

Shri Shivaji Education Society Amravati's
Science College, Congress Nagar, Nagpur
Internal Quality Assurance Cell

DEPARTMENT OF CHEMISTRY_

INTERNAL ACADEMIC AUDIT

2023-2024

1. A. Faculty Strength:

| Faculty | Recruited | Vacant | Remarks |
|----------------|------------------|---------------|----------------|
| Regular | UG=10,PG=1 | 02 | |
| CHB | PG=01 | -- | |
| Ad-hoc | UG=02, PG=1 | -- | |
| Non-teaching | 07 | 03 | |

B. Faculty profile

| Name of Faculty | Highest Qualification | Designation | Specialization | Teaching Experience |
|---------------------------|---------------------------------|---------------------|-------------------------|----------------------------|
| 1. Prof. R. U Khope | M. Sc, M Phil, B. Ed, Ph. D. | Head and Professor | Physical Chemistry | 31 Years |
| 2. Prof. P. S Utale | M. Sc, Ph. D. | Professor | Organic Chemistry | 24 Years |
| 3. Prof. Y. K Meshram | M. Sc, SET, Ph. D. | Professor | Organic Chemistry | 28 Years |
| 4. Prof. J. K Gunjate | M. Sc, SET, NET, Ph. D. | Professor | Organic Chemistry | 20 Years |
| 5. Prof. R. D Urkude | M. Sc, Ph. D. | Professor | In-Organic Chemistry | 18 Years |
| 6. Prof. R. A Deshmukh | M. Sc, Ph. D. | Professor | Organic Chemistry | 18 Years |
| 7. Mr. Sandip Dautpure | M. Sc, M.Ed SET, NET, | Assistant Professor | Organic Chemistry | 15 Years |
| 8. Dr. S. S. Dhote | M.Sc Ph.D | Assistant Professor | Organic Chemistry | 14 Years |

| | | | | |
|----------------------------------|--------------|---------------------|----------------------|----------|
| 9. Dr. Priyadarshani N. Deshmukh | M. Sc, Ph. D | Assistant Professor | Organic Chemistry | 06 Years |
| 10. Dr. Vrushali Kinhikar | M. Sc, Ph. D | Assistant Professor | Organic Chemistry | 17 Years |
| 11. Dr. Shubhangi J. Kene | M. Sc, Ph. D | Assistant Professor | Analytical Chemistry | 4 Years |

2. Student's strength

| Group | | Number of Students |
|---------------------|---|--------------------|
| B.Sc. Semester I | PCM | 26 |
| | CZM | 32 |
| | CBM | 21 |
| | CBZ | 45 |
| | CBG | 19 |
| | CGM | 7 |
| | PCG | 8 |
| | CMBT | 82 |
| | Total | 230 |
| B.Sc. Semester III | PCM | 35 |
| | CZM | 28 |
| | CBM | 28 |
| | CBZ | 46 |
| | CBG | 15 |
| | CGM | 21 |
| | PCG | 16 |
| | CMBT | 76 |
| | Total | 265 |
| B.Sc. Semester V | PCM | 37 |
| | CZM | 27 |
| | CBM | 24 |
| | CBZ | 45 |
| | CBG | 19 |
| | CGM | 12 |
| | PCG | 14 |
| | CMBT | 69 |
| | Total | 247 |
| M.Sc.Semester I | | 17 |
| M.Sc.Semester III | | 15 |
| Ph.D. | | 07 |
| Value Added Program | Certificate Course- Chemical and Instrumental Analysis on Solid Fuel, Petroleum Products, Ore and Minerals. | 01 |
| | Certificate Course- Environmental and Water Management. | 01 |

| | |
|-----------------------------------|---------|
| P. G. STUDENT INDUCTION PROGRAMME | Yes, No |
| ACADEMIC PLANNINGS | Yes, No |
| BRIDGE COURSE TAUGHT | Yes, No |
| REMEDIAL COURSE TAUGHT | Yes, No |

