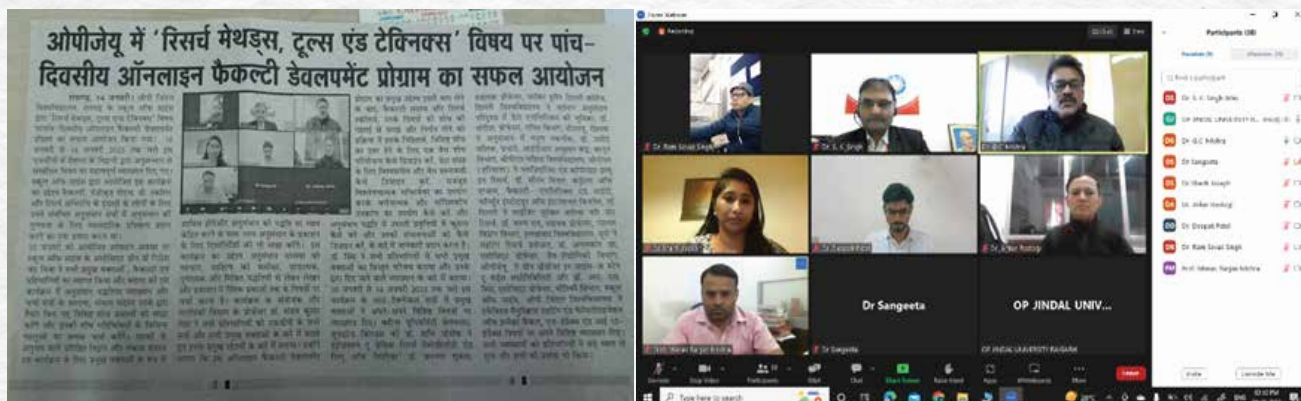


## Faculty Development Programme

- A Five-Day Online Faculty Development Programme on **Environment Management and Future Pathways** was organized by the School of Science, in association with the Academic Staff College (ASC) from March 27th to 31st 2023. The objective of the FDP is to equip faculty, young researchers and scholars with the right understanding of pro-environmental behaviour for Green Technology & Sustainability, environmental policies & regulations, Disaster & Waste management, resource conservation & Engineering, etc. Prof. Dr. Anil K. Gupta, National Institute of Disaster Management, New Delhi, Dr. S Vikash Ranjan, CEO, Pledge4Earth, Mr. Devendra Nahar, DGM, Gas Authority of India Ltd., Shri Naveen Agrawal, Registrar, Sindhu Mahavidyalaya, Nagpur, Dr. Amit Sinha, Head HR and Training, Swabhimaan Finance Pvt. Ltd. Lucknow, Dr. Ashish Kumar Panda, Environment Management and DM Expert, Dr. Rajlaxmi Srivastava, Professor, United University, Allahabad, Er. Awdhesh Kumar, Asstt. Professor (Civil Engg. Department), Invertis University, Bareilly, Dr. Girish Chandra Mishra, Associate Dean, School of Science, OPJU, and Dr. Anal Kant Jha, Associate Professor, Department of Biotechnology, School of Science were the eminent speakers of the FDP.



- The School of Science, organized a five-day online faculty development programme on **Research Methods, Tools and Techniques** for the post-graduate students aspiring to undertake research career, registered Ph.D. scholars, and faculty members from 10th to 14th January, 2023. The resource persons of the FDP were Dr. Shanthi Joseph, Queen's University Belfast, UK; Dr. Kalpana Shukla, Assistant Professor, Zakir Hussain Delhi College, University of Delhi; Dr. Sangeeta, Professor, Department of Mathematics, BMU, Rohtak; Dr. Pramod Malik, In-charge, Centre for IPRs Studies, Department of Laws, BPS Women University, Sonapat (Haryana); Dr. Saurabh Mittal, CoE, Faculty Analytics and IT, Fortune Institute of International Business, New Delhi; Dr Varun Rai, Assistant Professor, Department of Chemistry, University of Allahabad, UP; Dr Anal kant Jha, Associate Professor, Dept. of Bio-Technology, OPJU and Dr R. S. Singh, Associate Professor, Dept. of Physics, School of Science, OP Jindal University. A total of 150 participants registered themselves and got benefited.



