

SHRI SHIVAJI SCIENCE COLLEGE AMRAVATI

DEPARTMENT OF CHEMISTRY

ANNUAL REPORT 2020-21

Achievements-

Student's Achievement:

Ms. Shivani Pande of M.Sc. II bagged Second prize in Intercollegiate Seminar Competition organized by Shri RLT College of Science Akola in association with Amravati University Chemistry Teachers Association.

Ms. Nikita Rewlani of M.Sc. I bagged Third prize in Intercollegiate Seminar Competition organized by G.S. Science, Arts and Commerce College, Khamgaon in association with Amravati University Chemistry Teachers Association.

Ms. Amisha Dahake of B.Sc. II bagged First prize in Intercollegiate Seminar Competition organized by Shri Shivaji Science College, Amravati.

Research Publications :

Faculty members of the department has published 60 research papers in esteemed national and international journals.

Research Presented :

Faculty members presented 35 research paper in different national conferences, national seminars and also attended near about National conferences/seminars/workshops.

Departmental Activities

Online Value Based Course On “Chemical Handling and Laboratory Safety for UG and PG Students

The Department of Chemistry, Shri Shivaji Science College Amravati, has organized online Course on “Chemical Handling & Laboratory Safety (CHLS-2021)” from 20/08/2021 to 06/09/2021. Dr Harshali G. Wankhade, Asst. Professor, Department of Chemistry took initiative as a course co-ordinator to effectively carry out the sessions of this course. In this course total 170 students of UG & PG offering Chemistry from Shri Shivaji Science College Amravati were participated.

All the faculty members of Department of Chemistry, Shri Shivaji Science College, Amravati, has delivered the talk on handling various chemicals and instruments while performing practicals in laboratory. This course proved to be very useful for students to get theoretical and practical knowledge of various chemicals, glasswares and instruments used in laboratory. This value based course definitely enhanced the student's skill of performing chemistry practicals safely and with accuracy. This course was successfully organized by the Department of Chemistry.

The course was inaugurated by Prof. G. N. Chaudhari, Principal & Head, Department of Chemistry the Chief Guest of the function. All faculty members and participants were present in the inaugural function. Prof. G. N. Chaudhari motivated the participants.

“ONLINE TWO-DAY WORKSHOP ON CSIR-NET/SET EXAMINATION”

ONLINE TWO-DAY WORKSHOP ON CSIR-NET/SET EXAMINATION was successfully organized by P.G. Department of Chemistry, Shri Shivaji Science College, Amravati on 25th & 26th August 2021.

The spectrum of delegates cover the different Universities of Maharashtra including Dr. Babasaheb Ambedkar Marathwada University, Solapur University.

Mumbai University, Savitribai Phule Pune University and Sant Gadge Baba Amravati University, Amravati.

Total four eminent speakers & 500 participants including research scholars, postgraduate students and faculties from different Universities were registered for this Online web-based workshop.

Workshop covered inaugural function and four invited talks of eminent resource persons & experts in their fields, were introduced with their effective presentations. The workshop was conducted on online platform mode like Zoom, YouTube & official website of Shri Shivaji Science College, Amravati.

There was an overwhelming response for this Online Web-based workshop. Near about 200 participants were actively participated on this online web-based workshop. The students have benefited in many ways from this workshop.

The invited talks and Keynote Speakers from different Universities of state Maharashtra addressed to participants and shared knowledge and rich experience in the subject chemical science.

RESEARCH METHODOLOGY COURSE (RMC-21) FOR Ph.D. RESEARCH SCHOLARS IN FACULTY OF SCIENCE.

The aim and objectives: The aim of RMC-21 is a way to systematically solve a research problem. It is a science of studying how research is done specifically. The workshop is mainly for PhD scholar in order to enhance the knowledge while pursuing PhD and achieve their goal. It was a mixed reaction to organize such workshop in the COVID pandemic because of time constraint and to conduct it online mode but anyway it was a good response from participant's sides.

Day 1: on day 1 the inaugural function for the inaugural, respected Principal Dr. V.G. Thakare, Chair the session, Dr. G.N. Chaudhari, Prof and Head Department of Chemistry, Convener of the workshop and vote of thanks was given by Dr. N.R. Thakare.

