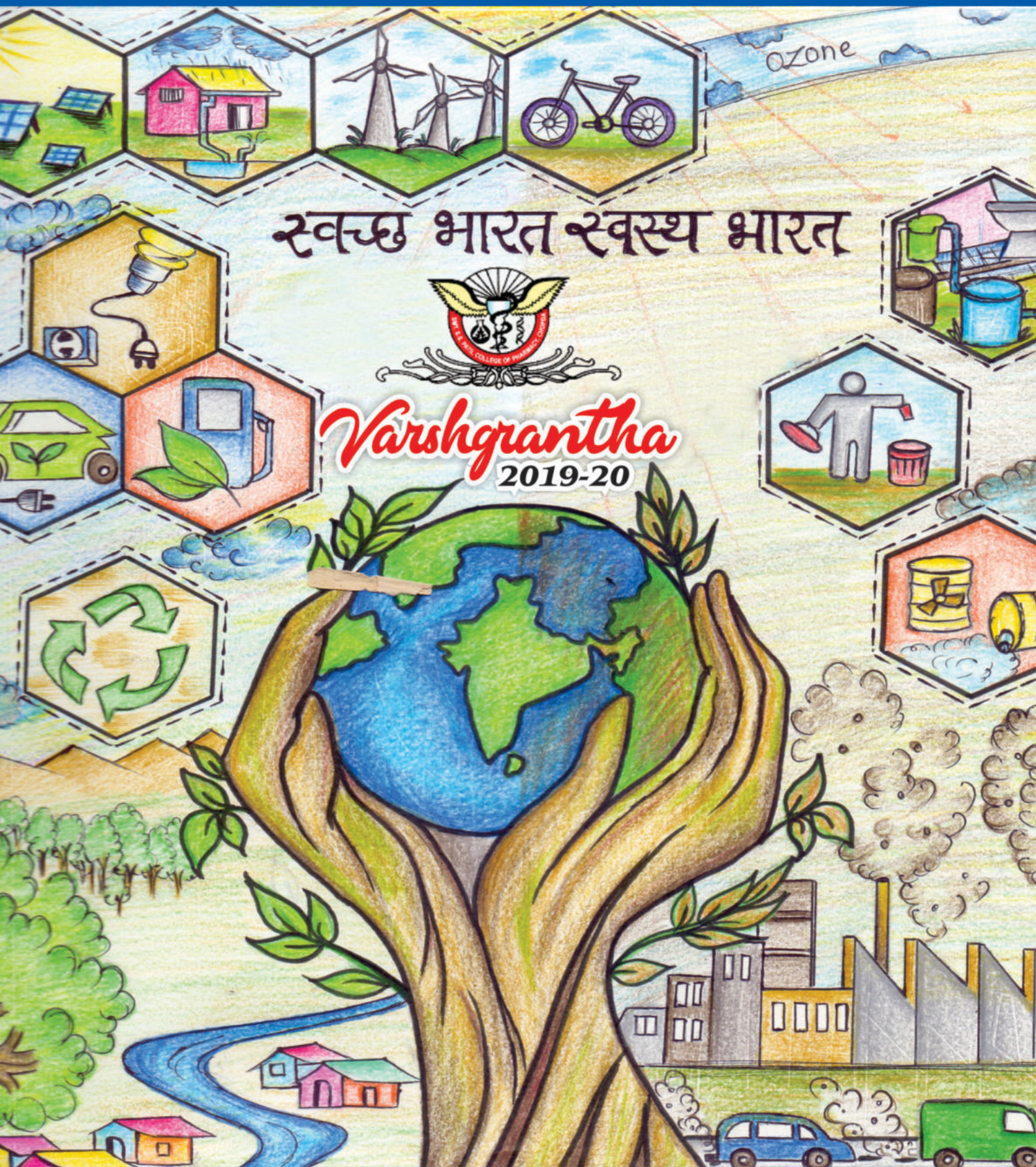
Mahatma Gandhi Shikshan Mandal's

# Smt. Sharadchandrika Suresh Patil

College of Pharmacy (B.Pharm, M.Pharm, Ph.D)
Chopda, Dist. Jalgaon, 425107 (M.S.)




# Varshgrantha

2019-20

# About College

## Vision

"To nurture excellence in pharmacy Profession and mould the Institution into a center of deft pharmacy professionals".

## Mission

"We are committed to deliver quality Pharmacy education in order to mould the learners into globally competitive pharmacists who are professionally, intellectually adept and socially responsible."

## Goal

"We look forward to having the privilege of continuing to earn confidence in respect to quality pharmacy education in the years to come. We can never forget age live in Competitive educational environment in era of globalization. We will continue to strive For improvement promising to deliver the very best and competent pharmacist, a Valuable asset of community. This is our goal at Smt. Sharadchandrika Suresh Patil College of Pharmacy, Chopda, that goal will never change".

## Dreams

"To strengthen pharmacist of new era who can developed latest pharmaceutical expertise and facilities in order to deliver high tech and individually tailored medicines In the primary care setting".

# Varshgrantha

## Annual College Magazine
## 2019-2020

This Copy belongs to

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MAHATMA GANDHI SHIKSHAN MANDAL'S
***SMT. SHARADCHANDRIKA SURESH PATIL COLLEGE OF PHARMACY,***
CHOPDA - 425107
Dist. Jalgaon, Maharashtra, India.

# DECLARATION

## FORM IV

Statement about ownership & other particulars about the magazine.

| | | |
|---|---|---|
| Name of Magazine | : | ***Varshgrantha*** |
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| Editor In Chief | : | **Mrs. Suvarnalata Suhas Mahajan** |
| Editor In Chief | : | **Mrs. Prerana N. Jadhav, Mrs. Kranti D. Patil, Ms. Priyanka V. Patil** |
| Nationality | : | **Indian** |
| Address | : | **Smt. Sharadchandrika Suresh Patil College of Pharmacy, Chopda - 425107, Maharashtra, India** |
| Cover Page Design | : | **Ms. Dipali Patil, Final Year B.Pharm** |
| Name & Address of individuals who own the magazine partner or shareholder holding more than one percent of total captil | : | **Principal, Dr. Gautam P. Vadnere Smt. Sharadchandrika Suresh Patil College of Pharmacy, Chopda - 425107, Maharashtra, India** |

I Dr. Gautam P. Vadnere, hereby declare that the particulars given above are true to the best of my knowledge.

Signature of the
Publisher
Sd/
**Dr. Gautam P. Vadnere**

**Disclaimer:** The opinions expressed in the articles are those of the Writers.
Editor is not responsible for their views & opinion.

# OUR PIONEER

**Late Hon. Smt. Akkasaheb Sharadchandrika Suresh Patil**

Ex Minister of Education, Maharashtra State.

# OUR PATRON

**Hon. Dr. Dadasaheb Suresh G. Patil**
Founder President, MGSM, Chopda

**Hon. Adv. Bhaiyasaheb**
**Sandeep Suresh Patil**
President, MGSM, Chopda

**Hon. Taisaheb**
**Dr. Smita Sandeep Patil**
Secretary, MGSM, Chopda

**Hon. Taisaheb Asha V. Patil**
Vice President, MGSM, Chopda

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Assistant Professor,
Department of Pharmaceutics

**Co-editor-in-Chief**
**Mrs. Priyanka V. patil**
Assistant Professor,
Department of Pharmaceutics

# Student Editors

## First Year

Samruddhi Saner

Nikita Rathod

Yogeshwari Ahirrao

Rohit Patil

Rushikesh Pawar

## Second Year

Rohit Raj

Yukta Chaudhari

Sakshi Lad

Samiksha Kotkar

Manuja Zade

Nalini Wagh

## Third Year

Vaishali Bhoi

Kajal Nikam

Neha Jogi

Ashwini Jadhav

Yogeshwari Patil

## Final Year

Harshali Songire

Shiwani Patil

Smita Patil

Snehal Pawar

Jaya Patil

# MESSAGE

प्रो. अनिल डी. सहस्रबुद्धे
अध्यक्ष
**Prof. Anil D. Sahasrabudhe**
**Chairman**

सत्यमेव जयते

अखिल भारतीय तकनीकी षिक्षा परिषद्
(भारत सरकार का एक सांविधिक निकाय)
(मानव संसाधन विकास मंत्रालय, भारत सरकार)
नेल्सन मंडेला मार्ग, वसंत कुंज, नई दिल्ली–110070
दूरभाष: 011.26131498
ई–मेल: chairman@aicte-india.org
वेबसाइट: www.aicte-india.org

**All India Council for Technical Education**
(A Statutory Body of the Govt. of India)
(Ministry of Human Resource Development, Govt. of India)
Nelson Mandela Marg, Vasant Kunj, New Delhi-110070
Phone: 011-26131498
Email: chairman@aicte-india.org
Website: www.aicte-india.org

**Swachh Bharat Abhiyan** is a campaign launched by the **Hon'ble Prime Minister, Narendra Modi** as a nationwide cleanliness campaign. It is only possible if each and every person living in India would understand this campaign as their own responsibility and try to join hands together to make it a successful mission. **Mahatma Gandhi** had a revolutionary vision about making India clean. Swachhata Mission is integrated with Swachh Bharat Abhiyan towards realizing this laudable vision. To fulfil **Mahatma Gandhi's** dream of a clean and hygienic India, Prime Minister himself initiated the cleanliness drive. The role of students in Swachh Bharat are like the real ambassadors of cleanliness and motivate others to keep their homes, campuses, and surroundings clean. Also to initiate cleanliness in their surrounding areas and make the drive a successful campaign.

Environment plays an important role in the healthy living of human beings, it matters because it is the only home that humans have, and it provides air, food, and other needs. Humanity's entire life support system depends on the well-being of all the environmental factors. Environment is a place where humans as well as plants and animals live. It is necessary to keep our environment clean because we get fresh air, reduce pollution etc. An unclean environment leads to a bad condition of a society, arrival of diseases and many more. A Green India Mission, launched in February 2014, is aimed at protecting, restoring and enhancing India's diminishing forest cover and responding to climate change by a combination of adaptation and mitigation measures.

**All India Council for Technical Education, New Delhi** is also promoting the Swachhata Mission by organising the various competition for its approved institutions like, Clean and Smart Campus Award, Jal Shakti Abhiyan, One Student One Tree, Swachhata Ranking where the huge response from the institutions are being observed. Many institutions have been examined as per the proposals submitted by them and felicitated by offering the certificates of recognition for following the good practices in their institutions for tree plantation, water conservation, campus cleanliness and smart utilisation of natural as well as artificial resources at their campus. I am sure that such drives are being conducted by AICTE is one step towards the development of smart cities in the country, as the students become aware about the environment, its importance and smart utilisation of the natural resources. After all the students are the nation builders and the awareness among them for Swachh Bharat Abhiyan is most desirable.

I am happy to know that the annual magazine **"Varshgrantha"** of **Smt. Sharadchandraika Suresh Patil College of Pharmacy, Jalgaon, Maharashtra** is covering the topics like "Swachh Bharat Abhiyan", "Rain Water harvesting", "Solar Energy as Green Energy" and "Greay Water Treatment" for the awareness creation purpose among the young generation. I congratulate to the editorial team as well as students and wish you all the Best and Success!!

**(Prof. Anil D. Sahashrabudhe)**

# MESSAGE

**Prof. P. P. Patil**
Hon'ble Vice Chancellor
Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon

I am happy to know that the Annual College Magazine ***"Varshgrantha"*** is going to be published.

Annual Magazine is a platform for students to display their innate talent in literary and cultural spheres. I am really happy that this year editorial team of the magazine and the students are working on the major topics ***"Swachh Bharat Abhiyan", Rain Water Harvesting", "Solar Energy as Green Energy" and "Treatment of Grey Water".*** I congratulate them for taking such a unique initiative. I am sure that such initiative will not only inspire the students to nurture their scientific temperament but also help to overcome the problems related to ***"Rain Water Harvesting", "Solar Energy as Green Energy" and "Treatment of Grey Water".***

My best wishes to the Annual Magazine ***"Varshgrantha".***

**Prof. P. P. Patil**
Vice-Chancellor

# MESSAGE

**Hon. Adv. Bhaiyasaheb Sandeep Suresh Patil**
President, M.G.S.M., Chopda

Nurturing creativity and inspiring innovation are two key elements of a successful education & a college magazine is the perfect amalgamation of both. Our vision is based on hard work, open communication, a strong emphasis on team work and a high level of responsibility. The college has made tremendous progress in all areas of academic, nonacademics, capacity building relevant to staff and students. The college has achieved another milestone by getting reaccreditation by National Board of Accreditation.

In this academic year our students enthusiastically worked on topics "Rain Water Harvesting", "Solar as Green Energy", "Treatment of Grey Water" and "Swachhta

Abhiyan" to disseminate the information and knowledge regarding such topics.

I take this opportunity to congratulate the Principal and his team of committed staff members for their enthusiasm towards value based quality teaching and efforts to ensure that each student is cared in the college. Also I congratulate the team of the students for their efforts that have come in front in the form of this magazine.

Through this message I wish all students "All the Best" for their future endeavors and hope that students bring more laurels to the college.

***"Swachh Bharat Swasth Bharat"***

*Best wishes and warm regards!*

# MESSAGE

**Hon. Dr. Smita Sandeep Patil**
Secretary, M.G.S.M., Chopda

It is a matter of great pleasure for me to go through the wonderful contributions made by the students. In this year's issue of **"Varshgrantha-2020"**, students have gathered information on topics "Rain Water Harvesting", "Solar as Green Energy", "Treatment of Grey Water" and "Swachhta Abhiyan".

As we embark into the celebration of Golden Jubilee of MGSM's, our commitment at Smt. SSPCOP is to provide a safe and intellectually challenging environment that will empower students to become innovative thinkers, creative problem solvers and inspired learners prepared to thrive in the 21st century. Smt. Sharadchandrika Suresh Patil, College of Pharmacy has imparted quality education and thus strong & dynamic entrepreneurs have evolved out of this institute.

It is my pleasure to congratulate the team that has taken the initiative for publishing this magazine. It is great to find a considerable number of articles, poems and drawings that give the information and knowledge on above topics.

***"Cleanliness is next to Godliness"***

*Wishing you the best of luck and our blessings!*

# MESSAGE

**Prof. Dr. Gautam P. Vadnere**
Principal, Smt. Sharadchandrika Suresh Patil,
College of Pharmacy

Smt. Sharadchandrika Suresh Patil College of Pharmacy, is an institution committed to provide knowledge, skills, ability, attitudes and beliefs that are essential for a productive and successful life. The college strongly believes in the wholesome growth of its students and make them available every opportunity and facility to exploit their talent. I appreciate every student who shared the joy of participation in co-curricular and extracurricular activities as well as this magazine.