3. Student Performance

A. Result Analysis (Winter 2023) UG & PG

| Programme Name | Number of students who appeared in the final year examination | Number of students who passed in final year examination | Pass Percentage |
|----------------|---|---|-----------------|
| B.Sc | 265 | 172 | 64.90 |
| M.Sc | 26 | 14 | 53.84 |

B. Result Analysis (Summer 2024) UG & PG

| Programme Name | Number of students who appeared in the final year examination | Number of students who passed in final year examination | Pass Percentage |
|----------------|---|---|-----------------|
| | | | |
| | | | |

C. Achievements

A- (Medals/Awards/Prizes at University level)

| Sr. No. | Name of the Students | Class | Title |
|---------|----------------------|---------------------|--|
| 1 | Aishwarya Mendwade | B.Sc. IV sem PCM | 2 nd position in seminar competition on the occasion of Science Day on 7 th March 2024 at Jawaharlal Nehru Arts, Commerce and Science College, Wadi Nagpur. |
| 2 | Sakshi S.Mohite | M.Sc. IV sem | Participated in Khasdar Krida Mohatsav and also in International Taekwon-do Fedration. She has been selected in the ALL INDIA INTER UNIVERSITY WUSHU (WOMEN) Championship held at Jammu in Feb 2023. |

| | | | |
|---|--------------|--------------|---|
| 3 | Shabhat Khan | M. Sc. I Sem | Winner RTMNU University Level from Arts and Language category |
|---|--------------|--------------|---|

B- Merit Position of UG Students in RTMNU

| Sr. No. | Name of the Students | Merit Position |
|---------|----------------------|----------------|
| 1 | | |
| 2 | | |
| | | |

C- Merit Position of PG Students in RTMNU

| Sr. No. | Name of the Students | Merit Position |
|---------|----------------------|-----------------------|
| 1 | Ku.Manisha Sharma | 8 th Merit |

4. Student's Progression:

| No. of students enrolling in higher Education | Name of institution joined | Name of program admitted to |
|---|----------------------------|-----------------------------|
| UG to PG | | |
| PG to Research | | |
| Placement | | |
| On-Campus | | |
| Off-Campus | | |

(i) Students' publication in Conferences/ Journals:

| Title of the Paper | Name of Author | Title of journal | Year of publication |
|--------------------|----------------|------------------|---------------------|
| | | | |

(ii) Students' participation in Seminar/ Conferences:

| Sr. No. | Name of Students | Conference type | Participation as |
|---------|-------------------------------|-----------------|-------------------|
| 1. | Ms.Sejal Bharne (M.Sc.IV sem) | National | Oral Presentation |
| 2. | Ms. Sana Khan (M.Sc.IV sem) | International | Oral Presentation |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |

(iii) Students' Extension Activity/ Extracurricular activity

(iv)

| Sr. No. | Name of the activity | The number of students who Participated |
|---------|---|---|
| 1. | Development of Talking Tree smart Phone application to NUST Zimbabwe (Sakshi Mohite, Sejal Bulkunde, Kanchan Singh, and Sana Khan) | 04 |
| 2 | Patent Published of students Sakshi Mohite, Sejal Bulkunde, & Kanchan Singh | 03 |
| 3 | Winner RTMNU University Level from Arts and Language category – Shabhat Khan (M.Sc.IV sem) | 01 |
| 4 | Winner RTMNU University Level from Arts and Language category – Khushi Somkuwar (B. Sc.VI sem) | 01 |
| 5. | Two students (Shrushti Ninawe, and Vasu Madekar from B. Sc. VI) winner under top 5 projects in CompEx24 | 02 |
| | | |
| | | |
| | | |