## Community Engagement Initiatives: Extending Helping Hand

### Visit to Govt. Middle School, Chharratangar

- The students of B.Sc. (Hons) 4th Semester, School of Science visited Govt Middle School, Chharratangar (Adopted village) under the banner of NSS, OPJU and organized various activities like Quiz and Drawing Competition on **Save Water**. The faculty members and volunteers conducted a Workshop on Women's Health and Hygiene for the girls of Govt Middle School, Chharratangar (Adopted village) and distributed Sanitary napkins.



### Visit to Netraheen Bal Vidya Mandir, Amlidih

- The students of B.Sc. (Hons) 4th Semester, School of Science (under the banner of NSS, OPJU) visited Netraheen Bal Vidya Mandir, Amlidih and interacted with the students of the School.



### Students visit to Govt. Middle School, Chharratangar

- The students of B.Sc. (Hons) 6th Semester, School of Science in association with NSS, visited Govt. Middle School, Chharratangar and organised various activities like **Essay writing competition** on three topics. The prizes were given away to the winners of the competitions. The faculty members and volunteers conducted a Workshop on Women's Health and Hygiene for the girls of Govt. Middle School, Chharratangar (Adopted village) and distributed Sanitary napkins.



## Visit to Netraheen Bal Vidya Mandir, Amlidih

- The students of B.Sc. (Hons) 6th Semester, School of Science in association with NSS, OPJU visited Netraheen Bal Vidya Mandir, Amlidih (Adopted Village) on 11th April, 2023.



## Visit to Govt. Middle School, Chharratangar

- The students of B.Sc. (Hons) 1st Semester, School of Science in association with NSS, OPJU visited Govt. Middle School, Chharratangar on 17th April, 2023. The volunteers interacted with the students, told them about importance of cleanliness and organized various activities for the personality development of the students.



## Commemorative Occasions

### Parents Teachers Meeting - 2023



## Science Telent Hunt Quiz

- An Online Quiz contest was organized by Society for Science Studies on 5th February, 2023 for 12th standard students (Science Group). Total participants were 190.

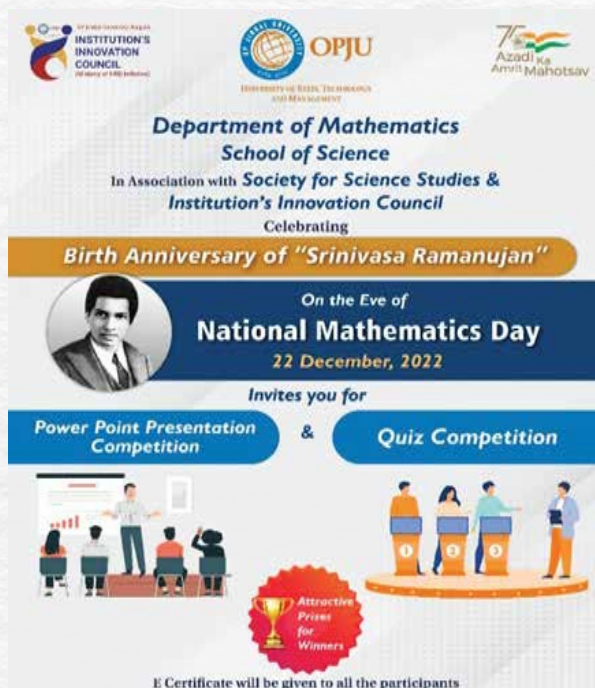
## National Science Day

- The Society for Science Studies, SoS organized a series of events on **National Science Day** which was held on 28th February, 2023. The events included a debate and a quiz competition, as well as an oath-taking ceremony, and aimed to promote scientific knowledge and encourage critical thinking among the participants. The debate competition began with the participants presenting their views on the topic "*Artificial intelligence is dangerous or not?*" and "*What do we favour Homeopathy or Allopathy?*".