As we all know that charity begins at home, likewise a contribution to society's welfare has to be initiated from one's home and so our students worked on following topics "Rain Water Harvesting", "Solar as Green Energy", "Treatment of Grey Water", and "Swachhta Abhiyan" and collectively have done the compilation of this year's magazine. Congratulations to the editorial team for their determined efforts in bringing out the same. I wish, **"Clean India, Beautiful India"**

*With Best Wishes!*

# MESSAGE

**Mrs. Suvarnalata S. Mahajan**
Assistant Professor
Department of Pharmaceutics
Editor In-chief

Dear Readers,

"Varshgrantha-2020" is designed to present its readers the year's events that have gone by, the magazine also showcases the talent of our faculty members and students along with the articles, poems, sketches on topic " Rain Water Harvesting", "Solar as Green Energy" , "Treatment of Grey Water" and "Swachhta Abhiyan". Our students disseminate the information and knowledge regarding above topics so that every individual will have to take responsibilities toward preserving and enhancing the environment.

I would like to thank our management and Principal Dr. G. P. Vadnere for his esteem guidance, support & encouragement throughout the making of the "Varshgrantha-2020". Also, I extend my thanks to all the contributors for their articles, poems and drawings.

The whole editorial committee feels privileged in presenting this special issue. Lastly I would like to say,

***"Go green to get India clean"***
***"Clean and safe energy, the solar energy"***

*Happy reading...!*

# Co-editors

**Mrs. Kranti D. Patil**
Assistant Professor

**Mrs. Prerana N. Jadhav**
Assistant Professor

**Mrs. Priyanka V. Patil**
Assistant Professor

We are very excited to publish "Varshgrantha 2020" as it is a themed based magazine and that is "Environment Awareness". At the time when we decided that magazine must have a theme, the very first topic came into discussion was environment awareness. As we know college magazine is open platform where students put their talent, art, creativity, ideas and innovations, to spread awareness about environment among students, teachers and ultimately to whole institute magazine is a best way possible for us and we tried our best to do so.

Our government also focuses on environmental issues and for that, is running some campaigns like, *"Swachh Bharat Abhiyan" and "Atal Mission For Rejuvenation and Urban Transformation"*. Taking a hint from that we included these topics for magazine as "Rain Water Harvesting", "Treatment of Grey Water", "Solar energy" and "Swachha Bharat Abhiyan". Motive was to make students understand the fragility of our environment and the importance of its protection. Promoting environmental awareness is an easy way to become an environmental steward and participate in creating a brighter future for our students.

We are very thankful to our beloved Principal Dr. G. P. Vadnere who constantly motivated and guided us throughout this magazine journey. We extend our gratitude to our management for providing us facilities and support we need.

Best Wishes from three of us.
Keep Reading, Happy Reading!

# College Toppers 2019-20

## First Year B. Pharm. (Sem. I) PCI

Agrawal Salony G.
(8.31)

Patil Vaishnavi R.
(8.03)

Mahajan Swati A.
(7.97)

## Second Year B. Pharm. (Sem. III) PCI

Wagh Nalini D.
(8.75)

Zade Manuja S.
(8.33)

Patil Divya D.
(8.25)

## Third Year B. Pharm. (Sem. V) PCI

Patil Ashwini A.
(8.92)

Nehate Yadnyiki K.
(8.50)

Patil Ashwini D.
(8.42)

## Final Year B. Pharm. (Sem. V) CGPA

Qureshi Alfaiz Shaikh
(8.38)

Songire Harshali R.
(8.23)

Patil Shivani S.
(8.15)

## First Year M. Pharm. Pharmaceutics (Sem. I) PCI

Patil Kiran H.
(8.54)

Sonawane Mahesh R.
(8.38)

Pawar Prasanna K.
(8.92)

## First Year M. Pharm. Pharmacognosy (Sem. I) PCI

Badgujar Pallavi S.
(8.46)

Patil Rohini A.
(8.15)

Nikam Manjusha S.
(7.92)

## Second Year M. Pharm. Pharmaceutics (Sem. III) PCI

Patil Shrutee S.
(8.76)

Patil Akansha L.
(8.76)

Patil Kavita M.
(8.76)

## Second Year M. Pharm. Pharmacognosy (Sem. III) PCI

Dhangar Tejashree T.
(9.43)

Mayuri Patil K.
(9.43)

## PROGRAMME OUTCOMES (PO's)

1. Pharmacy Knowledge: Possess Knowledge and comprehension of the core and basic Knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical science; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
2. Planning Abilities: Demonstrate effective effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
3. Problem analysis: Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making Decisions during daily practice . Find, analyze , evaluate and apply information systematically and shall make defensible decisions.
4. Modern tool usage: Learn, select, and apply appropriate methods and procedures resources, and modern pharmacy – related computing tools with an understanding of the limitations.
5. Leadership skills: understand and consider the human reaction to change, motivation issues, leadership and team- building when planning changes required for fulfillment of practice, professional and social responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well being.
6. Professional identity: Understand, analyze and communicate the value of their professional role in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).
7. Pharmaceutical Ethics: honour personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
8. Communication: Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
9. The Pharmacist and society: Apply reasoning informed by the contextual knowledge to assess social, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.
10. Environment & sustainability : Understand the impact of the professional pharmacy solutions in social & environmental contexts, & demonstrate the knowledge of, & need for sustainable development.
11. Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self assess and use feedback effectively from others to identity learning needs and to satisfy these needs on an ongoing basis.

## PROGRAMME EDUCATIONAL OBJECTIVES (PEO's)

1. Promoting priorities in developing professional growth through skill based learning in Pharmacy Practices.
2. Maintaining professional ethics and sustainability for Life Long Learning.
3. Creating professional identity by motivating leadership skill having adaptability for technical advancement.

# महात्मा गांधी शिक्षण मंडळ, चोपडा, जि. जळगाव

## गव्हर्निंग कौन्सिल

| | |
|---|---|
| १) श्री. ॲड. संदीप सुरेश पाटील अध्यक्ष चोपडा | १९) श्री. तुळशिराम धोंडू पाटील सभासद रूखनखेडा |
| २) सौ. आशा विजय पाटील उपाध्यक्ष चोपडा | २०) श्री. शशिकांत एस. हिवाळे सभासद धानोरा |
| ३) डॉ. सौ. स्मिता संदीप पाटील सचिव चोपडा | २१) श्री. यशवंत दोधू खैरनार सभासद चोपडा |
| ४) श्री. प्राचार्य डॉ. डी. ए. सूर्यवंशी सहसचिव चोपडा | २२) श्री. सुरेश सिताराम पाटील सभासद चोपडा |
| ५) श्री. डॉ. एन. आर. पाटील सभासद अमळनेर | २३) श्री. गणपती भाऊराव साठे सभासद चोपडा |
| ६) श्री. डॉ. संजय माणिकराव पाटील सभासद अडावद | २४) श्री. प्रा. डी. बी. देशमुख सभासद चोपडा |
| ७) श्री. जयवंत जगन्नाथ पाटील सभासद चोपडा | २५) श्री. निलेश रमेशचंद्र जैन सभासद अडावद |
| ८) श्री. मगनलाल रामदास बडगुजर सभासद चोपडा | २६) श्री. अरूण सदाशिव कंखरे सभासद चोपडा |
| ९) श्री. मो. ईब्राहिम शे. अकबर पटेल सभासद चोपडा | २७) श्री. नितीन सत्सनारायण काबरे सभासद गणपूर |
| १०) श्री. मधुकर हिलाल पाटील सभासद गणपूर | २८) श्री. लिंबा मोतीराम पाटील सभासद घोडगाव |
| ११) श्री. प्रमोद सिताराम पाटील सभासद वढोदा | २९) श्री. मधुकर शिवराम निकम सभासद वढोदा |
| १२) श्री. डॉ. हनुमंतराव गंगाधर सूर्यवंशी सभासद चोपडा | ३०) सौ. वंदना संजय पवार सभासद धुळे |
| १३) श्री. अशोक नारायण पाटील सभासद चहार्डी | ३१) श्री. चंद्रशेखर युवराज पाटील को-ऑप सभासद चोपडा |
| १४) श्री. गोविंद किसनलाल गुजराथी सभासद चोपडा | ३२) श्री. अशोक त्र्यंबकराव पाटील को-ऑप सभासद धानोरा |
| १५) श्री. चुडामण हिरामण पाटील सभासद धानोरा | ३३) श्री. जे. बी. बाविस्कर को-ऑप सभासद चोपडा |
| १६) श्री. के. डी. चौधरी सभासद चोपडा | ३४) श्री. रामचंद्र बन्सीलाल अग्रवाल को-ऑप सभासद घोडगाव |
| १७) श्री. डॉ. बी. आर. पाटील सभासद घोडगाव | ३५) सौ. शर्मिला सुधीर जैन को-ऑप सभासद वडती |
| १८) श्री. देविदास हरिचंद्र धनगर सभासद वडती | ३६) श्री. नरेंद्र नागेश्वर शिदें सभासद वर्डी |

# COLLEGE DEVELOPMENT COMMITTEE

| Sr.No | Name of the Members | Designation |
|---|---|---|
| 1. | Hon. Dadasaheb Dr. Suresh G. Patil | Founder President |
| 2. | Hon. Bhaiyasaheb Adv. Sandeep S. Patil<br>President, Mahatma Gandhi Shikshan Mandal, Chopda | President |
| 3. | Hon.Taisaheb Dr. Smita S. Patil<br>Secretary, Mahatma Gandhi Shikshan Mandal | Secretary |
| 4. | Hon. Mrs. Asha V. Patil,<br>Vice- President, Mahatma Gandhi Shikshan Mandal | Vice – President |
| 5. | Hon. Dr. Gautam P. Vadnere | Principal |
| 6. | Hon. Prof. Devidas Bandu Deshmukh | Member (Education Representative) |
| 7. | Mr. Rajaram Baburao Patil | Member (Business Representative) |
| 8. | Dr. Ramakant Mahadu Bagul | Member (Research Representative) |
| 9. | Mr.Swapnil Suresh Bari | Member (AlumniRepresentative |
| 10. | Dr. Avinash Vishvanath Patil | Member (Recommended by Principal) |
| 11. | Mr.Tushar Prataprao Patil | Member (Staff Representative) |
| 12. | Mr. Tanvir Yusuf Shaikh | Member (Staff Representative) |
| 13. | Mrs. Kranti Devendra Patil | Member (Ladies Staff Representative) |
| 14. | Dr. Sandeep Ramesh Pawar | Member (Social Welfare Officer) |
| 15. | Dr. Md. Rageeb Md. Usman | Representative of C.I.Q.A. Committee |
| 16. | Mr. Ravindra Ramchandra Deshmukh | Member (Non-Teaching Representative) |
| 17. | Ms. Mrunal S. Nhalade (Final Yr. B.Pharm) | Student council Chairperson |
| 18. | Ms. Ashwini Anil Patil (Third Yr. B. Pharm) | Secretary Student council |

# INSTITUTIONAL ANIMAL ETHICAL COMMITTEE (IAEC)

| Sr.No | Name of the Members | Designation |
|---|---|---|
| 1. | Dr. Gautam P. Vadnere | Biological Scientist Chairperson |
| 2. | Prof. Tushar P. Patil | Scientist In-charge of Animal House facility |
| 3. | Dr. Avinash V. Patil | Scientist from different discipline, Member secretary |
| 4. | Dr. Sanjay Gujarathi | Veterinarian |
| 5. | Dr. Santram Lodhi | Scientist from different discipline |
| 6. | Dr. Maheshkumar V. Ingawale | Main Nominee |
| 7. | Dr. P. H. Patil | Link Nominee |
| 8. | Mr. Prashant Y. Mali | Scientist from outside |
| 9. | Mr. Hemant V. Deore | Socially Aware Nominee |

# TRAINING AND PLACEMENT CELL

| Sr.No | Name of the Members | Designation |
|---|---|---|
| 1. | Dr. Gautam Prakash Vadnere | Chairman |
| 2. | Dr. Bharat Vijaykumar Jain | Placement Officer |
| 3. | Dr. Sandip Ramesh Pawar | Training Officer |

# INTERNAL COMPLIANCE COMMITTEE 2019-2020

| Sr.No | Name of the Members | Designation |
|---|---|---|
| 1. | Dr. Gautam P.Vadnere | Principal |
| 2. | Mrs. Kranti D. Patil | Presiding officer |
| 3. | Mrs. Suvarnalata S. Mahajan | Member |
| 4. | Mrs. Prerna N. Jadhav | Member |
| 5. | Mrs. Priyanka V.Patil | Member |
| 6. | Mr. M. N. Patil | Member (Non-Teaching staff Representative) |
| 7. | Mr. A. M. Patil | Member (Non-Teaching staff Representative) |
| 8. | Miss. Mrunal S. Nhalde | Member (Students Representative) |
| 9. | Miss. Dhanashri S. Patil | Member (Students Representative) |
| 10. | Miss. Ashwini A. Patil | Member (Students Representative) |

# WOMEN EMPOWERMENT CELL 2019-2020

| Sr.No | Name of the Members | Designation |
|---|---|---|
| 1 | Dr. Gautam P.Vadnere | Principal |
| 2 | Mrs. Kranti D. Patil | Presiding officer |
| 3 | Mrs. Suvarnalata S. Mahajan | Member |
| 4 | Mrs. Prerana N. Jadhav | Member |
| 5 | Mrs. Priyanka V. Patil | Member |
| 6 | Mr. M. N. Patil | Member (Non-Teaching staff Representative) |
| 7 | Mr. A. M. Patil | Member (Non-Teaching staff Representative) |
| 8 | Miss. Mrunal S. Nhalde | Member (Students Representative) |
| 9 | Miss. Dhanashri S. Patil | Member (Students Representative) |
| 10 | Miss. Ashwini A. Patil | Member (Students Representative) |

# LIBRARY COMMITTEE

| Sr. No | Name | Designation | Profession |
|---|---|---|---|
| 1. | Dr. Gautam P. Vadnere | Chairperson | Principal |
| 2. | Dr. AvinashV. Patil | Member Cum Head | Member |
| 3. | Dr. Jogendra C. Hundiwale | Member | Member |
| 4. | Dr. Bharat V. Jain | Member | Member |
| 5. | Dr. Kiran D. Patil | Member | Member |
| 6. | Mr. Pralhad K. kanke | Member | Member |
| 7. | Mr. Nitin Bari | Member | Librarian |

## ANTIRAGGING SQUAD FOR BOYS HOSTEL 2019-2020

| Sr. No | Name & Detail | Detail | Contact No. |
|---|---|---|---|
| 1. | Dr. Gautam Prakash Vadnere | Chairman | 9890022892 |
| 2. | Dr. AvinashV. Patil | Member | 9850990650 |
| 3. | Dr. Jogendra C. Hundiwale | Member | 9860779469 |
| 4. | Dr. Kiran D. Patil | Member | 9423949267 |
| 5. | Dr. Bharat V. Jain | Member | 9923057005 |
| 6. | Mr. Kiran D. Baviskar | Co-ordinator | 9511732774 |
| 7. | Mr. Prafulla B. More | Member | 8805592762 |
| 8. | Mr. Ravindra R. Deshmukh | Member | 9881393378 |
| 9. | Mr. V. H. Patil | Member (Hostel In-charge) | 9049497937 |