In the workshop Day one has two lectures for the first session, the speaker Dr. Ranjit Thomas delivers his talk on "Academic writing in Sciences plagiarism citation and ethics" and second speaker was Dr. N.S. Chandan delivered his talk on "Research Opportunities in India and abroad" the session was chaired by Dr. A. S. Burghate, Professor in Chemistry.

For the second session Dr. Payal Joshi, delivered her talk on "preparing a robust supplementary information research data" The session was chaired by Dr. P.R. Padole, Professor in Chemistry.

Day 2:

For the first session, the speaker were Dr. Pravin Ingole – IIT Delhi delivered his talk on "writing your research proposal? Mind some key aspect" and second speaker was Prof. Vivek Poleshettiwar, TIFR Mumbai delivered his talk on "how to conduct novel and quality research" the session was chaired by Dr. Yogita Thakare

For the second session, the speaker were Dr. H.S. Lunge Professor in Statistics delivered his talk on "Data analytics and its interpretation" and second speaker was Dr. P.R. Bhagat Professor in Chemistry, VIT Vellore delivered his talk on "Importance of research area in Basic sciences and ethics" and the session was chaired by Dr. P. R. Mandlik, Professor in Chemistry.

Online Three Week National Training Course on "Advanced Instrumentation Techniques and Their Practical Applications for PG and Research Students"

The market has many high paying jobs and candidates need the skill to get them. Every company, Government and public testing labs is looking for talented individual for different technical role. Now a day candidates with core analytical skills, sound knowledge and practical significance and troubleshooting of different sophisticated analytical instruments are appreciated and required by all the research, manufacturing, processing and contract manufacturing industries as well as government & public testing labs.

This job oriented course designed to give huge scope and ample opportunities in different industries like Food, pharmaceuticals, agrochemicals, fine chemicals, cosmetics, oil and paints perfumery, beverages, rubbers, plastics, clinical research, forensic, public testing labs, etc. Candidates with the core analytical skill of different sophisticated analytical instruments can set up their own testing laboratories also.

The Department of Chemistry, Shri Shivaji Science College, Amravati organized this one month value based national training course for PG and research students from 17/08/2021 to 07/09/2021 under the guidance of Dr G. N. Chaudhari, Principal, Shri Shivaji Science College Amravati, Dr H. S. Lunge, Coordinator, IQAC, Dr. Shrikant A. Wadhwal, course coordinator, Mr. Amol Gawande, Scientist, Peaks Analytical and Research Centre, Nagpur, Dr. Amit Bansal, coordinator & Head SEAF & BDG, NEERI, Nagpur, Dr Atul Wankhade, Department of Chemistry, VNIT, Nagpur provided online training regarding some latest instruments like HPLC, Gas Chromatography, GCMS, Atomic absorption Spectrophotometer, IR, UV- VIS double beam, UV –DRS, Karl Fischer instrument, ICP-OES used in laboratories and various companies.

Total 154 participants from different colleges from India participated in this course, In this course participants were from Kalindi college, Delhi University, Department of chemistry University of Delhi, M.S.G. college Malegaon, KPG College, Igatpuri, Nashik, KTHM College Nashik, Adarsh Mahavidyalaya Dhamangaon Rly, Bajaj College, Wardha, Vaidyanath college, Beed, Nabira Mahavidyalaya, Katol, RTM Nagpur University, Nagpur, NES Science College, Nanded, Santaji Mahavidyalaya Nagpur, Phulsingh Naik Mahavidyalaya Pusad, Mahatma Fule Mahavidyalaya, Warud, Jagadamba college, Achalpur, Shri Shivaji Science College, Akola, SGB Amravati University, Vidyabharati College Amravati, Narasamma College Amravati, GVISH Amravati, Shri Shivaji Science College, Amravati. In this course out of 154 participants 108 qualified this course. Certificates provided to students with A, B, C grade depending on score secured (A⁺ >= 80%, A >= 65-79, B >= 50-64%, No certificate < 50%) 40% marks depends on assignment submitted and attendance and 60% marks will depends on final examination score.