(v) Participation of Students in online/MOOCs courses/ NPTEL/ SWAYAM

| Sr. No. | Name of the Students | MOOCs / NPTEL/ SWAYAM |
|---------|------------------------|--|
| 1 | Ku.Sarita Wakodkar | Application of Spectroscopic Methods in Molecular Structure Determination -NPTEL Transition Metal Organometallic Chemistry:Principle to Applications-NPTEL Advanced Transition Metal Chemistry-NPTEL |
| 2. | Mr. Sandip V. Dautpure | 1-characterizaation of polymers , elastomers and composites. 2-chemistry of nanomaterials 3- introduction to research 4- research methodology 5-effective writing. |

5. Faculty

I. Research Paper Publications

A. Total Number of publications:

- i) International _ (02),
- ii) National -

B. Bibliometrics of the publications during the last Academic year based on average citation index in Scopus/ Web of Science or PubMed/ Indian Citation Index

| Title of the Paper Title of the Paper | Name of Author | Title of journal | Year of publication | Citation Index | Institutional affiliation as mentioned in the publication | Number of citations excluding self-citation |
|---|--------------------------|--|---------------------|----------------|---|---|
| Utilization of Granular Activated Carbon for Sustainable Environmental Contaminants Remediation | Yogita K. Meshram | Oriental Journal of Chemistry(S copus) | 2023 | | Shri Shivaji Science College, Nagpur | |
| Utilization of Granular Activated Carbon for Sustainable Environmental Contaminants Remediation | Dr R.U K hope(Co-author) | Oriental Journal of Chemistry | 2023 | | Shri Shivaji Science College, Nagpur | |
| Sequestration of Hexavalent Chromium in Aqueous Media Using Chitosan-Modified Biochar | Sarang S. Dhote | Oriental Journal of Chemistry (Scopus) | 2023 | | Shri Shivaji Science College, Nagpur | |
| Adsorption and Kinetics Study of RGAC and MGAC as an Adsorbent to Remove Heavy Metal Ions from aqueous solution By Surface Technology | Dr.Vrushali R.Kinhikar | Advances in Bioresearch(in WEB of Science) | 2023 | | Shri Shivaji Science College, Nagpur | |
| Determination of Levosalbutamol and Guaiphenesin in Pharamental Dosages | Prof.P.S.Utale | International Journal of Creative Research | 2023 | | Shri Shivaji Science College, | |

| | | | | | | |
|--|--------------------------|---|-------------------------|--|--------------------------------------|--|
| form by Simultaneous and Q-Analysis UV Spectro Photometric Method | | Thought(IJC RT-2023) Web of Science UGC Care | | | Nagpur | |
| Heterocyclic Complexes and Its Biological Actions | Prof.P.S.Utale | Journal of Emerging Technology and Innovative Research(JE TIR),UGC Care | 2023 | | Shri Shivaji Science College, Nagpur | |
| New Chromogenic Spray Reagent for Thin Layer Chromatographic Detection of Organophosphorus Fungicidal | Priyadarshani N.Deshmukh | Journal of Emerging Technology and Innovative Research(JE TIR) | Dec 2023 ISBN-2349-5162 | | Shri Shivaji Science College, Nagpur | |
| Utilization of Granular Activated Carbon for Sustainable Environmental Contaminants Remediation | Reshal Deshmukh | Oriental Journal of Chemistry(Scopus) | 2023 | | Shri Shivaji Science College, Nagpur | |
| Recent developments in the organic synthesis using nano-NiFe ₂ O ₄ as reusable catalyst : A comprehensive synthetic and catalytic reusability protocol | J. K. Gunjate | Results in Chemistry (Elsevier) Scopus Indexed | 2023 | | Shri Shivaji Science College, Nagpur | |
| Deltamethrin pesticide residues determination by GC MS?MS employing QuCHERS method for extraction on some consumable produce of peageonpea crop | Dr.Rashmi Urkude | European Chemical Bulletin | 2023 | | Shri Shivaji Science College, Nagpur | |
| Mini Review on effect of Aniline on liver and spleen | Dr.Rashmi Urkude | International Journal of enhanced research in | 2023 | | Shri Shivaji Science College, Nagpur | |

| | | | | | | |
|--|-------------------|---|------|--|--------------------------------------|--|
| | | science, technology and engineering | | | | |
| Genotoxic, Carcinogenic and reproductive studies on Aniline: Mini Review | Dr. Rashmi Urkude | International Journal of scientific researches in biological sciences | 2023 | | Shri Shivaji Science College, Nagpur | |