## ANTIRAGGING SQUAD FOR GIRLS HOSTEL 2019-2020

| Sr. No | Name & Detail | Detail | Contact No. |
|---|---|---|---|
| 1. | Dr. Gautam Prakash Vadnere | Chairman | 9890022892 |
| 2. | Dr. Avinash V. Patil | Member | 9850990650 |
| 3. | Dr. Jogendra C. Hundiwale | Member | 9860779469 |
| 4. | Dr. Kiran D. Patil | Member | 9423949267 |
| 5. | Dr. Bharat V. Jain | Member | 9923057005 |
| 6. | Mr. Kiran D. Baviskar | Co-Ordinator | 9511732774 |
| 7. | Mrs. Prerana N. Jadhav | Assist. Co-ordinator | 9420349129 |
| 8. | Mrs. Kranti D. Patil | Member | 9834813057 |
| 9. | Mrs. Suvarnalata S. Mahajan | Member | 7020209120 |
| 10. | Mrs. Priyanka V. Patil | Member | 7709197733 |
| 11. | Mr. Prafulla B. More | Member | 8805592762 |
| 12. | Mr. Ravindra R. Deshmukh | Member | 9881393378 |
| 13. | Mrs. Surekha Dhangar | Member | 9021725244 |

## PREVENTION OF SEXUAL HARASSMENT COMMITTEE 2019-2020

| Sr. No | Name | Designation | Post |
|---|---|---|---|
| 1. | Dr. Gautam. P. Vadnere | Principal | Principal |
| 2. | Mrs. Kranti D. Patil | Chairman | Staff representative |
| 3. | Mrs. Suvarnalata S. Mahajan | Secretary | Student welfare officer |
| 4. | Mrs. Manisha J. Chaudhari | Councillor (Chopda city) | Member |
| 5. | Dr. Avinash V. Patil | Professor | Teaching staff representative |
| 6. | Mr. Prafulla B. More | Registrar | Non-Teaching representative |
| 7. | Dr. Sandip R. Pawar | Student Welfare Officer(Member) | Secretary |
| 8. | Mrs. Priyanka V. Patil | Asst. Professor | Member |
| 9. | Mr. Kiran D. Baviskar | Asst. Professor | Member |
| 10. | Mrs. Prerana N. Jadhav | Asst. Professor | Member |
| 11. | Miss. Mrunal S. Nhalde (Final year) | Girls Representative | Member |

# ANTIRAGGING COMMITTEE 2019-2020

| Sr. No | Name & Detail | Designation | Profession | Contact Number |
|---|---|---|---|---|
| 1. | Dr. Gautam Prakash Vadnere | Chairman | Principal | 9890022892 |
| 2. | Mr. Anil Gavit | Member | Taluka Magistrate | 7057546133 |
| 3. | Mr. Vinayak Lokare | Member | Police Inspector, Chopda City | 9146026780 |
| 4. | Mr. Vijay T. Patil | Member | Media Representative | 9325262586 |
| 5. | Mr. Sunil L. Patil | Member | Media Representative | 9730765080 |
| 6. | Mr. Ganesh Patil | Member | NGO Member | 7507380210 |
| 7. | Dr. Avinash V. Patil | Member | Member | 9850990650 |
| 8. | Dr. Jogendra C. Hundiwale | Member | Staff Representative | 9860779469 |
| 9. | Dr. Kiran. D. Patil | Member | Staff Representative | 9423949267 |
| 10. | Dr. Bharat V. Jain | Member | Staff Representative | 9923057005 |
| 11. | Mr. Kiran D. Baviskar | Co-Ordinator | Staff Representative | 9511732774 |
| 12. | Mrs. Prerana N. Jadhav | Asst, Co-Ordinator | Staff Representative | 9420349129 |
| 13. | Mr. Sanjay Sawant | Member | Staff Representative | 9420715329 |
| 14. | Mr. Nandu Chaudhari | Member | Staff Representative | 9325489420 |
| 15. | Mr. Hemant Ghongade | Member | Guardian Representative | 9422573319 |
| 16. | Mr. Dagadu Namdeo Patil | Member | Guardian Representative | 7875515988 |
| 17. | Mr. Vijay K. Patil | Member | Guardian Representative | 9834895848 |
| 18. | Pushkar Patil | Member | Sr. Student Representative | 8390161836 |
| 19. | Nikhil Patil | Member | Sr. Student Representative | 7709254057 |
| 20. | Ms. Shweta Amritkar | Member | Sr. Student Representative | 9665563063 |
| 21. | Ms. Prajakta Chaudhari | Member | Sr. Student Representative | 9594175424 |
| 22. | Ms. Saloni Agrawal | Member | Jr. Student Representative | 8669100954 |

## COLLEGE AT GLANCE

# SMT. SHARADCHANDRIKA SURESH PATIL COLLEGE OF PHARMACY, CHOPDA.

### (B. Pharm, M. Pharm, Ph.D.)

Management : Mahatma Gandhi Shikshan Mandal Chopda, Dist. Jalgaon

Founder President : Late Hon'ble Dadasaheb Dr. Suresh G. Patil

President : Hon'ble Bhaiyasaheb Adv. Sandeep S. Patil

Principal : Dr. Gautam P. Vadnere

**Courses Offered**

| Course | Year of Establishment | Intake |
|---|---|---|
| B.Pharm | 1992 | 100 |
| M.Pharm (Pharmaceutics) | 2006 | 10 |
| M.Pharm (Pharmacognosy) | 2007 | 10 |
| Ph.D. | 2011 | 16 |
| Diploma Pharmacy (Proposed) | 2020 | 60 |

**Faculty Strength**

| | |
|---|---|
| Teaching Total | 30 |
| Professor | 02 |
| Associate Professor | 06 |
| Assistant Professor | 22 |
| Non-Teaching | 24 |

Society Land : 33 Acres

Laboratories : Under Graduate Program - 13

Post Graduate Program - 02

**ISO 9001 : 2008 Certified & NBA Accredited B.Pharm Course**

MAHATMA GANDHI SHIKSHAN MANDAL'S

**SMT. SHARADCHANDRIKA SURESH PATIL COLLEGE OF PHARMACY, CHOPDA.**

## LIBRARY : AT GLANCE

| **Specifications** | | | | |
|---|---|---|---|---|
| Total Built up Area in Sq. Meters | 166 Sq. Meters | | | |
| Library Timing | 08.00 am to 06.00 pm | | | |
| No. of Staff appointed for library | 04 | | | |
| No. of Permanent staff appointed for library | 01 Librarian | | | |
| Attendant and Peon | 03 | | | |
| Total seats in reading room | 40 + 40 = 80 | | | |
| Total seats in Digital Library | 10 | | | |

| **Books** | | | | |
|---|---|---|---|---|
| Total No. of Titles of Books | 1762 + 900 E Book = 2662 | | | |
| | B.Pharm 1630 | M.Pharm 75 | D.Pharm 57 | E-Book 900 |
| Total No. of Books | 17329 + 9000 = 26329 | | | |
| | B.Pharm 16618 | M.Pharm 551 | D.Pharm 690 | E-Book 9000 |
| Total Cost of books | 4811575/- | | | |
| Total No. of Texts Books | 14604 | | | |
| Total No. of Reference Books | 2725 | | | |
| Book Bank Facility | Yes | | | |
| Total No. of book for Book Bank | 672 | | | |

| **Chemical Abstracts** | |
|---|---|
| Total No. of Chemical Abstracts | 737 (From 1907-1981) |
| Volume | Vol. 1 - Vol. 96 |
| Total Cost of Chemical Abstracts | 280000/- |

| **Journals** | |
|---|---|
| No. of Journal Available | 35 |
| National | 12 + DELNET Subscription |
| International | 22 |
| E-Journal (Online) | 18 + DELNET Subscription |
| E-Books | 200 |
| Total cost of Journals | 109540/- |
| National | 63690/- |
| International | 45850/- |

| **Magazine / News Paper** | |
|---|---|
| Total No. of Magazine | 05 (Free) |
| Total cost of Magazine | – |
| Total No. of Daily News Paper | 05 |
| Marathi | 02 |
| English | 03 |
| Total cost of Daily News Paper | 480-500 / Month |

| **Digital Library (E-Labrary)** | |
|---|---|
| Internet facility Available for Students | Yes |
| No. of computers | 10 |

| **Others** | |
|---|---|
| Notice Board Available | Yes |
| Suggestion Box Available | Yes |

# INFRASTRUCTURE & FACILITIES
# (B. Pharm, M. Pharm, Ph.D.)

**Modern Laboratories:**

Laboratories are well equipped with highly sophisticated equipments.

1. Laboratory of Pharmaceutics
2. Laboratory of Pharmacology
3. Laboratory of Pharmaceutical Chemistry
4. Laboratory of Biotechnology
5. Laboratory of Pharmacognosy

**List of Equipments:**

- UV - V15 Spectrophotometer (LAB INDIA - Uv3000)
- UV - 1601 Spectrophotometer (Shimadzu 1601)
- FTIR (Nicojet Ir200)
- Fuming Hood
- Gas Chromatography (Netal Ltd. michro9100)
- Digital Conductivity meter
- PH Meters
- Polarimeter
- Digital Potentiometer
- Digital Turbidity Meter
- Karl Fischer Titrator Apparatus
- IR Moisture Balance
- Melting Point Apparatus
- Stability Chamber
- Rotary Tablet Machine
- Dissolution Apparatus (Microprocessor based)
- Disintegration Apparatus
- Aspectic Area Equipped With HEPA
- Sigma Blade Mixer
- Single pan balance
- Colorimeter
- Hot Air Oven
- Microwave Oven
- Digital Flame Photometer
- Photoflurometer
- Refractometer
- Double Cone Blender
- Rotary Sieve Shaker
- Triple Roller Mill
- Friability Test Apparatus
- Volumetric Filling Machine
- Bulk Density Apparatus
- HPLC System (Younglin acme 900)
- Brookfiled Viscometer (220 AY, Brookfiled)
- Digital Moisture Balance
- Motic Digital Microscope (Motic/B3Professional)
- Rotary Vaccum Evaporator
- (Orchid Scientifics Nashik)
- Clavenger Apparatus
- Soxhlet Apparatus
- Muffle Furnace
- Projection Microscope
- Centrifuge
- Digital Photocolorimeter (Jainco Lab Ambala Cantt)
- Physiography
- Anlagesiometer (KJ 9512)
- Histamine Chamber
- Pole Climbing Apparatus
- Rota Rod Apparatus
- Nephloturbidimetry
- Incubator
- Karl-fischer apparatus

# ALUMNI SECTION

## A Glimpse of Prominent Alumni

| Sr. | Name of Alumni | Current Designation |
|---|---|---|
| 1. | Dr. Ganesh Halade | Assistant Professor at The University of Alabama at Birmingham. |
| 2. | Dr. Sunil Pawer | Principal, College of Pharmacy, Shahada. |
| 3. | Mr. Anand Deshmukh | Plant Head, Dr. Reddy's Lab., Yanam, Pondecheri. |
| 4. | Dr. Santosh Gandhi | Asso. Professor, AISSMS, Pune. |
| 5. | Mr. Gaurav Ajmera | Director, AHPL, Indore. |
| 6. | Mr. Abhijit Motiwale | Director, McW Healthcare, Indore. |
| 7. | Ms. Vandana Marathe Patil | Asst. Professor, Yash Institute of Pharmacy, Aurnagabad. |
| 8. | Mr. Atul Ahire | Pharmacist, Six Sigma Medicare and Research Ltd. Hospital Nashik. |
| 9. | Prof. Sanjay Ladhe | Sr. Lecturer SMIT College of Pharmacy, Jalgaon. |
| 10. | Mr. Kiran Jade | Asst. Manager, Aurobiodo Pharma, Hyderabad. |
| 11. | Dr. Amrutesh Puranik | Post Doctoral Fellow, Mayo Clinic & University of Minnesota School of Medicine |
| 12. | Mr. Sudhir Chaudhari | Proprietor at INDO ASIA PHARMA CO |
| 13. | Dr. Narendra Pratap Senger | Asso. Professor SIRT college of Pharmacy, Bhopal. |
| 14. | Ms. Parul Mehta Senger | Asst. Professor SIRT college of Pharmacy, Bhopal. |
| 15. | Mr. Sudhir Patil | Sr. Area Coach and Customer Service Manager at Abbott India LTD Jalgaon |
| 16. | Dr. Shailaja Mahajan Thakur | Post Doctoral Fellowship, Germany. |
| 17. | Mr. Vaibhav Nagarkar | Asst. Manager, Nielsen Company, Mumbai. |
| 18. | Ms. Shefali Razdan Nagarkar | Asst. Manager, Indiabulls Power Ltd. Mumbai- |
| 19. | Mr. Hiten Yadav | Executive Director, Bulk Drug, Manufacturer, Vapi. |
| 20. | Prof. Yogesh Pawer | Asst. Professor, Dept. of Pharmaceutics, India College of Pharmacy, Pune |
| 21. | Mr. Chinar Pathak | Ph.D. Research Student, Seoul National University, South Korea. |
| 22. | Mr. Sheryas Dhupad | Senior QA Officer, Accord Healthcare Ltd., Hazzow, London, UK. |
| 23. | Mr. Sachin Kapadne | Senior QA Officer, Accord Healthcare Ltd., Cambridge Haverhill. |
| 24. | Mr. Suhas Chaudhari | Senior QA Officer, Accord Healthcare Ltd., Cambridge Haverhill. |
| 25. | Mr. Sudarshan Joshi | Director, Noveco Research Lab. Pvt. Ltd. Pune. |
| 26. | Mr. Kapil Sapkale | Warrant Officer (Pharmacist), Assam Rifiles, Dimapur, Nagaland. |

# OUR AFFILIATION

## The Kavayitri Bahinabai Chaudhari North Maharashtra University

The Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon (Formerly known as North Maharashtra University, Jalgaon) established on 15th August, 1990 under the Maharashtra Universities Act, XXIX of 1989, started its academic and administrative functioning from the academic year 1991-92. Within the span of 3 years, the University is recognized under section 2 (f) in 1991 and 12 (B) in 1994 under the University Grants Commission (UGC) Act, 1956. The jurisdiction of the University is extended over three districts i.e. Jalgaon, Dhule and Nandurbar, a predominantly tribal and rural area of Khandesh region. The University has opened its doors of higher education to mostly "**first generation learners**" of this area. **Access, equity and academic excellence are the thrust areas of the University's educational endeavor.** Presently, Prof. P. P. Patil is the Vice-Chancellor. The University was awarded with **FOUR STAR** grade in the year 2001, **B grade** with **2.88 CGPA** in the year 2009 and **A Grade** with **3.11 CGPA** in 3rd Cycle re-accreditation in year 2015 by National Assessment and Accreditation Council (NAAC), Bangalore.