Intercollegiate seminar competition for BSc II (SEM IV)

Shri Shivaji Science College, Amravati conducted the Inter-Collegiate Seminar Competition on virtual mode on 27th August 2021 in the Department of Chemistry. The seminars were focused on various topics of chemistry that included addressing the full aspects of the topics. All the participants from various colleges affiliated to Sant Gadge Baba Amravati University, Amravati and faculty members were present for this seminar competition. Dr. B.N. Berad, Ex-Professor, P.G. Department of Chemistry, RTM, Nagpur University, Nagpur was the Chief Guest of the Inaugural Ceremony. In his speech he told about the importance and main objective of seminar competition. They also told about the Seminars hold great importance in the students' life. Such competitions are the platforms not only to learn new aspects, others perspectives and latest information, but also a good way of networking, by learning about new topics and meeting leaders in their field student feels encouraged and motivated. Introductory speech was given by Dr. S. K. Rithe, Convener of the Seminar Competition. In his introductory speech he told about the aims of organizing this seminar competition and its importance.

Dr. P. R. Mandlik, Organizing Secretary, has introduced the chief guest and the judges present for the inaugural function. Dr. Sharayu Deshmukh, Associate Professor, Shri. Shivaji Science College, Akola., Dr. P. P. Deohate, Associate Professor, RLT Science College, Akola and Dr. G. M. Dongre, Associate Professor, Shri Shivaji Science College, Akola was the Judges for this seminar competition.

After an inaugural function, the student-participants have delivered their topics online in the presence of honorable judges.

The topics were based on B.Sc. II Semester 4 syllabus of Chemistry as mentioned under- Unit 1: Chemistry of elements of transition series extraction of elements.

Unit 3: Poly nuclear hydrocarbons reactive methylene compounds and carbohydrates.

Unit 6: Crystalline state.

There was enthusiastic participation of all the students with good presentation and question answer session was well mannered by the judges. Overall the students have given nice response. After the completion, three best students were selected by the judges and they were felicitated in Prize distribution program.

The prize distribution program was chaired by Dr. G. N. Chaudhari, Principal & Head of the Department of Chemistry, Shri Shivaji Science College, Amravati. The chief guest, Dr. B. N. Berad, respected judges Dr. Sharayu Deshmukh, Dr. P. P. Deohate and Dr. G. M. Dongre, Dr. S. K. Rithe, Convener of the seminar and Dr. P. R. Mandlik, Organizing Secretary. Respected Chief Guest and Judges were also distributed the prizes to the participants.

First cash prize for Rs. 1001/- received by Miss. AmishaDahake, student of Shri. Shivaji Science College, Amravati and the second cash prize for the Rs. 701/- goes to you Miss. MuskanNavrangabade, student of B. B. Arts Commerce and Science College, Digras. The third cash prize for Rs. 501/- was received by Miss. Anushka Kochar, student of Shri. BrijlalBiyani Science College, Amravati.

After completion of prize distribution ceremony, Dr. G. N. Chaudhari, congratulates the winner of this seminar competition. In his presidential address, Dr. Chaudhari especially praised the students and said that the program should be repeated so that the children can learn something from it as well as their confidence will increase and they will be able to stand on their own feet in the future. He also told that, due to the programme conduction is on virtual mode, more students could not participate in the seminar today, but from now on, if the opportunity arises, more students should participate in it, so that they can develop an interest in the subject.

The program was conducted by Dr. N. A. Kalambe. Finally the function was ended up by giving a vote of thanks from Dr. S. P. Ingole. All the team members took lot of efforts for smooth conduction and to make it successful.

Sr. No	Name of Students	Name of Topic	Remark
1	SauraoGadge	Elements of Transition Series	
2	Zarafshan Fatema Naeem A. Siddiqui	Electrophilic Substitution of Naphthalene	
3	Altaf Ali	Crystalline States	
4	Priya Keshwani	Crystalline States	
5	Saloni Trivedi	Crystalline States	
6	MuskanNavrangabade	Comparative Study of 3d Transition Series	Second
7	Krishna Bagadia	Crystalline States	
8	Aastha Wasnik	Carbohydrates	
9	Radhika Gandhare	Reactive Methylene Compounds	
10	Anushka Kochar	Chemistry of Transition Elements	Third
11	Vaishnavi Deshmukh	Chemistry of Elements of Transition Series	
12	ArbiyaKausar Mohammad Ansar	Transition Elements	
13	AmishaDahake	Ellingham Diagram	First
14	Sayyed Fatema Zohra Syed Mumtazuddin	Crystalline States	
15	Pallavi Mendhe	Crystalline States	
16	Nikita Menghal	Crystalline States	