## National Mathematics Day

- National Mathematics Day** ( 22<sup>nd</sup> December) was celebrated with much funfare by the School of Science on the occasion of the birth anniversary of Srinivasa Ramanujan with enthusiasm organizing various competitions like Power Point Presentation and Maths Quiz. The students of the school participated actively.



## One-Day Workshop on 'Gender Sensitization and Women Empowerment'

- A one-day workshop on **Gender Sensitization and Women Empowerment** was organized at OP Jindal University under the joint aegis of Internal Complaints Committee (ICC) and Red Ribbon Club, OPJU. This workshop was organized for the girl students, women faculty and staff of the university on *World AIDS Day*. The purpose of organizing this workshop was to try to remove gender bias and bring awareness to the empowerment of women by keeping gender equality in mind under the Sustainable Development Goal. Dr. Preeti Shadangi (Assistant Professor - English) of Kirodi Mal Government Arts and Science College, Raigarh, Dr. Anupama Patel (Assistant Professor - Law Department) and Prof. Hemkumari Patel (Assistant Professor-English) of Government P.D. College, attended and delivered the lectures.



## Internships and Placements

S.No.	Name of the students placed	Organization	Package per annum in INR
01	Diksha Apat (B.Sc)	JSW Coated	2.4 LPA
02	Mansi Mishra (B.Sc)	JSW Coated/ Agumentik	2.4/ 6 LPA
03	Bharti Rathore (B.Sc)	Elxer Communications	2.4 LPA
04	Abhipsa Behra (M.Sc-Physics)	JSW Coated	2.4 LPA
05	Debarchan Kar (M.Sc-Physics)	JSW Coated	2.4 LPA
06	Dipali Pradhan (M.Sc-Physics)	JSW Coated	2.4 LPA
07	Sumitra Das (M.Sc-Chemistrys)	JSW Coated	2.4 LPA
08	Debashree Mishra (M.Sc-Chemistry)	Just Dial Ltd.	2 LPA
09	Aditya Narayan Mohanty (M.Sc-Chemistry)	Jindal Power Ltd.	2.6 LPA
10	Shobha Yadav (B.Sc)	eReleGo Technologies Pvt Ltd.	2.4 LPA
11	Vishakha Singh (B.Sc)	Jindal Power Ltd.	2 LPA
12	Bhawna Soni (M.Sc-Chemistry)	Jindal Power Ltd.	2 LPA
13	Kalyani Singh (B.Sc)	Vedanta Aluminium	4 LPA
14	Pooja Yadav (B.Sc)	Vedanta Aluminium	4 LPA
15	Siddhi Rawal (B.Sc)	JSW Coated	2.4 LPA
16	Shiv Shankar (B.Sc)	D&H Scheron	3 LPA
17	Rishab Kumar (B.Sc)	BYJU's	6 LPA

## Glorious Moments

- Mrs. Chaitali M. Mehare, research scholar of the School of Science, Department of Chemistry has been awarded Ph.D. in Chemistry. The title of her research was **Chemical route synthesis and luminescence characterization of rare-earth activated LED and TLD phosphors**. She did her research work under the guidance of Dr Girish C Mishra, Associate Dean and Professor of Physics, School of Science, OPJU and Dr S J Dhoble, Professor, Dept. of Physics, R.T.M. Nagpur University, Nagpur and Dr N.S. Dhoble, Professor, Dept. of Chemistry, Sevadal Mahila Mahavidyalaya, Nagpur. The Open Defence Viva-Voce was held on 7th June, 2023.



- Ph.D. Defence Viva-Voce of Mr. Abhijeet Ramesh Rao Kadam, Dept. of Physics, School of Science was held on 15th May, 2023. The candidate carried out his research under the supervision of Dr. Girish C Mishra, Professor and Associate Dean, SoS, OPJU, and Dr. S J Dhoble, Professor, Dept. of Physics, R.T.M. Nagpur University, Nagpur.