As per the **National Institutional Ranking Framework (NIRF) - 2016** by Ministry of Human Resource Development, Government of India, **KavayitriBahinabaiChaudhari North Maharashtra University (Formerly known as North Maharashtra University) ranked 59th amongst top 100 Universities and Institutes in India**.*The academic year 2014-15 is a great milestone in the history of Kavayitri Bahinabai Chaudhari North Maharashtra University as it has completed the twenty five years voyage of higher education.*

## Pharmacy Council of India

The Pharmacy education and profession in India upto graduate level is regulated by the PCI, a statutory body governed by the provisions of the Pharmacy Act, 1948 passed by the Parliament.

- The Pharmacy Act 1948 was enacted on 4 March 1948 with the following preamble- "An Act to regulate the profession of pharmacy. Whereas it is expedient to make better provision for the, regulation of the profession and practice of pharmacy and for that purpose to constitute Pharmacy Councils".
- The PCI was constituted on 9 August 1949 under section 3 of the Pharmacy Act.

**OBJECTIVES**

- Regulation of the Pharmacy Education in the Country for the purpose of registration as a pharmacist under the Pharmacy Act.
- Regulation of Profession and Practice of Pharmacy.

**FUNCTIONS AND DUTIES**

- To prescribe minimum standard of education required for qualifying as a pharmacist. (Ref.: section 10 of the Pharmacy Act)
- Framing of Education Regulations prescribing the conditions to be fulfilled by the institutions seeking approval of the PCI for imparting education in pharmacy. (Ref.: section 10 of the Pharmacy Act)
- To ensure uniform implementation of the educational standards throughout the country. (Ref. : section 10 of the Pharmacy Act)
- Inspection of Pharmacy Institutions seeking approval under the Pharmacy Act to verify availability of the prescribed norms. (Ref.: section 16 of the Pharmacy Act)
- To approve the course of study and examination for pharmacists i.e. approval of the academic training institutions providing pharmacy courses. (Ref. : section 12 of the Pharmacy Act)
- To withdraw approval, if the approved course of study or an approved examination does not continue to be in conformity with the educational standards prescribed by the PCI. (Ref.: section 13 of the Pharmacy Act)
- To approve qualifications granted outside the territories to which the Pharmacy Act extends i.e. the approval of foreign qualification. (Ref. : section 14 of the Pharmacy Act)
- To maintain Central Register of Pharmacists. (Ref.: section 15 A of the Pharmacy Act)

# The National Board of Accreditation (NBA)

The National Board of Accreditation (NBA), India was initially established by the AICTE (All India Council of Technical Education) under section 10(u) of AICTE Act, in the year 1994, in order to assess the qualitative competence of the programs offered by educational institution from diploma level to post-graduate level in engineering and technology, management, pharmacy, architecture and related disciplines, which are approved by AICTE.

NBA came into existence as an independent autonomous body with effect from 7th January 2010 with the objectives of assurance of quality and relevance to technical education, especially of the programs in professional and technical disciplines, i.e., Engineering and Technology, Management, Architecture, Pharmacy and Hotel Management and Catering Technology, through the mechanism of accreditation of programs offered by technical institutions. The Memorandum of Association and Rules of NBA were amended in April 2013, to make it completely independent of AICTE, administratively as well as financially. The NBA conducts evaluation of programs of technical institutes on the basis of laid down norms. This may include, but not limited to institutional missions and objectives, organization and governance, infrastructure facilities, quality of teaching and learning, curriculum design and review, support services (library, laboratory, instrumentation, computer facilities, etc.) and any other aspect as decided by the General Council and / or Executive Committee of NBA, which will help the graduates produced by the institutions as per industry requirements.

Over the period of its existance, the NBA has introduced a new processes, parameters and criteria for accreditation that are in line with the best international practices and oriented to assess the outcomes of the programme

**OBJECTIVES**

Major objectives of the NBA are as follows:

- To assess and accredit the technical education programs;
- To evolve standards and parameters for assessment and accreditation in line with the parameters laid down by the appropriate statutory regulatory authority for co-ordination, determination and regulation of standards in the concerned field of technical education;
- To promote excellence through a benchmarking process, which is helpful in determining whether or not an institution is able to achieve its mission and broad based goals, and in interpreting the results of the outcomes assessment process;
- To promote quality conscious system of technical education where excellence, relevance to market needs and participation by all stakeholders are prime and major determinants.
- To build a technical education system as facilitator of human resources, that will match the national goals of growth by competence, contribution to economy through competitiveness and compatibility with societal development;
- To set the quality benchmarks targeted at global and national stockpile of human capital in all fields of technical education;
- To conduct evaluation of self-assessment of technical institutions and/or programs offered by them on the basis of guidelines, norms and standards specified by it; and
- To contribute to the domain of knowledge in quality parameters, assessment and evaluation.

# The All India Council for Technical Education (AICTE)

The All India Council for Technical Education (AICTE) is the statutory body and a national-level council for technical education, under Department of Higher Education, Ministry of Human Resource Development.[5] Established in November 1945 first as an advisory body and later on in 1987 given statutory status by an Act of Parliament, AICTE is responsible for proper planning and coordinated development of the technical education and management education system in India. The AICTE accredits postgraduate and graduate programs under specific categories at Indian institutions as per its charter.

**Objectives**

- Promotion of Quality in Technical Education.
- Planning and Coordinated Development of Technical Education System.
- Regulations and Maintenance of Norms and Standards.

## Directorate of Technical Education, Maharashtra

The Directorate of Technical Education Maharashtra [1] has more than 2000 educational institutions in the state use DTE Maharashtra exams.

The Directorate conducts entrance test including MH-CET, the state entrance test for admission in technical institute degree courses, including Diploma courses for Bachelor of Architecture and Bachelor of Hotel Management and catering technology.

**Objectives**

The Directorate is to maintain and enhance the quality of technical education by defining policies, developing government institutions, supervising private institutions, interacting with industry and national level institutions, coordinating with other state and national departments and organizations and to contribute to the development of industry society at large.

- Efficiently and effectively manage the Technical Education System, ensuring transparency and integrity.
- Develop Technical manpower to meet the needs of the economy.
- Elevate research levels in Technical Education system.

## International Organization for Standardization

- The International Organization for Standardization (ISO) is an international standard-setting body composed of representatives from various national standards organizations.
- Founded on 23 February 1947, the organization promotes worldwide proprietary, industrial, and commercial standards. It is headquartered in Geneva, Switzerland,[3] and works in 164 countries.
- **Overview**
- The International Organization for Standardization is an independent, non-governmental organization, the members of which are the standards organizations of the 164 member countries. It is the world's largest developer of voluntary international standards and it facilitates world trade by providing common standards among nations. More than twenty thousand standards have been set, covering everything from manufactured products and technology to food safety, agriculture, and healthcare.
- Use of the standards aids in the creation of products and services that are safe, reliable, and of good quality. The standards help businesses increase productivity while minimizing errors and waste. By enabling products from different markets to be directly compared, they facilitate companies in entering new markets and assist in the development of global trade on a fair basis. The standards also serve to safeguard consumers and the end-users of products and services, ensuring that certified products conform to the minimum standards set internationally

**Rohit Raj**
Second Year B.Pharm
and
**Mrs. S. S. Mahajan**

## सातपुडयातील संजीवनी : अक्कासाहेब स्वर्गीय सौ. शरच्चंद्रिका सुरेश पाटील

जन्म दिनांकः ५ नोव्हेंबर १९२८
मृत्यू दिनांकः ५ डिसेंबर १९८२
जन्मस्थळः नामपुर ता. बागलाण जि.नाशिक
वडिलांचे नावः धर्मराज जयदेवराव सावंत
आईचे नावः सौ. वासंतिकाबाई
पतीचे नावः डॉ.सुरेशजी गंभीरराव पाटील.

**✻ जीवन परिचय :** अक्कासाहेब सौ.शरच्चंद्रिका पाटील यांचा जन्म दि. ५ नोव्हेंबर १९२८ रोजी नाशिक जिल्हयातील बागलाण तालुक्यामध्ये नामपूर या गावी झाला. त्यांचे वडिल धर्मराज सावंत हे शिक्षक तर आई सौ.वासंतिकाबाई यासुध्दा ख्यातनाम शिक्षिका होत्या.

**✻ शिक्षण :** अक्कांचे संपुर्ण प्राथमिक शिक्षण हे बागलाण तालुक्यातील जन्मगाव नामपुर येथिल मराठी मुलींच्या शाळेत झाले. इ.स.१९३३ ते १९३९ ला त्यांच्या मातोश्री सौ. वासंतिकाबाई सावंत या सदर संस्थेच्या मुख्याध्यापिका होत्या. मातेच्याच हाताखाली आईच्या शाळेतच अक्कांचे प्राथमिक शिक्षण पार पडले.

१० जून १९३९ रोजी बागलाण सहाणे येथे मराठा इंग्लिश स्कुल येथे अक्कासाहेब यांची आरंभ दिवसापासूनच प्रथम विद्यार्थिनी म्हणुन ता.१०-०६-१९३९ रोजी नोंद झाली. संस्थेचे बी.पी.पाटिल सोलापूरकर, रघुनाथ जानू चव्हाण नामपुरकर (गणिततज्ञ), एन.के.पाटील, मा.पंढरीनाथ शंकरराव भालेराव यांचे शेक्षणिक मार्गदर्शन अक्कास लाभले. अक्कांचे माध्यमिक शिक्षण है ता. १० जुन १९३९ ते मार्च १९४५ अखेर सहाणा येथे पूर्ण झाले. येथेच अक्कांना स्कॉलरशिप मिळाली होती.

उच्च शिक्षणासाठी अक्कांना गुजरात मधिल बडोदा येथील सयाजीराव महाराज गायकवाड विद्यापीठातील सायन्स कॉलेजला १९४५ साली प्रवेश मिळाला. तेथील सर्व शिक्षणक्रम प्रथम श्रेणीतून पास होत १९५० साली त्या बी.एस्सी मध्ये विशेष प्राविण्य मिळवुन उत्तीर्ण झाल्या.

**✻ वैवाहिक जीवन :** अक्कासाहेबांचा विवाह दि. ५ मे १९५० रोजी गोरजमुहूर्तावर बागलाण सहाणे येथे वधुघरी साधेपणाने अंमळनेर तालुक्यातील श्री.गंभिरराव खुशालराव पाटील यांचा मुलगा डॉक्टर सुरेश गंभीरराव पाटील यांच्यासोबत झाला. डॉ. सुरेशजी यांचे शिक्षण (एम.बी.बी.एस.) अहमदाबाद येथिल मेडिकल कॉलेजमध्ये झाले. त्यांनी बडोदा येथील हॉस्पीटलमध्ये ४ वर्ष नोकरी केली व आपल्या जन्मभुमी असलेल्या खान्देशी प्रयाण केले. सातपुडयाच्या पायथ्याशी आडवळणी असलेल्या चोपडा या तालुक्याच्या ठिकाणी १४ मार्च १९५६ रोजी खाजगी दवाखाना सेवेसाठी रजू केला. सेवाभावनेने काम केले. अक्कासाहेबांनी एम.एस्सी शिक्षण विवाहानंतर पूर्ण केले.

**✻ शिक्षणमंत्री म्हणुन निवड :** सन १९६७ च्या चोपडा विधानसभा निवडणुकीत त्या पराभुत झाल्या तरी आजचे अपयश हे उदयाचे यश समजून त्या १९७२ च्या निवडणुकीत प्रचंड मताने विजयी झाल्या. १९८० मध्ये त्याच मतदार संघातून पुन्हा त्या विधानसभेवर निवडुन आल्या. चोपडा मतदार संघामध्ये त्यांनी निःस्वार्थी भावनेने सेवा केली. जिल्हयातील व चोपडा तालुक्यातील लोकांवर त्यांची निवांत श्रध्दा होती.

२४ जानेवारी १९८२ रोजी महाराष्ट्राचे भाग्य उजाडले, प्रामाणिक व गुणी अशा अक्कांना कॅबिनेट दर्जाच्या महिलामंत्री म्हणुन बहुमान मिळाला. त्यांना शिक्षण, तांत्रिक शिक्षण, क्रीडा, रोजगार प्रशिक्षण व सांस्कृतिक कार्य अशा पाच महत्त्वाच्या खात्यांची जबाबदारी दिली. ऑक्टोबर १९८२ मध्ये मंत्रिमंडळात बदल झाला. खात्यांची फेररचना झाली. कोणतेही खाते कार्यक्षमतेने चालवतील अशी, खात्री झाल्यामुळे परत त्याच खात्याची जबाबदारी मिळाली.

''जालना, औरंगाबाद'' या दोन जिल्हयांची जबाबदारी पालकमंत्री म्हणुन खरोखरच मायेच्या ममतेने, बहिंणीच्या प्रेमाने, प्रसंगी मंत्री म्हणुन कठोर निर्णयाने पार पाडली. कधीही त्यांच्याविरुद्ध वाद उद्भवला नाही. उद्भवूही दिला नाही तर उलट आज त्या जिल्हयातील मंडळी अक्कांची पुन्हा पुन्हा आवर्जुन आठवण काढतात.