MENSTRUAL HYGIENE DAY

Every year Career oriented course in cosmetology under the Department of Chemistry celebrates **Menstrual Hygiene Day** –a global event aimed at promoting the importance of safe menstrual hygiene management to create awareness amongst the fresher's. The global theme for the Menstrual Hygiene Day 2021 was **"We need to step up action and investment in menstrual health and hygiene now!"**

Covid -19 pandemic has demonstrated that menstrual hygiene is a multifaceted challenge in India. Lack of access to period products was just at the tip of the iceberg when it came to the impact of the coronavirus crisis on period health. Due to pandemic the past year has made it more difficult than ever to safely manage their periods. Sanitary pads were not included in the governments list of essential items ,a number of barriers to accessing sanitary products. Awareness about different home -made and readymade sanitary products available, maintenance of hygiene during periods and the myths about menstrual hygiene was created by circulating a ppt on **Menstrual Hygiene** to the students.

Motivational Lecture by Francis Patel for the participants of National Level Video Elocution Competition.

On the 6th of August, 2020, the department of Chemistry organized a Motivational Lecture for the participants of National Level Video Elocution Competition organized by the college. It's a thing of great pride for the college that this Video Elocution Competition got registered in the prestigious **U.N.EnvironmentProgramme-2020-21**.

Mr. Francis Patel, a well-versed teacher and motivational trainer provided his expert guidance to the participants of this competition. He inspired the participants by telling some very inspiring stories in a playful way. He also guided the participants for their effective communication and presentation skills. This event helped inculcate reading, listening and speaking skills amongst the students. In all, 95 students and 20 teachers attended this programme. The students were highly benefitted by this event and could perform far more effectively in the competition.

Prof. Dr. Anjali Bodade worked as an In-Charge Professor for the event.

ONE DAY WORKSHOP ON OPPORTUNITY FOR WOMEN ENTREPRENEUR IN THE FIELD OF BEAUTY, COSMETIC AND PATENTING

One Day Workshop On **Opportunity For Women Entrepreneurs In The Field Of Beauty, Cosmetics And Patenting** was Organised on Sunday 7 March 2021 by Department of Chemistry, under the guidance of Course co-ordinator of Cosmetology Dr Anjali Bodade. The Workshop was graced by the linking of intellectual personalities, Principal, Dr V.G.Thakare as the chairman, Speaker, Dr Rahul Phate, Dr G.N.Chaudhari Prof & Head of Department of Chemistry, Prof Dr Archana Burghate Senior Faculty Member, Teaching Fraternity, and students.

The objective behind arranging such an event was to Promote female entrepreneurship, Enable Progress in Technology, to Implement skill and to encourage research and Patenting in the new generation, Rahul Phate Sir a result oriented Innovator, a successful entrepreneur in the field of Cosmetic and a dedicated personality who has devoted his whole life to beautify the world guided the students on the various job openings in the field of cosmetics. Being a renowned Cosmetologist he gave very simple beauty tips to the students. He also gave offer for marketing his research products and franchise. Advocate Ashutosh Swarankar, Director BLI consultancy, pvtltd, New Delhi focused on patenting and in details explained about type of work to be done for patenting rules and regulation for filing the patent through demonstration. He had given an open invitation to the students for guidance regarding patent filing as and when needed in future. Program was conducted by Dr Harshali Wankhade.

National Science Day Celebration

The poster competition was based on different theme of the National Science Day 2021,

- 1 Chemistry of colors in fruits and vegetables
- 2 Role of Chemistry in Medicine
- 3 Chemistry of Nutrients
- 4 Role of youth to protect Environment

Department of Chemistry, Shri. Shivaji Science College celebrated the "National Science Day" On Virtual mode. It is a mark of respect to the most eminent scientist of India and the world, Dr. C.V. Raman on 28 Feb 2021 in Department of Chemistry, Shri Shivaji Science College, Amravati. Undergraduate Student and all the faculty members were present for the inauguration of National Science Day. Principal of SSSC Dr. V. G. Thakare. delivered a welcome speech and introduced the main Objective of celebrating National Science Day.