C. Faculty participation in conferences/seminars/workshops and symposia:

| Name of the Faculty | Title of Conference/ Seminar/ workshop Attended | Period | Level International/ National/ State /University /College | Whether Presented papers | Whether abstract /paper published in Souvenir/Abstract Book |
|---------------------|--|---|---|--------------------------|---|
| Prof. R. U. Khope | National Conference on Thermodynamics of chemical and biological Systems | 26 th -28 th October 2023 | National | | |
| Prof Y. K Meshram | National Conference on Thermodynamics of chemical and biological Systems | 26 th -28 th Oct 2023 | National | Yes | Abstract published in conference |
| Prof Y. K Meshram | State Level Conference on Women Empowerment at Pune | 23 rd Oct 2023 | State | No | No |
| Prof Y. K Meshram | International Conference on advanced sustainable Futuristics Materials | April 26-27, 2024 | International | Yes | |
| | | | | | |
| Sandip V. Dautpure | International Conference on Functional Materials (ICFM-2024) | 15-16 March-2024 | International | Yes | Yes |
| Sandip V. Dautpure | International Conference on Recent Technology in Innovative Smart System (RTISS-2024). | 20 January 2024 | International | Yes | Yes |

| | | | | | |
|-------------------|---|--|---------------|-----|---|
| Sandip V.Dautpure | International Conference on Advanced Sustainable Futuristic Materials (ASFM-2024) organized by Kamla Nehru Mahavidyalaya, Nagpur. | 26-27 April 2024 | International | Yes | Yes |
| Dr.R.D.Urkude | International Conference on Recent Technology in Innovative Smart System(RTISS-2024). | 20 January 2024 | International | yes | yes |
| Dr.R.D.Urkude | International Conference on Advanced Sustainable Futuristic Materials (ASFM-2024) organized by Kamla Nehru Mahavidyalaya, Nagpur. | 26-27 April 2024 | International | Yes | Yes |
| Dr.R.A.Deshmukh | International Conference on advanced sustainable Futuristic Materials | April 26-27,2024 | International | Yes | International Conference on advanced sustainable Futuristic Materials |
| Dr.R.A.Deshmukh | UGC sponsored National Conference Recent advancement in science and Technology | 10th Feb 2024 | National | yes | Abstract published in conference |
| Dr.V.R.Kinhikar | International Virtual Congress | 5 th August to 10 th August 2023 | International | Yes | Abstract published in conference |
| | UGC Sponsored National Conference on Science & Technology | 10 th February 2024 | National | Yes | Abstract published in conference |

| | | | | | |
|--------------------------|--|-------------------------------|---------------|-----|----------------------------------|
| | International Conference on advanced sustainable Futuristics Materials | April 26-27,2024 | International | Yes | Abstract published in conference |
| | National Conference in Multidisciplinary Research and Studies | 20 th March 2024 | National | Yes | Abstract published in conference |
| | International Conference on “Recent Technology in Innovative Smart System” | 20 th January 2024 | International | Yes | Abstract published in conference |
| Priyadarshani N.Deshmukh | UGC sponsored National Conference Recent advancement in science and Technology | 10th Feb 2024 | National | yes | Abstract published in conference |
| | | | | | |
| | KL Mehta College for Women Faridabad international conference on RSS 2024 | 20 January 2024 | International | yes | Abstract published in conference |
| | international conference on functional materials ICFM-2024 | 15 and 16 March 2024 | international | yes | Abstract published in conference |
| | international conference on advanced sustainable futuristic materials ASFM-24 Kamla Nehru College Nagpur Sharda University Greater Noida and CSIR National environmental engineering research institute Neeri Nagpur | 26 and 27 March 2024 | international | yes | Abstract published in conference |
| J. K. Gunjate | International Conference on Advanced Sustainable Futuristic Materials (ASFM-2024) organized by Kamla Nehru Mahavidyalaya, Nagpur. | 26-27 April 2024 | International | Yes | Yes |