**✻ सामाजिक कार्य :** चोपडा तालुक्यातील राजकीय, सामाजिक, शैक्षणिक व सहकारी क्षेत्रातील विकासाचा इतिहास हा जणु अक्कांचे आत्मचरित्रच ठरावे इतक्या अक्का या तालुक्यातील जनतेच्या तसेच सातपुडयातील गोरगरीब आदिवासी जनतेच्या जीवनाशी व त्यांच्या सुख-दुःखाशी समरुप झाल्या होत्या. गांधीजींचे सेवेची व नितिमान राजकारणाचे व त्यातुन सर्वोदय या आदर्श विचाराचे बाळकडु त्यांना त्यांचे माता-पित्यापासूनच लाभले होते व पुढे त्यांनी आपल्या वृत्तीने खऱ्या अर्थाने जीवनात उतरविले या सेवेतूनच त्यांनी सर्वांगीण विकासाच्या दृष्टिने चोपडा

तालुक्याचा उज्वल इतिहास घडविण्याचा निर्धार केला होता.
कै. अक्कांचे शिक्षण एम.एस्सी पर्यंत झाले होते. त्याचे प्रदर्शन कधीही त्यांचेकडून झाले नाही. त्यांचे पीएच.डी चे पेपर्स लिहून तयार होते. लग्न झाले व ग्रामिण भागात सेवा करण्याचा ध्येयाने चोपडयातच राहण्याचा निर्णय घेण्यात त्यांची डॉक्टरेट गमावण्याचे दुःख कधीही बोलून दाखवले नाही. वैद्यकीय सेवेद्वारा डॉक्टरांनी तर शैक्षणिक व सहकारी क्षेत्रात सौ.अक्कांनी स्वतःला झोकून घेतले.
लाडाने महाराष्ट्रातील सर्व जनता त्यांना अक्का म्हणुन संबोधत असत. अक्का आणि दादा ही चोपडा तालुक्यातील लोकांची आवडती नाव झालेली आहे.
**✻ शैक्षणिक कार्य :** शिक्षण क्षेत्रातलं अक्कांच काम नेत्रदीपक आहे. शिक्षणाविना जीवनात तरुणोपाय नाही हया जिद्दीने त्यांनी ग्रामीण भागातील तरुणामध्ये नवजागृती केली. त्यांनी चोपडा सारख्या ठिकाणी गोरगरीबांना शिक्षण मिळावे, कोणतीही मुलगी ही शिक्षणापासुन वंचित राहू नये या हेतूने बालवाडया काढल्या. महाविद्यालय स्थापन केले. आदिवासी बांधवांसाठी आश्रमशाळा चालविल्या दुर्बल घटकांसाठी सहकारी संस्थांचे जाळे विणले. महिलांसाठी शिवणकला वर्ग उघडले, त्यांच्याच कारकिर्दीत शेक्षणिक दृष्टया अतिशय महत्त्वाचे निर्णय घेण्यात आले.
अक्कासाहेबांमुळे आज चोपडा या शहराला एक वेगळी ओळख निर्माण झाली आहे. त्यांच्याच या अनमोल कार्यामुळे आज परराज्यातून (बिहार, मध्यप्रदेश) तसेच मुंबई, ठाणे, औरंगाबाद, जालना, नांदेड यासारख्या मोठया शहरातून अनेक होतकरु विद्यार्थी चोपडा येथील श्रीमती शरच्चंद्रिका सुरेश पाटील औषधनिर्माणशास्त्र महाविद्यालयामध्ये तसेच अन्य शिक्षणक्रमासाठी आलेले आहे. आज असंख्य डॉक्टर, इंजिनियर्स, फार्मासिस्ट, अधिकारी अक्कासाहेबांमुळेच चोपडा या शहरातून होत आहेत.
चोपडा सारख्या छोटयाश्या तालुक्यात त्यांनी गोरगरीबांना शिक्षण मिळावे या हेतूने महात्मा गांधी शिक्षण मंडळ, चोपडा जि.जळगाव या संस्थेची स्थापना केली. अक्कासाहेबांचे चिरंजीव श्री.ॲड.संदीपभैय्या सुरेशजी पाटील हे आज या संस्थेचे अध्यक्ष म्हणुन काम पाहत आहे. या संस्थेला सन २०२० मध्ये ५० वर्ष पुर्व साली आज या संस्थेच्या विविध कॉलेज जसे कला, वाणिज्य, शास्त्र विद्यालय, शरच्चंद्रिका सुरेश पाटील इंस्टिटयुट ऑफ टेक्नॉलॉजी तसेच श्रीमती. शरच्चंद्रिका सुरेश पाटील कॉलेज ऑफ फार्मसी चोपडा अशाप्रकारची अनेक महाविद्यालय चोपडा येथे कार्यान्वित आहे.
**✻ कौटुंबिक परिवार :** अक्कासाहेब व डॉ.सुरेशदादांना २ मुले व ३ मुली आहेत
मुले अनुक्रमे : १)शेखर २) संदीप
मुली अनुक्रमे : १) सौ. शैलजा अशोक पाटील
२) सौ. सुषमाबाई सुभाष सोनवणे
३) सौ. शुभांगी सुरेश पाटील
**✻ दुःखद निधन :** ५ डिसेंबर १९८२ वार रविवार रोजी सकाळी १०.३५ मिनीटांनी जळगाव जिल्हयातील चोपडा या राहत्या गावी अक्कांचे अवघ्या ५५ व्या वर्षीच दुःखद निधन झाले. चोपडा ही त्यांची कर्मभुमि होती. तेथील लोकांची त्यानी अविरत सेवा केली व शेवटी चोपडयातच त्यांनी अंतिम श्वास घेतला. आणि चोपडयाच्या मातीतच त्यानी चिरनिद्रा घेतली.
सेवेचे एक विशाल क्षेत्र अक्कासाहेबांच्या जीवनात खुपच उशिरा म्हणजे ५३ व्या वर्षी लाभले आणि आपल्या मंत्रीपदाच्या कारकिर्दीचे एक वर्षही त्यांनी पुरे केले नाही तोच निष्ठुर काळाने त्यांना अतिशय घाईघाईने या जगातून नेले.
जो आवडतो सर्वाला, तोचि आवडे देवाला.
याच उक्ती खऱ्या आहेत असे नाईलाजाने दुःखाने म्हणावेसे वाटते. आणि म्हणुनच कि काय देवाने अक्कांना बोलावून घेतले.
शेवटी अक्कांचा पार्थिव देह तिरंगी झेंडयात गुंडाळला गेला व भारतमातेने या खान्देश कन्येला शेवटचा राष्ट्रीय आहेर दिला व ही खान्देश कन्या अचानक काळात गडप झाली. अक्कासाहेब शरीररुपाने आज आपल्यात नाहीत, परंतू त्यांच्या राजकीय, सामाजिक व शैक्षणिक कार्यातून आपल्याला सतत प्रेरणा मिळत राहील हीच अपेक्षा...

**संकलनः**
**संदिप नानासाहेब डाके**
द्वितीय वर्ष, बी.फार्मसी
श्रीमती. शरच्चंद्रिका सुरेश पाटील
कॉलेज ऑफ फार्मसी, चोपडा

**"The achievements of an organization are the results of the combined efforts of each individual"**

Teaching Staff

Non-Teaching Staff

## "Fortune favors the prepared mind"

Second Year B. Pharm

Third Year B. Pharm

Final Year B. Pharm

# College of Glance

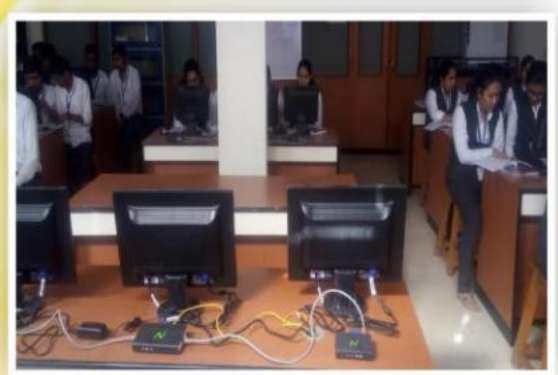
Laboratory

Botanical Garden

Botanical Garden

# College of Glance

## Laboratory



## Yoga Day (21 June 2019)

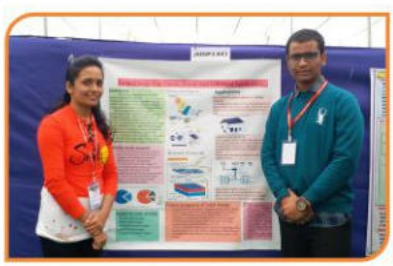
Mangala didi& Raj didi had given guidance about Rajyog on Yoga day

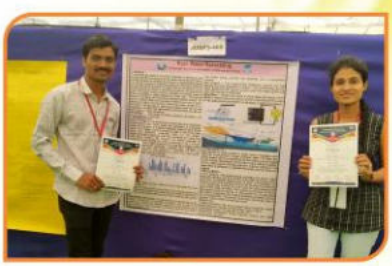
## Felicitation

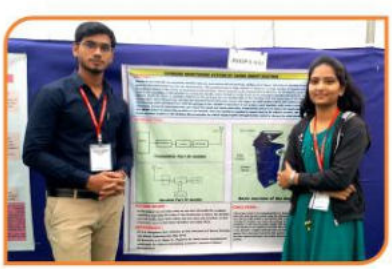
Felicitation of NIPER qualified Ms. Ashwini Chavan & Ms. Snehal Patil by hands of Registrar Mr. Prafulla B. More & Dr. J. C. Hundiwale

Felicitation of Dr. Sandip R. Pawar for receiving Ph.D. by hands of Principal Dr. G. P. Vadnere, Mr. P. B. More, Mr. R. R. Deshmukh and Mr. Anil Patil

## Interactive Activity
## Avishkar Competition







Students participated in Avishkar at Nutan Maratha College, Jalgaon

Students at MGSM's
Suvarna Mahotsav

Participated in Yuvati Sabha
at ASC, College Chopda

## FC Inauguration

Inauguration of Facilitation center by the hands of Principal Dr. G. P. Vadnere & Dr. A. V. Patil along with teaching and Non teaching staff

## NBA Visit

# Tree Plantation

Tree plantation by the hands of President Hon. Adv.Sandeep Suresh Patil, Secretary Hon. Dr. Smita Sandeep Patil, Principal Dr. G. P. Vadnere and all Teaching and Non-Teaching Staff

## Rain Water Harvesting at Our College

## Solar Energy Panel at Our College

# Seminar on "Molecular Modelling Approach, Strategy and Development" Organized by Department of Chemistry

31rd August 2019

Hon. Dr. P. P. Mahulikar, Dr. P. D. Chaudhari & Hon. Adv. Sandeep Suresh Patil lightening the lamp

Felicitation of Dr. P. P. Mahulikar by hands of Hon. Adv.Sandeep Suresh Patil

Inaugural Speech by Principal Dr.G. P.Vadnere

Dr. J. C. Hundiwale introducing the chief guest

Dr. A. V. Patil giving vote of thanks

# Botanical Tour Arranged By College (24th August 2019)

Students observed, identified & collected various medicinal plants at Unapdev, Chopda & Mr. Dashrath Patil had given information on plants.

# आनंद पर्व २०१९

## Celebration of Freshers welcome & Pharmacist Day, 25th Sept.

PADBANK
पेड लगाओ
देश बचाओ
स्वच्छ
भारत
इज्जत घर
इज्जत घर
सुका ओला
कचरा कचरा
एक कदम
स्वच्छता की
ओर
बेटी बचाओ
बेटी पढाओ
स्वच्छता अपनाओ
अपने घर को सुंदर बनाओ

## Swachh Survekshan 2019: महाराष्ट्र देशातले तिसरे स्वच्छ राज्य

स्वच्छतेच्या बाबतीत देशातले तिसरे सर्वाधिक चांगली कामगिरी करणारे राज्य होण्याचा मान महाराष्ट्राने मिळवला आहे. स्वच्छ सर्वेक्षण २०१९ अंतर्गत केलेल्या सर्वेक्षणानुसार महाराष्ट्राने हा सन्मान मिळवला आहे. या यादीत पहिला क्रमांक छत्तीसगडचा लागतो तर दुसऱ्या क्रमांकावर झारखंड आहे. स्वच्छतेच्या बाबतीत देशातले सर्वाधिक चांगली कामगिरी करणारे राज्य होण्याचा मान महाराष्ट्राने मिळवला आहे. स्वच्छ सर्वेक्षण २०१९ अंतर्गत केलेल्या सर्वेक्षणानुसार महाराष्ट्राने हा सन्मान मिळवला आहे. राष्ट्रपती रामनाथ कोविंद यांनी हे निकाल घोषित केले. हे सर्वेक्षण देशातील ४२३७ शहरांमध्ये करण्यात आलं. २८ दिवस डिजीटल पद्धतीने करण्यात आलेल्या या सर्वेक्षणाचे निकाल राष्ट्रपतींनी जाहीर केले. शहर विकास विभागाच्या प्रधान सचिव आणि महाराष्ट्रातील स्वच्छ भारत मिशनच्या संचालक मनीषा म्हैसकर यांनी राष्ट्रपतींच्या हस्ते हा पुरस्कार स्वीकारला. राज्यातल्या शहरांच्या बाबतीत कोल्हापुर स्वच्छ सर्वेक्षणात १६ व्या स्थानावर आहे. पहिल्या २० शहरांमध्ये कोल्हापूर नवी मुंबईनंतर राज्यातील दुसरे शहर ठरले आहे. नाशिक राज्यात १३ व्या तर देशात ६७ व्या क्रमांकावर आहे. नाशिकची ६३ व्या क्रमांकावरुन ६७ व्या क्रमांकावर घसरण झाली आहे. महाराष्ट्रातील २७ शहरांना कचरामुक्त शहरांसाठी थ्री स्टार दर्जा मिळाला आहे. यामध्ये वैजापुर, संगमनेर, परळी, पंढरपुर, मंगळवेढा, मलकापुर आदि शहरांचा समावेश आहे. कचरामुक्तीसाठी या शहरांना थ्री स्टार दर्जा देण्यात आला आहे. कराड शहराला स्वच्छ शहराचा पुरस्कार : स्वच्छ सर्वेक्षणातील पश्चिम विभागात एकूण १९ पुरस्कार देण्यात आले यापेकी तब्बल १३ पुरस्कार महाराष्ट्रातील शहरांना देण्यात आले आहेत. एक लाखापर्यंत लोकसंख्या असलेल्या शहरामधुन कराड, लोणावळा, अंबाजोगाई, हिंगोली, पंढरपुर, वैजापुर, संगमनेर, मलकापुर, औसा, परळी, सेलू, अकोले, गंगाखेड या शहरांना स्वच्छ शहराचा पुरस्कार मिळाला.

**पहिल्या शंभरांत राज्यातील २४ शहरे**

या अभियानात सर्वोत्कृष्ट कामगिरी केलेल्या पहिल्या १०० शहरांमध्ये राज्यातील २४ शहरे आहेत. या शहरांमध्ये नवी मुंबई(७), कोल्हापुर(१६), मीरा भाईंदर(२७), चंद्रपुर(२९), वर्धा(३४), वसई विरार(३६), पुणे(३७), लातूर(३८), सातारा(४५), पिंपरी-चिंचवड(५२), उदगीर(५३), सोलापुर(५४), बार्शि(५५), ठाणे(५७), नागपूर(५७), नांदेड वाघाळा(६०), नाशिक(६७), अमरावती(७४), जळगाव(७६), कल्याण डोंबिवली(७७), पनवेल(८६), आलपूर(८९), बीड(९४) व यवतमाळ(९६) या शहरांचा समावेश आहे.

**Jyoti Madhawani**
Final Year B. Phram

## आमचे चोपडा स्वच्छ चोपडा

चोपडा शहर हे महाराष्ट्रातील जळगाव जिल्हायातील एक मुख्य तालुका आहे. त्यात ऐकूण २२२ गाव येतात चोपडा शहर यातील एकूण लोकसंख्या २७१,८६३ आहे. आमचे चोपडा हे मुख्यत्वाने शेतीकामासाठी विकसित आहे. त्यात मुख्य उत्पादने म्हणजे ऊस, कापूस व केळी असे अनेक उत्पादने आहेत तसेच चांगल्या पद्धतीने कारखाने पण आहेत जसे साखर कारखाना आणि सुतगिरणी अनेक लघुउद्योग आहेत.

अश्या सुंदरपणे आमचे चोपडा वसलेले आहे. यात मुख्य म्हणजे स्वच्छता शब्द वाचताच मनात सौंदर्य फुलते स्वच्छतेने मन प्रसन्न राहते. या स्वच्छतारूपी सौंदर्याची आराधना करण्याची सवय अंगी बाळगण्यास शिकवण्याचे मोलाचे काम शाळा आणि उच्च शिक्षण करते.

समृद्ध भारताच्या निर्माणामध्ये पहिले महत्त्वाचे पाऊल हे, स्वच्छेते आहे. हे उद्दिष्टे घेऊन स्वच्छता ही लोकांच्या अंगी बाळगत गेली.