## Celebrating Faculty Milestones

- Dr. Sanjay Kumar Singh, Professor, Department of Humanities, School of Science received certificate of achievement for the Best NSS Programme Officer for Social Services in Rural Area by Scientific International Publishing House, registered under the Ministry of SME, Govt. of India.



- Dr. R. S. Singh, Associate Professor, Dept. of Physics published a book entitled **Emerging Two Dimensional Materials and Applications** with referred publisher CRC Press, Taylor & Francis Group. (ISBN: 9781003247890, <https://doi.org/10.1201/9781003247890>)

- Dr Girish C. Mishra, Associate Dean, School of Science delivered an Invited Talk on **Mission Life- Life Style for Environment** on virtual mode organised by DMCC National Webinar Series on 19th December, 2022.



- Dr. R. S. Singh, Associate Professor, Dept. of Physics delivered an invited talk on **Graphene Preparation Using Shellac for High Performance Supercapacitors and Fuel Cells** on 4th December, 2022 through virtual mode in the 4th Sino-Singapore Surface Science Annual Conference organized by National University of Singapore.

- Dr Girish C. Mishra, Associate Dean, School of Science delivered an Invited Talk on **New Dimensions of Research** at Govt. Naveen College, Hasaud (Sakti) on 3rd December, 2022. The lecture was appreciated by all the participants.



## Students Bring Laurels: Quality Speaks

- Three students of B.Sc.(Hons) Mathematics, **Dipti Chnadra, Ishan Hargunani, Anjali Patel** were selected for the Summer Outreach Program in Mathematics (SOPM 2023) organized by NISER, Bhubaneswar held from 22nd May to 10th June, 2023.
- Mr. Vivek Gupta** and **Mr. Ayush Sahu** of B.Sc. (Hons) Chemistry qualified IIT-JAM Chemistry 2023 with AIR 621 & 1779, respectively.
- Miss Vishakha Singh** received **Medhavi Chhatra Award** during Women's Day Celebrations on 16th March, 2023.



S.No.	Name of the Students	Events	Organized by	Achievements
1.	Shruti Kumari Mahak Acharya Prachi Tripathi Ishrafil Ali	National Innovation Fest	OP Jindal University Raigarh	Selected for Incubation
2.	Mahak Acharya Tanisha Singh	Student Symosium on National Conservation Day	Dept. of EE. OPJU, Raigarh	Third Prize in Poster Presentation
3.	Mahak Acharya	Youth Summit	OP Jindal University Raigarh	Second Prize
4.	Shruti Kumari	Youth Summit	OP Jindal University Raigarh	Third Prize
5.	Shruti Kumari Mahak Acharya Tanisha Singh Prachi Tripathi	Technorollix	OP Jindal University Raigarh	Second Prize in Model Presentation
6.	Nafisha Khman Arti Yadav Mushkan Singh Sheenat Chawla	Technorollix	OP Jindal University Raigarh	Third Prize in Poster Presentation
7.	Shruti Kumari Mahak Acharya Prachi Tripathi Ishrafil Ali	Technorollix	OP Jindal University Raigarh	SoS Best Innovator Award

## Students Participation in NIF 2.0

- The students of School of Science participated in the National Innovation Fest 2.0 organized by OPJU Innovation Centre. The students, Ms Shruti Kumari, Ms Prachi Tripathi, Mr. Israfil Ali, Ms. Mahak Acharya, Ms. Shomya Sinha, Ms. Arti Yadav and Ms. Sheenat Chawala of B.Sc. (Hons) Biotechnology participated in the event and brought the laurels for the University. They all received the Certificate of Appreciation (Prototype).
- **Mahak Acharya** and **Tanisha Singh** B.Sc. (Hons) Biotechnology 1st semester ranked third in National Level Poster Presentation Competition for Student Symposium on the National Conservation Day.



- **Shruti Kumari, Mahak Acharya, Prachi Tripathi** and **Tanisha Singh** secured 2nd Position in Model Presentation in Techlab Technorollix-2023.