As part of the celebrations "Poster Presentation competition" was held for students Department of Chemistry, Shri. Shivaji Science College, Amravati on 28th February 2021. There was enthusiastic participation from all the students. Resp. Principal Dr. V. G. Thakare, Resp. Head Of Dept. Dr. G. N. Choudhari, Co-ordinator of NSD-21

Dr. P. R. Mandlik and team distributed Certificate of Participation and Momento to all the winners of competition. Dr. N. H. Bansod and Dr. N. A. Kalambe In-charge of the Poster Presentation took efforts for success of this event.

Review of Paper Writing

The review of paper writing activity was organized for M.Sc. I and II students on 22th July 2021. The purpose of this activity is to introduce basic concepts in the research field. This activity helps students to carry out their research project work in proper channel and published it in the national or international journal. Total forty eight students attend this activity. This activity was started from the power point presentation of Dr. Y. S. Thakare which includes how to select research topic, literature review, experimental work, data analysis and characterization.

The main focus of this activity towards how to take review of article which is a survey of previously published research on a topic. It gives an overview of current thinking on the theme and, unlike an original research article, won't present new experimental results. The objective of a literature review provides students for critical evaluation of the data available from existing studies.

After that general idea about how to write the title, abstract, keywords, introduction, experimental procedure, result and discussion, conclusion and references was explained. Students were introduced about what is citation, impact factor, h-index, i-index, i10-index. This presentation pointed out various UGC - CARE approved journal from different research area of chemistry. What is Google scholars. How to write the paper for particular journal, abbreviation of journal and explain author guidelines for that journal. How to register for the journal, procedure to send the paper to journal and How to write the project was also explained. Hard copy of research sample paper related to their project work was provided to the student during activity. This activity explored and opened the platform to

- Provide a comprehensive foundation on a topic
- Explain the current state of knowledge
- Identify gaps in existing studies for potential future research
- Highlight the main methodologies and research techniques
- Create an understanding of the topic for the reader by discussing the findings presented in recent research papers.
- Present/published their work in near future.

All the students were actively participated and discussed how to write paper for different journal.

Science Awareness Program

TO promote the interest of the school students in science subject and to acquaint them with the knowledge of history periodic table, Department of Chemistry arranged a two-fold activity an activity by P.G. students for the school children through **Science Awareness Program at Kasturba Kanya Shala Amravati** on Monday 8th February 2021. The program began with garlanding the portrait of Dr Bhausaheb Punjabrao Deshmukh the founder president of our society followed by **tree plantation** and inaugural function. Newly appointed headmistress Mrs Archana Lunge was felicitated by our staff Dr A.B. Bodade, Dr N.H. Bansod, Dr Shruti Ingole and Dr Archana Bodade. Activity in charge Dr Anjali Bodade informed about the event and the preventive measures during Covid -19 pandemic, while Dr N.H. Bansod gave a motivational talk. P.G. students Ms Rutuja Harne, Mr Niraj Diwedi, Mr Amol Rokade and Mr Chetan Soye taught the students basic Concepts in Chemistry and gave Tricks to learn Periodic table by maintaining Social distancing in a batches of 35 students in two classrooms. At the end evaluation was done through questionnaire and appreciated by offering chocolates. Mr Niraj Diwedi who received a patent guided the students on out of the box research oriented thinking and the steps taken to patent his own ideas.

Prof. Dr. Anjali Bodade worked as an In-Charge Professor for the event.

Online National Periodic Table Day Celebration

National Periodic Table Day was Celebrated by Department of Chemistry along with the School children of standard X from **Ratnabai Rathi Mahavidyalaya, Daryapur** on **Sunday ,7th February 2021** by arranging a webinar on History of Periodic Table. Introductory remark on fun in learning chemistry and periodic table was given by Dr A.B.Bodade. Our college students from B.Sc.II (PCM) – Ms Rudrani Barabde and Mr Shubham Wadurkar explained the topic History of Periodic Table to the School children of Ratnabai Rathi Mahavidyalaya, Daryapur by power point presentation. Feedback was taken by asking questions Prof. Dr. Anjali Bodade worked as an In-Charge Professor.