माननीय माजी आमदार श्री. सुरेशदादा पाटील व स्वर्गवासी श्रीमती शरदच्चंद्रिका सुरेश पाटील यांनी महाविद्यालय, लहान मुलांसाठी शाळा उभारल्या. त्यांनी चोपडा व इतर परिसरातील मुलांसाठी शिक्षणाचे भव्य दालन सुरू केले.

चोपडा महानगरपालिका व नागरीक यात मुख्य पद्धतीने कार्यरत आहे.

स्वच्छता
म्हणजे रोजच सण
नाहीतर कायमचे
आजारपण
शहर हे शरीर, त्यास राखावे पवित्र
त्यानेच नांदेल सर्वत्र आनंद
असे समजून पूर्वी गावपूर्ण व्हावे स्वच्छ, सौंदर्यवान
कोणाच्याही घरी गलिच्छपणा न दिसावा.

स्वच्छतेचा नारा हा गाजू लागला त्यात महत्वाचे म्हणजे

लोक जुळु लागले. घरा घरापर्यंत पोहचला नारा. चोपडा नगरपालिका यात मुख्य पद्धतीने कार्यरत आहे. चोपडा नगरपालिका अनेक स्वच्छतेचे उपक्रम राबवित आहे. कचरागाडी (घंटागांडी) घरोघरी प्रत्येक कॉलनीमध्ये दररोज नियमित येते. शिवाय अनेक स्वच्छता जागरूकता या बद्दलचे गाणी सुरू असतात. स्वच्छताविषयी लोकप्रिय नाटयरूपांतर दाखविले जातात. बसस्थानकाची स्वच्छता नियमित केली जाते. नगरपालिकेने सार्वजनिक ठिकाणी अनुक्रमे ओल्या व सुक्या कचऱ्यासाठी हिरवी व निळया रंगाच्या कचराकुंडया ठेवल्या आहेत त्यांची सफाई केली जाते. अनेक ठिकाणी सुचना फलक लावलेले आहेत. रोजसकाळी सफाई कामगार शहराची स्वच्छता करतात. एवढेच नाही तर स्वच्छतेच्या हेतूने पाणी जपून वापरा, झाडे लावा, झाडे जगवा, जीवन समृद्ध बनवा ही मोहीम यशस्वीरित्या चोपडा शहरात व आम्ही आमच्या महाविद्यालयात राबविली.

आमच्या महाविद्यालयातील परिसरात दरवर्शी अनेक झाडे लावण्यात आली. त्यांना पाणी टाकून ती जगविली गेली. तसेच आमचे विद्यालय व परिसर आम्ही नेहमी स्वच्छ ठेवतो.

सुंदर शहर असण्यासाठी सुंदर आणि स्वच्छ विचार बाळगायला हवे आणि हीच गोष्ट केंद्रित करून त्यावर विचार करून आम्ही आमचे चोपडा सुंदर आणि स्वच्छ चोपडा असलेच पाहिजे ही जाणीव करून घेतली आणि हेच आम्ही म्हणतो, होय हे माझे शहर

मी स्वच्छ करणारच

**शुभांगी सुर्यवंशी**
**अश्विनी पवार**
तृतीय वर्ष बी.फार्म

## स्वच्छ भारत, सुंदर भारत

स्वातंत्र्य लढयामध्ये गांधिजींनी जसे ब्रिटिशांना QUIT INDIA असे सांगितले. तसेच सर्व भारतवासीयांना CLEAN INDIA चा पण मंत्र दिला होता. ते मंतरलेले दिवस होते. गांधीजी म्हणतील ते जनता मनापासून करीत होती आणि गांधीजी स्वतः हातात, झाडु घेउन आश्रम झाडित होते. आणि त्यांच्याबरोबर मोठे नेते, गरिब, श्रीमंत आणि लहानथोर, तसेच परदेशी स्वयंसेवक सुद्धा हातात झाडु घेउन स्वच्छता करीत होते.

तसेच मंतरलेले दिवस आता आले आहेत. सर्व भारतभर एकच जयघोष चालू आहे तो म्हणजे एक कदम स्वच्छता की ओर आणि क्लीन इंडिया ग्रीन इंडिया विद्यालये, महाविद्यालये, मान्यवर व्यक्ती रेडिओ टिवी सर्वांना गाधीजींची स्वप्न पुरे करावयाचे आहे आणि त्यासाठि सर्व झटून कामाला लागले आहेत.

सन १९९१ पासुन हया गोष्टीकडे सरकारचे लक्ष गेले होते. पर्यटनाच्या दृष्टीने भारत हा देश सर्व पर्यटकांचे आवडते ठिकाण आहे. भारतासारखी विविधता निसर्ग सोंदर्य, पुरातन वस्तू हया सर्वांचे त्यांना आकर्षण आहे. पण अस्वच्छता आणि घाण कुणालाच आवडत नाही त्यांच्या टिका ऐकून आपली मान शरमेने खाली जाते हयासाठि जन मानसात उजागर झाला पाहिजे. लोकांना स्वच्छतेचे महत्त्व जाणवुन दिले पाहिजे हे ध्यानात आले मग १९९९ मध्ये निर्मल भारत अभियान याचा उदय झाला. मग २० सप्टेंबर २०१४मध्ये स्वच्छ भारतची मुहूर्तमेढ रचली गेली. आणि सुरु झाली एक भारत भर जागृती संख्यात्मक विश्लेषण केले गेले. किती गावे शौचालया विना आहेत त्याचा सर्वे केला गेला आणि एक धक्कादायक सत्य बाहेर आले वाचुन तुम्हाला धक्का बसेल पण भारतात एकंदरीत ११०४ करोड परिवार शौचालया विना आहेत २.१५ लाख सार्वजनिक शौचालयांची गरज आहे. ४४०१ गावांमध्ये शोचालय नाहीत.हयामध्ये स्त्रिया व मुलिंची खुप कुचंबणा होते. मुंबईसारख्या महानगरात यापेक्षा वाईट स्थिती आहे. पोटा पाण्यासाठि अख्या भारतातून लोक मुंबईला येतात झोपडि बांधुन राहतात. पण प्रातविधी साठी रेल्वेच्या बाजूला किंवा ट्रॅकवर बसतात. गाडीतून जाताना किती घाण वाटत असेल.

लोक पान खातात, तंबाखु खातात आणि रस्त्यावर थुंकतात भिंतीवर, जिन्यावर, जुन्या गड किल्ल्यांच्या भीतीवर थुंकतात रस्त्यावर घाण टाकतात पण त्यांना याचे काहीच वाटत नाही. कारण, त्यांना लहानपणापासुनच अशीच सवय लागलेली आहे. बहूसंख्य लोक खेडोपाडि राहतात आणि अजुनही जुन्याच सवयीने वागतात. एवढंच कशाला आपणही काय बरोबर वागतो? बागेत, देववालयात, समुद्रकिनारी, प्लास्टीकच्या बाटल्या, प्लास्टीकच्या पिशव्या, वेफर्सची पाकिटे टाकतोच ना? गाडितून जाताना रेल्वेतून, खिडकीतून, प्लास्टिक बाटल्या खाण्याच्या पदार्थाचे कागद, काहीही आपण निर्धास्तपणे टाकतो. ही घाण ट्रॅकवर साचते आणि मग पावसाचे पाणी तुंबते, उंदिर, माझा, डास हयांच्या प्रार्दुभाव होतो आणि त्यायोगे साथीचे रोग पसरतात. आपणच हया गोष्टींना निमंत्रण देतो.

मात्र आता सरकार, नेते, मान्यवर, अगदी, सामान्य, माणसेदेखील खडबडून जागे झाले आहेत आणि एक कदम स्वच्छता कि ओर म्हणत पावलांवर पाउल टाकत आहेत. हयाचाच परिपाक म्हणुन स्वच्छता अभियान नावाची मोहीम सुरु

झालेली आहे.

सर्वजण आपापला हातभार उचलित आहेत. आपण पण काहीतरी करायला हवे नं ?

आपण काय करु शकतो ?

१) सार्वजनिक ठिकाणी गेल्यावर बाटल्या, खाद्य पदार्थांची पाकिटे व इतर गोष्टी एका कागदात जमा करून कचरा कूंडित टाकावा. जर कुंडि नसेल तर घरी घेउन यावा व आपल्या कचरा कूंडीत टाकावा.

२) ओला आणि सुका कचरा असे निवडून तो कचरा नगरपालिकेच्या कचरा जमा करणाऱ्या गाडित टाकावा.

३) कोणी रस्त्यावर थुंकत असेल, घाण टाकीत असेल तर त्याला अडवावे.

मन स्वतःपासुन सुरुवात करुया, भारत स्वच्छ करुया.

**चद्रकांत जे. तायडे**
प्रथम वर्ष बी.फार्म

# SWACHH BHARAT MISSION: THE NEW FACE OF INDIA (AIR ANALYSIS)

Swachh Bharat Mission - A Union Ministry of Jal Shakti recently had organized a function of Swachh Mahotsav, 2019, at Vigyan Bhavan, New Delhi.

Various categories of awards under the name of Swachh Bharat Awards were presented, on the occasion, for outstanding contribution to Swachh Bharat Mission. The article analyses the Swachh Bharat Mission, its key achievements taking into account the SDG targets at the global level and suggests various other measures regarding and details of the Swachh Bharat Mission Awards, 2019.

**Swachh bharat mission :**

The swachh bharat mission (SBM), is a nation-wide cleanliness campaign, organized for a period of 5 years from 2014 to 2019.

Also known as a 'Swachh Bharat Abhiyaan'(SBA), it aims to achieve Swachh Bharat by 2019, as a fitting tribute to Mahatma Gandhi on his 150th Birth Anniversary.

The secretary, Department of drinking water and sanitation(DDWS), Ministry of Jalshakti the Mission Coordinator for the drive, with two sub-mission, the Swachh Bharat Mission(Gramin) and the Swachh Bharat Mission (Urban).

The on-going mass mobilization drive 'Swacchata Hi Seva' highlight cleanliness and sanitation as the real services to the nation.

**Historical Background of Swachh Bharat Abhiyan**

Central rural sanitation program(CRSP): The first nationwide sanitation program was started in india under the name of central rural sanitation program (CRSP).

Total sanitation campaign(TSC): However government of india, in order to restructure the rural sanitation programme, started a total sanitation campaign (TSC) as sanitation and cleanliness drive.

Nirmal gram puraskar : Nirmal Gram Puraskar was then launched by the government in 2003 as in incentivized sanitation scheme to boost the total sanitation campaign. It was aimed to award people for total sanitation coverage, maintaining a clean environment and making villages "Open Defecation-Free"(ODF) villages by the panchayats, blocks, and districts.

The Nirmal Bharat Abhiyan(NBA) was then started in rural india, in 2012 and basic services for the urban poor(BSUP) (under Jawaharlal Nehru National Urban Renewal Mission) was started in urban.

Swachh Bharat Abhiyan Swachh Bharat Abhiyaan was started in 2014 and 2nd of October. However, all the sanitation and cleanliness programs run by the Indian government earlier were merged into Swachh Bharat Abhiyan (Rural and Urban).

**Objectives of the Swachh Bharat Mission**

- To bring an improvement in the general quality of life in rural areas.
- To promote cleanliness, hygiene through solid and liquid waste management activities and making villages open defecation free (ODF), clean and sanitized.
- To motive communities for adopting sustainable sanitation practices and facilities through awareness and health education.
- Encouraging cost-effective and appropriate technologies for ecologically safe and sustainable community-managed sanitation.
- To promote social inclusion by improving sanitation in marginalized communities and create a significant positive impact on gender neutrality

**Key features of Swachh Bharat Mission**

**Strategy:** The key elements of the strategy for Swachh Bharat Mission include:

- Augmenting the institutional capacity of districts, focusing on intensive behavior change activities at

the grassroots level.

- Strengthening the capacities of agencies involved, to roll out the program in a time-bound manner.
- Measuring the collective outcomes of the targeted programs.
- Incentivizing the performance of state-level institutions through awards.

**Focus on behavior change:**

The main emphasis of the Swachh Bharat Mission has been placed on Behavior Change. The Behavioural Change in SBM is about nudging communities into adopting safe and sustainable sanitation practice.

Since ODF villages cannot be achieved without all the individuals and households conforming to use toilets, the major emphasis is placed on awareness generation, community action, and generation of peer pressure, etc.

**Flexibility to states:**

The focus of the Government behind the SBM is to move towards a 'Swachh Bharat' before the SDG target of 2030. As sanitation is a state subject, the central government opted for providing flexibility to state governments, to decide on their implementation policy, use of funds and mechanisms, taking into account State-specific requirements.

**Foot Soldiers of Swachh Bharat :** The Swachh Bharat Mission has been channelized at the grassroots level by a dedicated, trained and properly incentivized sanitation workface. The 'Swachhagrahis' or 'foot soldiers', earlier known as 'Swachhata Doots' are developed and engaged through an arrangement of Panchayati Raj Institutions, Co-operatives, Community Based Organisations, Self-Help Groups, Women Groups, ASHAs, Anganwadi workers, etc. who are already working in the Gram Panchayats.

**Sanitation Technologies :**

The GPs and agencies under SBM provide for an illustrative list of technology option, with cost implications to meet the user preferences and location-specific needs. Though flexibility has been provided in choosing the toilet technology considering the area's topography, soil conditions, etc., the Government has suggested for properly constructed Twin-Pit technology.

**Monitoring Mechanisms :** The Swachh Bharat Mission has been provided with robust monitoring arrangement to monitor ODF status of villages, implementation of Solid and Liquid Waste Management projects and construction and use of household toilets, school and Anganwadi toilets, Community Sanitary Complexes, etc. Various other modes like Social Audit, Community-based monitoring, and vigilance committees have been proposed to create peer pressure.

**Achievements of the Swachh Bharat Mission**

Achieving SDG targets before time: The 17 SDGs established by the UNGA, in 2015, includes an SDG 6, which calls for clean water and sanitation for all people till 2030. The Swachh Bharat Mission has helped india to achieve these targets near about 11 year before.

**Infrastructural Achievements:**

About 50 million toilets have been constructed under the Swachh Bharat Mission in rural India and nearly 8 million in the cities(another 1.4 million presently under construction). Thus an increase in the coverage has been seen from 39% to 69% now.

**Successful People Movement :**

The SBM has been proved to be a successful drive of cleanliness and as a people movements. It made people more aware and conscious about the cleanliness in their neighborhood. It allowed people to use apps like 'Swachh Bharat' and make the government employees more accountable.

**Financial achievement:**

UNICEF estimates that a household in an ODF village in rural India save Rs.50,000 every year through hygiene, sanitation, and health

Improvement in Health Indicators : it has also lead to improvement in health indicators like IMR, MMR, malnutrition, etc.

**Reduction In School Dropouts:**

A survey recently has pointed out that the construction of toilets in the school reduce the dropout of female students.

Making the Villages ODF : So far, 24 States, 2,48,000 villages have been revived from the disgrace of open defecation (declared ODF). Sanitation coverage in the last four years has gone up from 39% to over 93% today.

