

Departmental report
Department of Chemistry

Introduction

The department of Chemistry was established in 1959 and since then it has flourished continuously. The department comprises of eight regular faculties headed by Prof. Younus Raza Beg. Three of the faculties namely Dr. D.K. Verma, Dr. Priyanka Singh and Dr. Ashwani Sharma have been registered as Phd guides thriving in their respective areas of research. The department offers various programs at graduate and postgraduate levels under which.....students have been enrolled in first year of graduation program in which CBCS has been implemented under the NEP-2020,.....students have been enrolled in B.Sc-II and.....students in the final year of graduation. A batch of 27 students are enrolled for the first year of postgraduate program. Similarly 25 students are currently pursuing their masters. The department also fees certificate courses in water and soil analysis and food science.

Departmental achievements

A one week online faculty development program was organised by the department from 8th to 15th June 2022 entitled, "One week online FDP on Chemical Sciences" in collaboration with the New Arts, Commerce and Science college, Parner, Maharashtra in which participants from different parts of the country actively participated. Eminent speakers delivered their lectures on various topics among which the highlights were Dr. Kallol K. Ghosh and Dr. Manmohan L. Satnami from Pt. Ravishankar Shukla University Raipur, Dr. Rahul Diggikar and Dr. Dileep R. Thube from Parner, Maharashtra, Dr. Chittaranjan Das, CTO, persosol startup, Germany, Dr. Mayur Mausoom Phukan and others.

A career guidance session was organised for the students of postgraduate in which the keynote speakers were Mr. Sandeep Chandraker, Director, Engineers Circle, Bhilai and Mr. Paritosh Baghel, Manager, Jaiswal NICCO plants, Raipur.

Another career guidance lecture was organised by the department for graduate and postgraduate students in which the invited speaker was Mr. Homi Mahikwar, HRD head, Jetking, Raipur.

A three days international conference (IC-RASSI 2023) was also organised by the department in collaboration with the department of Physics, Maths and Computer Science in which eminent scientists from all over the world took part, the highlight being Dr. Abraham Varghese from Muscat, Oman, Prof. Elyor Berdimurodov Tukhliyovich from Uzbekistan, Prof. Rajiv Prakash, Director, IIT Bhilai, Dr. Paz Otero Fuertes from Spain and Dr. Chandrabhan Verma from Saudi Arabia including others. The conference provided a wonderful platform for exchange of ideas and innovation.

Departmental activities

From time to time various activities are being organised by the department for the holistic development of the students focusing on their academic, personality and career's growth.

Extension activity

In order to make the students understand how a factory actually works, we visited the Boramdeo Sugar factory, Kabirdham as a part of the extension activities offered by the department. The students observed the whole process of manufacturing of sugar from sugarcane ams also the processing of sugar. They also visited the famous and ancient Boramdeo temple. In addition to being a knowledgeable trip it also served as a chance to strengthen the student-teacher bond.

Special lecturers

A guest lecture was delivered by Mrs. Renuka Sinha, Asst. Prof. Physics, Govt. College, Thelkadih on 18th October 2022 in which she discussed the fundamental mathematics for chemists. She briefly talked about Basics of differentiation, integration and other mathematical functions required to solve problems in chemistry.

Interdepartmental guest lecture

From time to time various inter departmental guest lectures are also being organised to aid the students in understanding various topics. In this series, a lecture by Dr. Pramod Manish, HOD, department of biotechnology was delivered on 14th

November 2022 on Intellectual Property Rights. Another lecture by Mrs. Kavita Sakura, assistant professor, department of mathematics was delivered on 6th December 2022 on Mathematics for Chemists. In the series another lecture on Computer language and programming was delivered by Mr. Ramavatar Sahu, department of computer sciences. Miss Priyanka Das, department of computer science delivered a wonderful lecture on Operating systems on 7th December 2022. Another lecture session was conducted on Programming language in which Mrs. Rohini from the computer science department explained the different computer languages beautifully.

Departmental student's achievements

Since we work on the overall development of the students including their academics, fruitful results are always borne. Three of our students got placed in Vedanta group of industries through the campus interviews namely Bhavna Sahu, Nemchand and Krishti Tondon. One of our students Durgesh Sahu qualified CSIR-NET JRF examination.

In the international conference(ICRASSI-2023) organised from 6th to 8th February 2023 Gagan Nath Yogi of M.Sc. first semester secured a first rank in the poster competition held. Miss Reema Dewangan secured a second rank and Miss Pushplata secured a third rank in the Chemical sciences category. In the environment science category Miss Vineeta Sen secured a third rank in the poster making competition.

Research work and publications

The faculties apart from indulging in academics also are involved in research works. Various research papers, review articles, books and book chapters are being published in journals of repute and renowned publications respectively. A total of seven books have been co-authored by Dr. Dakeshwar Kumar Verma, the titles and publications of which are as follows:-

S.No.	Title of the book	Publication
1.	Essential oils Sources, production and applications.	De Gruyter
2.	Organometallic compounds: synthesis, reactions and applications	Wiley
3.	Corrosion prevention nano science	De Gruyter
4.	Carbon allotropes nano structured anti corrosive materials	De Gruyter
5.	Computational modelling and simulations for designing of corrosion inhibitors	Elsevier
6.	Handbook of biomolecules	Elsevier
7.	Carbon dots in biology	De Gruyter
8.	Phytochemicals in medicinal plants	De Gruyter
9.	Handbook of organic name reactions	

Apart from the book's publication various book chapters also have been written. A total of 25 book chapters have been authored by the faculties in books of celebrated publications. In this session, five research papers have been published in journals of high impact factor which are as follows

Name of the faculty	Title of the paper	Publication journal
Dr. Ashwani Kumar Sharma	Isolation and chemical structural elucidation of antibacterial bio active compounds from endophytic fungal strain <i>Phoma</i> sp. D1	Springer
Dr. Dakeshwar Kumar Verma	Anticorrosive properties of the epoxy polymer TGETBAU for mild steel in a solution of HCl(1.0M): experimental and computational approaches	Journal of Molecular Science

Dr. Ashwani Kumar Sharma	The SARS-CoV-2 omicron variant and its multiple sub-lineages: Transmissibility, vaccine development, antiviral drugs, monoclonal antibodies and strategies for infection control – a review	ChemistrySelect
Dr. Dakeshwar Kumar Verma and Dr. Priyanka Singh	Nano materials: A comprehensive review of applications, toxicity, impact and fate to environment	Journal of Molecular Liquids
Dr. Dakeshwar Kumar Verma	Electrochemical impedance(EIS) and noise analyses for corrosion measurements	ScienceDirect

Apart from these, papers have been published in the International conference, IC-RAASI 2023.