D. Awards to Faculty members

| Name of Teacher | Title of the Award | Title of Agency/ Conference | National / International |
|--------------------------|---|--|-----------------------------|
| Sarang S. Dhote | Global Nature Peace Award | Raghuraj peepal Man Foundation | National |
| Sarang S. Dhote | Late Shri Mama Kshirsagar Achary Award | Sarvodaya Foundation, Nagpur | National |
| Dr. V.R.Kinhikar | “Dr.Sarvepalli Radhakrishan Best Teacher Award” | SOLETE (Society for Learning Technologies) Recognized by Govt. of AP India Reg. No. 186/2020ISO 9001-2015 certified | |
| Priyadarshani N.Deshmukh | Young Scientist Award | STAMI(Society for technologically advanced materials of India.in association with Smt.Rajkamal Bahurao Tidke Mahavidyalay Mauda,Nagpur | National |

6. Number of functional MoUs with institutions, other universities, industries, corporate houses, etc. during the year

| The organization with which MoU is signed | Year of signing MoU | Duration | List the actual activities under each MOU year wise | Number of students/teachers who participated under MoUs |
|--|---------------------|----------|---|---|
| Laxminarayana Innovation Technological University,Nagpur | 2024 | 5 years | Under Skill Base Programme “Hands on Training for the Instrumental Analysis of Petroleum Products And Solid Fuel “on 24 th and 25 April 2024 | 60 students/Teacher 01 |
| Kamala Nehru Mahavidyalaya Nagpur | 2024 | 1 years | 1-Guest Lecture-14-2-2024 On Advanced Sustainable Functional Nan materials. 2- Workshop of Low cost Calorimeter | 150 45 |
| | | | | |

7. „Research funds sanctioned and received from various agencies, industries and other organizations

| Nature of the Project | Duration | Name of funding Agency | Amount Sanctioned | Amount Received |
|-----------------------|----------|------------------------|-------------------|-----------------|
| | | | | |

8. Books Published

| Name of Author | Book | | Book Edited |
|------------------------------------|---|--|-------------|
| | Title | ISBN and Date | Chapter |
| Editor-In-Chief Dr.V.R.Kinhikar | ANALYSING AND COMPILING SO ₂ EXHAUSTS FROM INDIA'S COAL-BASED THERMAL POWER PLANTS | ISBN:978-81-968040-6-0 Date- 20/02/2024 | Book |
| Sarang Dhote Editor | Advanced Studeis In Multidisciplinary Research & Development | 978-81-964669-3-0 | Edited Book |
| Priyadarshani N.Deshmukh | Current Advances in Multidiciplinaey Research(Vol-2) | 978-81-964669-6-1 | Edited Book |

9. Research Guidance by Faculty during the year

| Name of the guide | Ph.D | | |
|-------------------|---------|-----------|------------|
| | Awarded | Submitted | Registered |
| Dr.Rashmi Urkude | | | 02 |
| Dr Yogita Meshram | | | 01 |
| Dr.J.K.Gunjate | | | 03 |
| Dr.R.A.Deshmukh | | | 02 |
| Dr.V.R.Kinhikar | | | 03 |
| Dr.P.D.Deshmukh | | | 01 |

10. Generation of funds through internal and external sources such as donations, consultancy, self-financing courses and so on.