Major Challenge in implementing the Swachh Bharat Mission

**Distant Reality of Behavioural Change :**

Behavioural change can be still seen as a distant reality in Swachh Bharat Mission. Although sanitation coverage figures seemed to be satisfactory on paper, the actual progress as the ground level can be seen very lethargic.

**Inflated data :**

The data on the paper under SBM can be claimed as inflated. Even if the government has built free toilets without any leakage or corruption, the rate of one defecation is not decreasing. Even data for nonfunctional toilets are not counted. The Parliamentary Standing Committee has also raised question over the construction quality of toilets and asked the Government to count non-functional toilets.

**Unachieved Manual Scavenging:**

The recent news of the death of 300 laborers while opening jammed manholes shows that one of the major

targets under SBM i.e. ending manual scavenging is still unachieved.

**Funds unspent:** The Parliamentary Standing Committee has pointed out that nearly 15000 crores of allotted funds for the SBM have remained unspent. As concerned in the state of India's Environment in Figures, 2018, very less amount of money has been spent to promote the use of toilets. Centre has also been failed to utilize its budget for Swachh Bharat Mission Gramin.

**Improper Solid and Liquid Waste Management System:**

In cities, solid waste is not properly managed. Many cities faces dumped waste grounds, improper recycling methods and lack of recycling plants. The major challenge under SBM is the reworking of the underground sewage systems as many of the laborers are dying in the pit holes while cleaning the jammed manholes.

**A society with Purity and Pollution:**

The main challenge in SBM is a social awareness about the importance of cleanliness and sanitation. The Indian society, at many places, under prejudiced mindsets, connects the sanitation work with the perceptions of pollution, ritual purity, and caste. Toilets in many villages are considered polluting to the individual and the home, and historically associated with untouchability. So people rather defecate in open than having a toilet at home.

**Important Facts: Swachh Bharat Pakhwada**

Swachh Bharat Pakhwada started in April 2016, aims for bringing a fortnight of practicing swachhata, under Swachh Bharat Mission, by Engaging GOI Minisstries\Department in their jurisdictions.

The ministries observing Swachhata Samiksha. It also monitored under an online monitoring system of Swachhta Samiksha. It also uploads action plans, images, videos related to swacchta activities by each individual ministry and government departments.

The Ministries\Departments after fortnights announce their achievements through a press conference and other communication tools.

The ministry or the department are then incentivized with prizes for their Swacchta drives.

The best performing ministers are considered as Swachhta Ministries and are expected to bring qualitative Swachhata improvements in their jurisdictions for the whole next year.

**Swachh Survekshan Awards, 2019**

It is an annually launched prize incentive scheme as part of the Swachh Bharat Abhiyan with an objective of surveying cleanliness, hygiene and sanitation in cities and towns across india.

The surveys are carried out by the Quality Council of India(QCI)

**Swachh Bharat Mission Awards, 2019**

**Best Swachh Iconic Place award:**

Vaishno Devi Shrine Board in Jammu and Kashmir. The Shrine was selected on the basis of overall improvement in sanitation.

Swachh Award in Swachhta Action Plan category: Ministry of Railways.

**Swacchta Pakhwada Award:** Department of Defence.

Public sector undertaking (PSUs) contributing the Swachh Bharat Kosh: power grid corporation.

**Award from open defecation free (ODF) and behavior change:** Gujarat and Sikkim

**Ganga Gram Award:** village baghori in uttarkashi

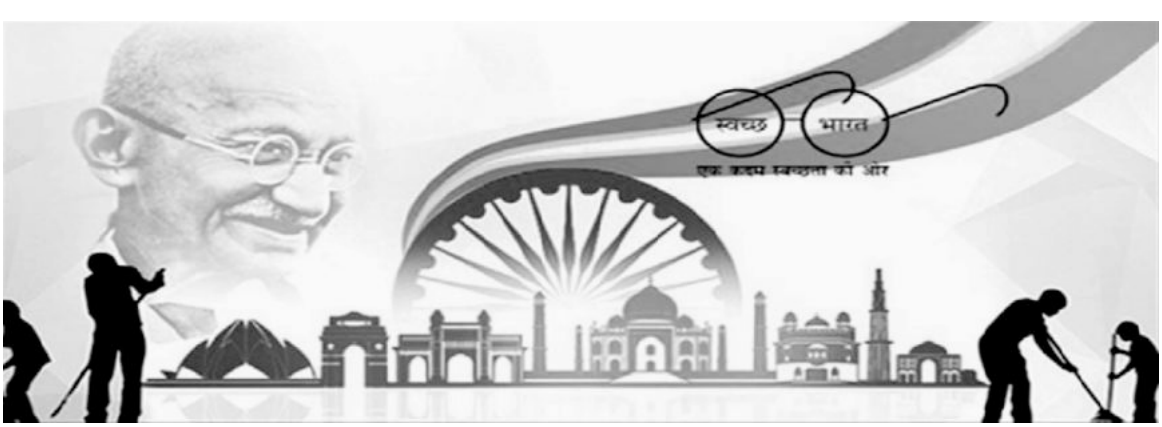
Swachh Bharat Summer Internship:

Ranjitha S for NCC (1st)

Bhartiya Shaheed Sainik School(Nainital) for NSS, and

Vision Youth Association(Anantapur in AP) for NYKS

**Shivani Patil**
Final year



# SWACHH BHARAT ABHIYAN

Swachh Bharat Abhiyan is one of the most significant and popular mission to have taken place in india. Swachh Bharat Abhiyan translates to Clean India Mission. This drive was formulated to cover all the cities and towns of india to make them clean. This campaign was administered by the India government and was introduced by the Prime Minister, Narendra Modi. It was launched on 2nd October in order to honor Mahatma Gandhi's vision of a Clean India. The cleanliness campign of Swachh Bharat Abhiyan was run on a national level and encompassed all the towns, rural and urban. It served as a great initiative in making people aware of the inmportance of cleanliness.

**Objectives of Swachh Bharat Mission**

Swachh Bharat. Abhiyan set a lot of objectives to achieve so that india could become cleaner and better. In addition, it not only appealed the sweepers and workers but all the citizens of the country. This helped in making the message reach wider. It aims to build sanitary facilities for all household. One of the most common problems in rural areas is that of open defecation. Swachh Bharat Abhiyan aims to eliminate that. Moreover, the Indian government intends to offer all the citizen with hand pumps, proper drainage system, bathing facility and more. This will promote cleanliness amongst citizens.

Similarly, they also wanted to make people aware of health and education through awareness programs. After that, a major objective was to teach citizens to dispose of waste mindfully.

**Why India Needs Swachh Bharat Abhiyan ?**

India is in dire need of a cleanliness drive like Swachh Bharat Abhiyan to eradicate dirtiness. It is important for the overall development of citizens in terms of health and well-being. As the majority of the population of india lives in rural areas, it is a big problem.

Generally, in these areas, people do not have proper toilet facilities. They go out in the fields or roads to excrete. This practice creates a lot of hygiene problems for citizens. Therefore, this Clean India mission can be of great help in enhancing the living conditions of these peoples. In other words, Swachh Bharat Abhiyan will help in proper waste managements as well. When we will dispose of waste properly and recycle waste, it will develop the country. As its main focus is one rural area, the quality of life of the rural citizens will be enhanced through it.

Most importantly, it enhances the public health through its objectives. India is one of the dirtiest countries in the world, and this mission can change the scenario. Therefore, india needs a cleanliness drive like Swachh Bharat Abhiyan to achieve this. In short, Swachh Bharat Abhiyan is a great start to make india cleaner and greener. If all the citizens could come together and participate in this drive, india will soon flourish. Moreover, when lthe hygienic conditions of india will improve, all of us will benefit equally. India will have more tourists visiting it every year and will create a happy and clean environment for the citizens.

**Finance**

Swachh Bharat Abhiyan is expected to cost over 620 billion (9.0 billion). The government provides an incentive of 12,000 (170) for each toilet constructed by a rural family. An amount of 90 billion(1.3 billion) was allocated for the mission in the 2016 Union budget of India. The World Bank provided a 1.5 billion loan and 25 million in technical assistance in 2016 for the Swachh Bharat mission to support India's universal sanitation initiation. The programme has also received funds and technical support from the World Bank, corporations as part of corporate social responsibility initiatives, and by state governments under the Sarva Shiksha Abhiyan and Rashtriya Madhyamik Shiksha Abhiyan schemes.

**Planned initiatives**

The government appointed CPWD with the responsibility to dispose of waste from Government offices. The Ministry of Railways planned to have the facility of cleaning on demand, clean bed-rolls from automatic laundries, bio-toilets , dustbins in all non-AC coaches. The Centre will use its Digital India projects in conjunction with the Swachh Bharat Abhiyan to have solar-powered dustbins, which send alerts to sanitation crew once they are full. The Swachh Bharat Swachh Vidyalaya campaign was launched by the Minister of Human Resource Development, Government of India by participating in the cleanliness drive along with the school's teachers and students.

**Other notable activities**

A Swachh Bharat Run, attended by 1,500 runners, was organized at the Rashtrapati Bhavan on 2 October 2014.

Kunwar Bai Yadav lived in a village in Dhamtari district and sold seven of her goats to raise the money to build a toilet at her house at age 106 in 2016. She was declared a mascot of the campaign and visited by Prime Minister Narendra Modi.

Inspired by the Clean India Mission, a robot named Swachh Bot was built by a maker community in Chennai to clean the wastes on Besant Nagar beach.

**Performance monitoring**

Swachh Bharat Abhiyan (SBM) Mobile app is being used by people and Government organization for achieving the goals of Swachh Bharat Mission. For this

government of india is bringing awareness to the people through advertisements. In 2017, the national sanitation coverage rose 65% from 38.7% on Oct 2, 2014 before the start of the campaign. It was 90% in August 2018.35 states\Union Territories, 699 districts and 5.99 lakh villages were declared Open Defecation Free(ODF) by 25 September 2019.

The cities and towns which have been declared ODF stood at 22 percent and the urban wards which have achieved 100 percent door-to-door solid waste collection stood at 50 percent. The number of Swachhagrahi volunteers working across urban local bodies rose to 20,000, and those working in rural India rose to more than a lakh. The number of schools with separate toilet facilities for girls from 0.4 million (37 percent) to almost one million (91 percent).

**Swachh Sarvekshan annual cleanliness survey**

Swachh Sarveksha, commissioned by Ministry of Urban Development and carried out by Quality Council of India, is an extensive sanitation survey across several hundred cities to check the progress and impact of Swachh Bharat Abhiyan and to foster a spirit of competition among the cities. The performance of each city is evaluated on six parameters:-

- Municipal solid waste, sweeping, collection and transporation
- Municipal solid waste, processing, and disposal of solid waste
- Open defecation free and toilets
- Capacity building and eLearning
- Provision of public toilets and community toilets
- Information, education and communication, and behavior change

**Success**

As per an independent survey released by Quality Council of India in August 2017, overall national rural "household access to toilet" coverage increased to 62.5% and usage of toilets to 91.3% with Haryana topping the national ranking with 99% of households in rural areas covered and usage of toilets of 100% World Health Organization (WHO) has in its report stated that at least 180,000 diarrhoeal deaths were averted in rural india since the launch of the Swachh Bharat Abhiyan.

**Smita A. Patil**
Final Year

# IMPACT OF SWACHH BHARAT ABHIYAN ON ENVIRONMENT

The need for maintaining right cleanliness, sanitation and hygiene in any community cannot be gainsaid. It is perhaps the most basic step towards keeping diseases at bay. Poor hygiene and cleanliness is one of the worst enemies of young children. The fact that diarrhea and malnutrition are two leading causes of under-5 deaths in India substantiates this. It is therefore imperative to have sanitation and hygiene intact, both at personal and community level, to improve health of masses.

However, even several decades after independence, india has failed to achieve the requisite cleanliness levels. We often see open garbage dumps, overflowing drains, and open defecation taking place at numerous places, NGOs like Save the Children already have various Water, Sanitation and Hygiene (WASH) projects running in different parts of india through which it is working to improve the hygiene and sanitation status of lakhs of children and their communities.

These NGOs run on donations from individuals supporting the cause.

To promote robust maintenance of cleanliness, the government of india rolled its flagship scheme Swachh Bharat Abhiyan on October 2, 2014. The programme covers 4041 statutory towns of the country to clean their roads, streets and other public infrastructure. On the day of the launch, Prime Minister Narendra Modi himself wielded broom and cleaned a public road. The Swachh Bharat campaign has been dubbed as the country's biggest cleanliness drive ever. The President of India, Mr. Pranab Mukherjee also requested every citizen to participate in the campaign and spend a minimum of 100 hours in this drive annually. This campaign also garnered full support by the Indian Army, Indian Air Force, Border Security Force, media house and various civil society organization.

A whopping 3 million Indian students and government employees took part in this event. With PM Narendra Modi being at the helm, the programme got a great kick-off and he was required to nominate 9 well-known personalities for the campaing. Lthe personalities further nominated 9 more people. Which formed a chain of people participating in the campaign. Since then it has been actively carried forward through the participation of many influential famous people from all walks of life.

**Objectives of Swachh Bharat Abhiyan**

- Construction of community, cluster and individual

toilets.

- To eliminate or lessen open defecation in rural areas. Open defecation among one of the prime reasons of behind the deaths of under 5 children every year.
- Public awareness programmes to be provided to people in order to tell them about the drawbacks of defecating in open and to promote the use of latrines.
- Recruitment of a staunch ground staff to bring about a big behavioural change in people and promote the use of latrines at a micro-level.
- Proper management of liquid and solid waste in villages in order to keep them clean and disease-free.
- To setup a network of water pipelines in rural areas, ensuring a regular water supply to people by the year 2019.
- To construct toilets separately for girls and boys in all Indian schools.
- To provide the toilet facility to all Aanganwadis
- Construction of community, cluster and individual toilets.
- To eliminate or lessen open defecation in rural areas. Open defecation among one of the prime reasons of behind the deaths of under 5 children every year.
- Apart from the construction of latrines, the Swachh Bharat campaign also look to establish an accountable and well-planned mechanism of monitoring their use.

Apart from cleanliness and disease-prevention, the Swachh Bharat campaign will also lead to notable economic development for the country. Tourism generates approximately 6.5% of India's total GDP and over 40 million Indian citizens derive their income from this sectors. The biggest problems faced by the Indian government while promoting tourism in the country is cleanliness. Swachh Bharat campaign will help in fostering employment trough tourism which will in turn boost India's GDP. And will have penetrating and far-reaching impact by improving the economic status and overall well-being of more and more people, including children. The government has been influenced by Singapore's ideas of undergoing a cleanliness drive in 1970's. it transformed the country into an FDI magnet and this led to a steep surge in its economic growth.

According to a study by WHO, lack of cleanliness leads to an annual loss of over Rs.6500 every year to each Indian. Unhygienic surroundings are the prime reason behind several diseases that are prevalent in the country. The campaign aims to plug this less so to ease the pressure on the current healthcare facilities.