- **Mushkan Singh, Nafisha Khama, Sheenat Chawla** and **Arti Yadav** secured third Rank in Poster presentation in Tech lab Technorolix-2023.



- **Shruti Kumari, Sahana Singh** and **Sheenat Chawla** Presented Poster in the International Conference **Innovation in Biotechnology Research for Sustainable Development: Challenges and Practices** from 28th to 29th March, 2023. organized by Sanjivani Arts, Commerce and Science College, Kopargaon Shirdi in association with Microbiology Society, India.
- **Shruti Kumari, Mahak Acharya, Ishrafil Ali** and **Prachi Tripathi** presented a prototype on Biopolymer synthesis from Rice Agriculture waste and selected in National Innovation Fest 2.0 on November, 2022.



- **Shruti Kumari** received **Student Achiever Award** in OPJU Parents Summit 2023.
- **Mahak Acharya** and **Shruti Kumari** secured 2nd and 3rd Rank in Poster Presentation in Y20 Summit India organized on 23rd February, 2023.



- Dept. Of Biotechnology Organized Workshop on **Awareness of Trends in Biotechnology** on 13th April, 2023.
- **Prachi Tripathi** secured 1st rank in Essay Writing Competition **Green Technology for Sustainable Development** organized by OPJU Eco Club on 24th April, 2023 in the occasion of **International Earth Day**.
- **Shruti Kumari** and **Mahak Acharya** Selected for Innovation, Design and Entrepreneurship Bootcamp in IISER Bhopal organized by Ministry of Education Innovation Cell from 22nd to 26th June, 2023.



- **Shruti Kumari, Sahana Singh, M Akansha** and **Kasish Naz** selected by OPJU Innovation Cell Incubation Startup for 6 month.

## Faculty Members



**Dr Girish Chandra Mishra**

*Ph.D. (GGU, Bilaspur)  
Professor-Physics and  
Associate Dean & Head-SoS*



**Dr Ram Sevak Singh**

*Ph.D. (National University of Singapore),  
Associate Professor (Sr. Grade)- Physics*



**Dr Karuna Nidhan Singh**

*Ph.D. (GGU, Bilaspur)  
Associate Professor -Physics*



**Dr Dipti Shukla**

*Ph.D. (PRSSU, Raipur)  
Associate Professor-Physics*



**Dr Shubhashri Kumari**

*Ph.D. (IIT ISM, Dhanbad)  
Assistant Professor-Physics*



**Dr Ankur Rastogi**

*Ph.D. (MJPRU, Bareilly)  
Associate Professor (Sr. Grade)- Chemistry*



**Dr Deepak Patel**

*Ph.D. (GGU, Bilaspur)  
Assistant Professor-Chemistry*



**Dr Kavita Patel**

*Ph.D. (DCVRU Bilaspur)  
Assistant Professor (Sr. Grade)-Chemistry*



**Prof. Sanjana Dewangan**

*Ph.D. (Pursuing)  
Assistant Professor-Chemistry*



**Dr Saumya Singh**

*Ph.D. (IIT BHU, Varanasi)  
Associate Professor (Sr. Grade)- Mathematics*



**Prof. Manas Ranjan Mishra**

*Ph.D. (Pursuing)  
Assistant Professor (Sr. Grade)- Mathematics*



**Dr Swati Verma**

*Ph.D. (PRSSU, Raipur)  
Associate Professor-Mathematics*



**Dr Syed Modassir Hussain**

*Ph.D. (IIT ISM, Dhanbad)  
Associate Professor-Mathematics*



**Dr Debasmita Samal**

*Ph.D. (Berhampur University)  
Assistant Professor (Sr. Grade)- Mathematics*



**Mr Shrikant Chaini**

*M.Sc. in Mathematics  
Govt. K.G. Arts and Science college  
Raigarh(C.G.).  
Lecturer- Mathematics*