| Name of the nongovernment funding agencies/ individuals/ self-financing courses /consultancy service. | Purpose of the Grant/Fund | Fund generated in rupees. |
|---|---------------------------|---------------------------|
| Distribution Of Water Testing Kit To Various Educational Institutes | Water Testing Kit | Rs. 11,000/- |
| | | |
| | | |

11. IPR Activity

| Sr. No. | Name of Faculty | Title | Patent/ Copyright/ Industrial Designs | National / International | Filled/ Published/ Granted/ Registered (For Copyright/ Industrial Designs) |
|---------|--------------------|---|---------------------------------------|--------------------------|--|
| 1 | Dr.Sarang S. Dhote | Transforming waste craft box into mini Emergency Power Bank | Patent | National | Published |
| 2 | Dr.Sarang S. Dhote | Micro Biological Thin Film for metal separation | Patent | National | Published |
| 3 | Dr.Sarang S. Dhote | Biodegradable Defense Against Radiation | Patent | National | Published |
| 4 | Dr.V.R.Kinhikar | AIR IONIZATION APPARATUS TO PURIFY AIR | Patent | National | Published/Grant 390910-001- AIR ionization apparatus to puify air . |
| 5 | Prof.P.S.Utale | System of Analysing Impact of Antibiotic Drugs and Binary mixture on Seed Germination | Patent | International | Published |
| 6 | Dr.P.N.Deshmukh | Micro Biological Thin Film for metal separation | Patent | National | Published |
| 7 | | | | | |

12. Alumni Engagement

- a. Contributes significantly to the development of the institution through financial and other supports.
-

13. Action Plan of the Department

- To organize poster ,quiz and curriculum related competitions.
- To enhance research publications in national and international Journal.
- To form linkages with National Laboratories like NCL,IICT Hyderabad.
- To arrange the lecturers of eminent scientists and Professor.
- To encourage UG and PG student for research.
- To organize conferences and seminars.
- To celebrate scientific days like Ozone days, world water day, Antidrug day.
- To synthesize the drugs, dyes and adsorbents for betterment of life.

14. Best Practices of the department

- a. “Rasaynvani” a Radio Station of Chemistry Department.
- b. Development of various Interactive smart phone applications to various educational institutes.
- c. Data source for Simulation Lab (ATL- Any time laboratory)
- d. Provided Question Bank as per university pattern.
- e. Conducted test on all unites as per university pattern.
- f. Digitalization of entire documents / records.
- g. Celebration of national science day.
- h. Celebration of Teacher day.

15. SWOT Analysis

Strength:

- Well Qualified, Competent and Experienced Staff.
- Self financing PG Course.
- Well quipped Laboratories.
- Number of options available with chemistry subject.
- Department is under CPE.
- Certificate course in environmental Analysis.

- Regular seminars, personality development, guest lectures and awareness programs.
- Laboratory is recognized for higher learning and research.
- Five faculties are supervisors.
- Remedial teaching to slow learners.
- NET/SET coaching centre.
- Four National Conferences are organized.

➤ **Weakness :**

- Average student seek admission in the subject.
- Research on social oriented problems.
- The gap between the industrial demand and curriculum.

➤ **Opportunities :**

- Employment potential for M.Sc. Student in chemical/ pharma companies.
- Student faculty exchange programme.
- Upcoming industries in MIHAN.
- Upcoming textiles Zone nearby Nagpur.
- To establish collaboration and Consultancy Services.
- To undertake interdisciplinary research having social relevance.
- Students can pursue research leading to Ph.D.

➤ **Threats :**

- Rapid technological changes.
- Strong competitors.
- Heavy academic burden.
- Less financial support by the State and University.
- Stagnant state investment in higher education.



[Handwritten Signature]
 Professor & Head
 Department of Chemistry,
 Shri Shivaji Science College
 Congress Nagar, Nagpur

Date:

Head of the Department