Webinar on the TOPIC: TRENDS IN E- RESOURCES IN THE DIGITAL ERA, ACADEMIC INTEGRITY AND RESEARCH ETHICS

Our college strives for a culture of excellence in education that promotes research and fosters creative talents. Department of Chemistry always leads in arranging activities for the students.

Today as we are experiencing the churning of the education system to raise up the new Generation. (Generations/Net Generation). Online Webinar On The **Topic Trends In E Resources In The Digital Era ,Academic Integrity And Research Ethics** is the outcome of the brain child of CHEMISTRY DEPARTMENT for shaping the new generation to walk the unexplored path. Our aim was to promote research culture among faculty, research scholars and post graduate students . The main objective of this webinar was to initiate students to express their innovative ideas .To work collaborate and make team work as a part of research culture.

The Webinar was graced by the linking of learning personalities , Principal, Dr V.G.Thakare as the chairman , Speaker, Dr Vaishali .P. Gudadhe Dean faculty of interdisciplinary studies , Professor and Head of library and information science , Director of Women Studies Centre, Sant Gadge Baba Amravati University , Dr G.N.Chaudhari, Professor and Head of Chemistry Department, All the teaching staff, research scholars and the Post graduate students in majority.

Dr G.N.Chaudhari gave the introductory remark, Hon'ble Dr V.G.Thakre, Chairman for this event highlighted his views on research. While the speaker, Dean Dr Vaishali .P. Gudadhe guided the students on The **Topic Trends In E Resources In The Digital Era, Academic Integrity And Research Ethics** . Information on online free e-resources was given in detail. In the present era of information technology awareness about copyright, license policy, alertness about plagiarism , plagiarism policy tools which is very essential . We received an overwhelming response for the webinar.

In all, the organizers tried their best to follow what Respected Dr APJ Kalam has said- "Every mind is creative. Every mind is inquisitive....." Prof. Dr. Anjali Bodade worked as an In-Charge Professor for the event conducted the event. While vote of thanks was expressed by Dr Shruti Ingole.

OUTCOME:

- to initiate in students the habit of thinking out of the box.
- to express their innovative ideas .
- to work collaborately and make team work as a part of culture. to take ownership of their learning .
- Embrace diversity and flexibility .And allow remote work.

Earth Day Celebration

With an aim to save the planet Earth, Guardian Teacher Committee celebrated Earth Day from 22 April to 24 April 2021. The group leaders were asked to encourage the students of their Guardian Teacher group to celebrate each day as EARTH DAY. Earth day celebration encouraged us to reflect on what we are contributing to make our planet a more sustainable and livable place.

Students were asked to submit their photograph while planting, watering, hugging, appreciating the beauty, caring for nature. Our efforts are to save our planet by conservation of air, water, soil, plants, birds, animals. Our aim was to create awareness about conservation of ecosystem and that all living organism struggle for existence and have emotions.

Our students actively participated in this activity.

Aptitude Test in Chemistry

The online Aptitude Test in Chemistry was organized by department of Chemistry **12th August 2021** at 1.00 pm for B.Sc. I students offering chemistry. The aim of the activity is to explore the basic concept of chemistry and enhance the knowledge and skill. The basic idea regarding the organization of APT -21 to determine individual skill and propensity to succeed in given activity.

Due to pandemic, this time we organize it online mode. The APT -21 consists of 50 MCQ, 50 Maximum marks with 1 hour duration. The question mainly on based 11th and 12th Syllabus. In all 203 students participated in the Aptitude Test in Chemistry (APT-21) out of which the first three ranker are as follows,

- 1. Miss. Kanchan Rajesh Soni – I Bio 49 marks –28 Min.**
- 2. Miss. Sakshi Gajanan Wathodkar – I CEZ -49 Marks -34 Min**
- 3. Miss. Kajal Shashikant Bele – I BIO 49 Marks -47 Min**

The prizes are given to the first three toppers.

Dr. G.N. Chaudhari
Professor & Head