**Dr Taniya Sengupta Rathore**

*Ph.D. (Devi Ahilya University, Indore)  
Associate Professor- Biotechnology*



**Dr. Pranjal Kumar**  
*Ph.D. (IIT-Dharwad)*  
*Assistant Professor- Biotechnology*



**Dr. Sanjay Kumar Singh**  
*Ph.D. (APSU, Rewa)*  
*Professor- Humanities*



**Ms. Suchismita Panda**  
*Ph.D. (Pursuing),*  
*Assistant Professor- English*



**Dr. Arindam Patra**  
*Ph.D. (PTRSU, Raipur)*  
*Assistant Professor- English*

## Staff Members



**Mr. Anil Shukla**  
*Lab Assistant*  
*Department of Chemistry*



**Mr. Sharvan Kumar**  
*Lab Assistant*  
*Department of Physics*



**Ms. Sumitra**  
*Lab Instructor*  
*Department of Chemistry*



**Ms. Monadeepa Sengupta**  
*Lab Instructor*  
*Department of Physics*



**Mr. Hemant Kumar**  
*Lab Instructor*  
*Department of Biotechnology*





“The School of Science, OP Jindal University (OPJU) provides excellent academic ambience and career opportunities. I take pride being a student of the School of Science, OPJU. Under the mentorship of highly qualified and experienced faculty members with international exposure, I have acquired not only knowledge in my field of interest but also developed my professional skills and personality. The school facilitates students to qualify for various competitive exams such as NEET, GATE, IAS, CDS, and Civil Services Exams and to visit various industries nearby the university. I have qualified CIB Examination, and I would like to thank all the faculty members of the Department of Physics for their proper guidance and support to achieve this goal. The Career Development Centre at OPJU brings various on-campus job and internship opportunities as well for students.”



**SIDDHANT TIWARI**  
M.Sc. (Physics)





“The School of Science, OPJU is gradually emerging as an excellent Centre for Research and Teaching in the areas of science with the cutting-edge challenge of imparting good quality education under the active guidance of dedicated and experienced faculty members. The curriculum has a significant practical component that has prepared me in experimental skills essential to science. Seminars, presentations and assignments for us are designed to be highly effective fulfilling recent needs of the industry, which cover the ways for the students to bring out their intellectual and interactive skills in analyzing scientific problems. I have been a part of a few national and international seminars and conferences which helped me a lot in understanding different fields of science and their scopes. Along with the UG and PG courses School of Science also provides special classes for the different competitive examinations, which helps the students to pursue their careers in different fields.”

**Shubhangi Bohidar**  
B.Sc. (Hons) Mathematics





**SHRUTI KUMARI**  
B.Sc. (Hons) Biotechnology

“The School of Science, OPJU offers diverse range of academic opportunities according to one's interest and career aspirations with world class infrastructure, laboratory facilities. The dedicated faculty members who are experts in their fields, foster a stimulating learning environment, encourage critical thinking, innovation and provide platforms to enhance one's skills. I achieved incubation from GIC, presented poster in International Conference on "Innovation in Biotechnology Research for Sustainable Development: Challenges and Practices" and got selected in innovation bootcamp by Ministry of Innovation India in ISSER Bhopal under the guidance of Dr. Taniya Sengupta Rathore. All the faculty members are very much supportive and responsive here. Beyond academics, university offers a vibrant student life that enriches the overall experience in higher education.”





“The School of Science, OPJU offers a wide range of well-structured and comprehensive academic programs, ensuring a strong foundation in various fields of study with highly qualified and experienced faculty members who are passionate about teaching and supporting their students. They possess deep knowledge in their respective fields and are always willing to assist students inside and outside the classroom. The university provides excellent laboratory facilities equipped with modern equipment and technologies. These well-maintained labs offer hands-on experience and practical learning opportunities, enhancing our understanding of theoretical concepts and helping us to develop essential skills. With the support and guidance of the faculty members of the School of Science, I attended twenty days Summer Outreach Program in Mathematics organized by the National Institute of Science and Research, Bhubaneswar and I got selected for Mathematics Training and Talent Search Program 2023 organized by IIT Madras. The School of Science, OPJU is the best place to build a bright future.”

**Dipti Chandra**  
B.Sc. (Hons.) Mathematics





“OP Jindal University is a milestone in the field of higher education. It is one of the best universities in central India catering holistic education and knowledge. It is well established with excellent infrastructure (classrooms, laboratories, library, gymnasium), security, and recreational facilities. We have opportunities to learn from experienced faculty members, engage in intellectual discussions with peers, and gain insights from outside experts in various fields. I achieved incubation from GIC, secured third rank in a poster presentation competition on the occasion of National Conservation Day, and got selected in an innovation boot camp by the Ministry of India in ISSER Bhopal under the guidance of Dr. Taniya Sengupta Rathore, Associate Professor, School of Science. As university life is a transformative period for all of us, accordingly OPJU shapes our intellect, broadens our perspective, and equips us with the necessary skills to navigate the complexities of the world.”

**Mahak Acharya**  
B.Sc. (Hons.) Biotechnology

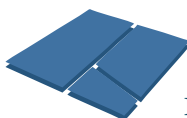














































“Reflecting upon my academic journey at OP Jindal University, Dept. of Chemistry (B.Sc. (Hons) Chemistry), I am filled with gratitude for the transformative experiences and knowledge that I have gained here. The department's commitment to fostering scientific excellence and curiosity has provided me with a remarkable academic experience. From the engaging coursework to the numerous opportunities for research and collaboration, my time in the department has been very fantastic period. I am immensely delighted to be placed in YEDANTA which was my dream since the beginning of the journey of my higher education, it would not have been possible without the tireless and constant support and cooperation of each faculty and staff member of SoS and the entire OPJU family. The personalized mentorship which I received from my Professors is the best that provided me with a solid foundation for pursuing my dreams in scientific research. According to my own personal experiences and the specific offerings, I believe that the School of Science is one of the best science departments and OPJU is one of the best universities in central India.”

**Kalyani Singh**  
B.Sc. (Hons) Chemistry



Infrastructure			Students		
 <b>50</b> Acres Land area	 <b>5,00,000</b> Sqft. Built up area	<b>2000+</b> 	 <b>40%</b>  <b>60%</b>		
 <b>1000+</b> Capacity	 <b>350+</b> Capacity	 <b>80%</b> UNDERGRADUATE	 <b>20%</b> POSTGRADUATE		
 <b>500 Mbps (1:1)</b> Connectivity Fully Wi-Fi Campus	 <b>500+</b> Networked Computer Systems	 <b>35%</b> Students from other state	 <b>20</b> Other state representation of students		
 <b>50+</b> Well equipped laboratories					
Research Publications					
 <b>1000+</b> Referred International Journals	 <b>100+</b> Referred National Journals				
Centres for Excellence					
 <b>Innovation &amp; Entrepreneurship</b>	 <b>Research</b>	 <b>Corporate Education &amp; Training</b>			
 <b>Industry - Academia Collaboration</b>	 <b>Social Empowerment</b>	 <b>CSTPD</b>	 <b>1:16</b> Faculty-Student ratio	 <b>35</b> Average age of faculty members	 <b>3000+</b> Alumni
Library			Placements Statistics		
 <b>42000 +</b> Books			<b>Year 2020-21</b>		
 <b>5000 +</b> Titles			 <b>46</b> Campus Drives	 <b>71.8%</b> Students Placed	 <b>5.50</b> Lakh Average Package
 <b>10000 +</b> E-journals			<b>Year 2021-22</b>		
Faculty and Staff			<b>Year 2022-23</b>		
 <b>110+</b> Faculty	 <b>PhD 80%, 20% PG</b>	 <b>70%</b> Faculty qualification from IIT, IIIT, NIT & IIM	 <b>70+</b> Campus Drives	 <b>88%</b> Students Placed	 <b>6.50</b> Lakh Average Package
 <b>20%</b> Faculty with global experience	 <b>100+</b> Non-teaching staff	 <b>28%, 72%</b>	 <b>90+</b> Campus Drives	 <b>93%</b> Students Placed	 <b>6.70</b> Lakh Average Package

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