On an individual level, it is imperative that we support this campaign by the government and maintaining clean surroundings. One can also donate to a charity working for this cause.

Remember, donation and tax benefits go hand-in-hand. Cleanliness will go a long way in keeping a check on the spread of diseases like diarrhea among children.

As part of our landmark 'Every Last Child' campaign, we are working relentlessly to improve the lives of two million of India's most excluded and vulnerable children, including 500,000 children currently living on the streets. Be a part of this movement.

**Snehal Pawar**
Final Year B.Phram

## सुविचार

स्वच्छता देशभक्ति के समान है । ईश्वर का आशीर्वाद पाने के लिए मन की पवित्रता के साथ-साथ शरीर की स्वच्छता भी अनिर्वाय है । एक स्वच्छ शरीर अस्वच्छ शहर मे वास नही कर सकता ।

**– महात्मा गांधी**

किसी परिवार के सदस्य खुद के घर को तो साफ रखते हैं लेकिन पडोसी के घर के बारे में उनकी कोई रूचि नहीं होती ।

**– महात्मा गांधी**

हर आदमी को अपनी साफ-सफाई खुद करनी चाहिए ।

जब तक आप अपने हाथों में झाडू और बाल्टी नहीं लेगे तब तक आप अपने कस्बो और शहरो को साफ नही कर सकते है ।

स्वच्छ भारत अभियान को देशभक्ति की भावना से जोडकर देखना चाहिए । महात्मा गांधी ने कमी स्वच्छता से समझौता नही किया । उन्होन हमे आजादी दिलाई । हमें स्वच्छ भारत के उनके सपने को साकार करना चाहिए

**– प्रधानमंत्री नरेंद्र मोदी**

## ADVANCED VERSION OF SWACHH BHARAT MISSION EXPECTED SOON

The advanced version of Swachh Bharat Mission would focus on managing sewage faecal matter, solid waste management and other basic issues that create huge environmental implications.

New Delhi : On August 15, 2014, when Prime Minister Narendra Modi announced Swachh Bharat Mission, the aim was to bring alive Mahatma Gandhi's dream of a clean india. On his 150th birth anniversary, the authorities intend to take another step closer to that dream by declaring the country open defecation free.

The advanced version of Swachh Bharat Mission is already in pipeline, which would focus on managing sewage faecal matter, solid waste management and other basic that create huge environmental implication.

Though the date for the announcement for the campaign has not been fixed yet, the government officials overseeing the policy-making of the campaign claimed that the Swachh Bharat Mission 2.0 or Open Defecation Free(ODF)- plus scheme would announce "very soon".

The campaign has been in the pipeline and lthe authorities have been coordinating with UNICEF for the same for over 12 months.

Sources in government say that it has been planning to knock at every door in the country with… the campaign and would also invest heavily on the behavioral change.

"We would be taking the campaign to every door in the country and will make sure that people manage their solid waste right at the source point that is their residences, " a senior official told IANS.

"Like Swachh Bharat Mission, this campaign would also focus heavily on changing people's attitude towards the waste management in cities and on sewage faecal management in the rural parts of the country," the official added.

In an exclusive interview to IANS, the UNICEF India, Sanitation(WASH) chief, Nicolas Osbert also confirmed that the government and the global body are working on the project since last 12 months and that it would be an advanced version of the Swachh Bharat Mission..

"In UNICEF, have been working with government on what comes next after the Swachh Bharat Mission. It's been over 12 months that both of the us have been working on Open Defecation Free plus, that targets the sewage faecal waste management and solid management as prime issues," osbert said.

Under the Swachh Bharat Mission, launched on October 2,2014 after Modi's announcement in his maiden Independence Day speech, over 10 crore toilets have been built in the country.

**Jaya D. Patil**
Final year

## SLOGAN ON SWACHH BHARAT

1. "Ek kadam swachhata ki ore."
2. "cleanliness is next go godliness."
3. "India can do it. People of india can do it."
4. "let's make the right choice and use dustbin."
5. "clean India beautiful India."
6. "Dharti mata kare pukar, aas passs ka karo sudhaar."
7. "clean city, clean city, My dream city."
8. "it's our Planet don't throw it away."
9. "devote the 100 hours every year towards the cause of cleanliness."
10. "Cleaning up the country cannot be the sole responsibility of sweepers. Do citizens have no role in this ? We have to change this mindset."
11. "sanitation should not be seen as a political tool, but should only be connected to patriotism and commitment to public health."
12. "Clean India Developed India."
13. "Comel and Pledge to keep India clean."
14. "Clean India to get economically developed India."
15. "Clean India disease-free India."
16. "Effort your best to clean India!"
17. "Cleanliness is the only solution to stay away from diseases."
18. "Represent yourself with clean India."
19. "Be clean and keep India clean."
20. "Our country is our Identity; so, keep Identity clean."
21. "If India will be Clean, it will go green."
22. "Keep India clean to let it always green."
23. "Be keen to be clean."
24. "If unity in diversity, then:why not! Cleanliness in India even after diversity."

25. "Support green India for environmentally clean India!"
26. "Pledge for cleanliness to show your keenness to clean India!"
27. "come on! Indians its time to welcome clean India"
28. "you must be clean to bring cleanliness in India."
29. "Go green to get India clean."
30. "do not fight it's our duty to maintain India's beauty."
31. "don't waste time; follow your duty to maintain India's Beauty."
32. "Though it is a difficult task, it can be achieved and for that people will have to change their habits."
33. "If we make it a public movement, we can make our country being counted as one among the cleanest nations."

**Harashali R. Sonagire**
Final year

## SWACHH BHARAT ABHIYAN

Swachh Bharat Abhiyan is a Swachh Bharat mission led by the government of india to make india a clean india. This campaign was launched officially by the government of india on 145th birthday anniversary of the great person, mahatma Gandhi on 2nd of October, 2014. It was launched at the Rajght, new Delhi (cremation of Mahatma gandhi). The government of india has aimed to make india a clean india by 2nd of October 2019 (means 150th birth anniversary of the Mahatma Gandhi) through this campaign.

It is a politics free campaign and inspired by the patriotism. It is launched as a responsibility of the each and every india citizen to make this country a Swachh country. This campaign has initiated people globally towards the cleanliness. Teachers and students of the school are joining this "Clean india Campaign" very actively with great fervour and joy. Under this campaign, another cleanliness initiative has been started by the UP CM, yogi adityanath in March 2017. He has banned chewing paan, gutka and other tobacco products in the government offices all over UP.

The survey is carried out by the Quality Council of India, which in 2017 had deployed 421 assessors for on the spot assessment of 17500 locations in 500 cities and towns, of which 434 participated. Another 55 people regularly monitored the survey process in real time.
The criteria and weightages for different components of sanitation related aspects used for the survey were :
a) Municipal documentation (solid waste managements including door-to-door collection, processing, and disposal, and open defecation free status. These carried 45 per cent of the total 2000 marks).
b) Citizen feedback – 30 per cent (450+150 marks)
c) Independent observation – 25 per cent (500 marks)

**Payal R. Bhosale**
F.Y.B.Pharm

## सुविचार

महिलाओं ने दिखाया है कि नारी शक्ति
स्वच्छ भारत अभियान की एक ऐसी शक्ति
है, जो सामान्य जीवन मे स्वच्छता के
अभियान को स्वच्छता के संस्कार को प्रभावी
ढंग से जन–सामान्य के स्वभाव मे बदलाव
लाकर रहेगी ।

**– प्रधानमंत्री नरेंद्र मोदी**

अपने हाथ साफ रखो भगवान को साफ
हाथ पसंद है और इसमे कोई आश्चर्य
नही की स्वच्छता देवत्व के समान है ।

**– इजराइलमोर अईवोर**

भगवान स्वच्छता से प्यार करता है ।
पर्यावरण को जरूर साफ रखा जाना चाहिए ।

**– लैला गिफ्ती अंकिता**

# SWACHH BHARAT AABHIYAN

Swachh Bharat Abhiyan or clean India Mission was a nation-wide campaign in India for the period 2014 to 2019 that aims to clean up the streets, roads and infrastructure of india's cities, towns, Urban and rural areas. The campaign's official name is in hindi and translates to "clean india mission" in English.

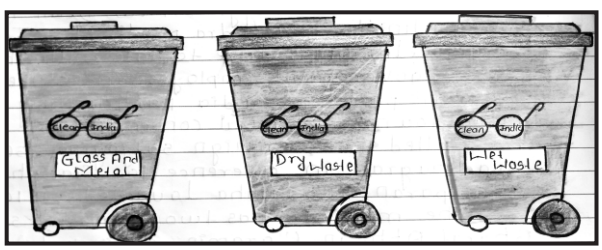
The campaign was officially launched on 2 October 2014 at Rajghat, New Delhi by Prime Minister Narendra Modi. It is India's largest cleanliness drive to date with three million government employees and students from all parts of India participating in 4043 cities, towns, and rural communities Modi has called the campaign satyagrah se swachhagrah in reference to Gandhi's champaran satyagraha launched on 10 April 1916.

The mission has two thrusts swachh bharat abhiyan ("gramin"or"rural") Which operates under the Ministry of Drinking water and sanitation and swachh bharat ahiyan ('urban') which operates under the ministry of Housing and urban affairs.

Prime Minister Modi urged people to realise their duty as responsible citizens toward keeping their country clean and not litter on the streets.

A multi-step campaign—the clean India mission or swachh bharat abhiyan has successfully garnered the support of many famous personalities like Anil Ambani, Priyanka Chopra, Sachin Tendulkar and many others to clean public places and set an example for their followers to shed their callous attitude and inculcate the zeal to keep their cities and nation clean.

"Swachh Bharat Abhiyan" Is the campaign started by the government of India for making India a clean and




green country. As a citizen of india be a part of it in making of clean india Do not throw any garbage on the roads and keep your surrounding clean.

"BE THE CHANGE THAT YOU WANT TO SEE IN THE WORLD"- Mahatma Gandhi

**Tejal Ganesh Agrawal**
**Gayatri Suryakant Jadhav**
First Year B.Phram

# SWACHH BHARAT ABHIYAN

As Mahatma Gandhi quoted 'Sanitation is more important than Independence', 'Swachh Bharat Abhiyan' or 'Clean India Mission' is a campaign that aims at cleaning up roads, infrastructure, street's, rural area, smaller town and cities of the country. The primary motive of 'Clean India Mission' is to uproot the open defecation by constructing community owned and household owned toilets. It also aims at building a mechanism that can monitor toilet use.

This mission run by the Government of India aims at achieving open Defecation free India by constructing go million toilet in rural area of the country by 150th birthday anniversary of Mahatma Gandhi (2nd October 2019). India will also reach sustainable Development Goal Number 6 (SDG 6) by achieving this mission.

Prime minister Narendra Modi officially launched this campaign on 2nd October 2014. This mission has become India's largest drive till with more than 3 million colleges student's government, employee's, and school students from every nook and corner of country participating in the campaign in cities rural areas and town, In reference to Gandhi's champaran satyagraha', this campaign has been called as 'Satyagraha se swachagrah's' by prime minister.

The motive of clean India and green India is that if we attempt and try to keep India clean, then automatically, that would help India to be green. A green environment is a result of the cleanliness which we should help India in doing so. The main aim of the clean India Green India is to stop the unlimited cutting of the trees and to decrease the production of pollution. The mission is about planting more and more tress to brings the greenery and fresh environment back.

It was one of the initiatives of Indian government under the minister Arun Jaitly that the mission of clean India and Green India saw its emergence. On 2nd October the calendar with the theme of clean India and Green India was launched by the minister Arun Jaitly. The mission of clean and Green India was launched among the other two initiatives of the Government which is Swachh Bharat Abhiyan and Digital India. In the calendar, the photography of our prime minister Narendra Modi who is standing with a broon in his hand to clean.

The combination of clean India and Green India makes the ideal and developing significance of India.

The mission is also helps in decreasing Global warming. After the inauguration of this mission, there have been immense steps taken by the government and people of India to make India clean and green.

**Pawar Snehal Pravin**
Final Year, B. Pharm

## WHY IS INDIA STILL NOT A SWACHH BHARAT?

Basically, there are two types of problems that need to be solved for a Clean India, or the Swachh Bharat. Open defecation and littering on roads / public places. Recently, In February 2018, the Government informed the Lok Sabha that 11 states and union territories (UTs) have been declared open defecation free (ODF) under Swachh Bharat Mission (SBM). Likewise, in January 2018, the Government said over 6 crore toilets have been built across rural India under the Swachh Bharat Mission; it was reported that two surveys by the Quality Council of India and National Sample Survey Organisation had pegged the usage of these toilets at 91% and 95% respectively. Thus, things have started changing on this front. We want a clean country, but expect the Government to do the needful, while ourselves continuing to tarnish every nook and corner in our surroundings with sundry kinds of trash, shiny wrappers, dark red guthka spits, pungy-smelling rotten unused food, hazardous metal and toxic chemical wastes, and also the poop and pee of our own and our pets and whatever other bull shit we generate. Is there a problem with that mindset of the majority Indians? The real problem is how we solve the issue then. First we need to ensure robust and quality education to all while limiting our garbage and wastes from further choking our society. We must go for radical R&D spending, continued but selective waste management efforts and all that. And, then when we will have a majority literate and enlightened citizenry, only then can that Swachh Bharat dream can have a hope to come alive. PES:I There are three important layers for it to get successful 1. The government, either a state or center-- It is duty of the govt to make policy/law and implement it in the most efficient way. The swatch Bharat initiative is not only a step closure to cleanliness but also a basic need. The government has to make sure the other below 2 role agents perform their duty honestly. (Solutions to loopholes have to find out by conducting proper studies with the help of Subject Matter Expert, without the proper study of the matter will not help the moto). 2. The second role agent is the administrative level, it involves all the govt employees of the concerning department. As an intermediary between the two, its job would get a bit tough amd important too. Its task would involve Awareness campaign, daily/weekly/monthly inspection of cleanliness. Many govt employee thinks that they are here to make only money one way or the other and also thinks that govt jobs means "AARAM KI ZINDAGI", this ill thought should be removed, these are the servents of people. They are policy implementor. 3. We the people should be well aware of the policies of the govt and for public welfare schemes, servises, and basic necessities should make the administration and govt accountable. But it doesn't mean that we do not follow the rules. Rules and policies are made for the society. So in the case of swatch bharat, we must ensure to maintain cleanliness around our surroundings. In our country, people think that Netas are Superior, they are "Mai Baap", they are above public but this is not the case. People vote for their Representative, they handover the power to one person, so its a contract between the people and a chosen one, he cannot and must not at any case be above the law and people. So this explains the Govt (at center and state) is a service provider for the citizens of this country. They should be held accountable at every step.

All the three role agents together can perform a duty within Constitution, which ultimately can make the Swatch Bharat a successful campaign. I know these all sounds so easy, but its not. This would need a "Political", "Society level" and "Administrative" Reforms.

**Ms. Prerara N. Jadhav**

# Poem

## SWACCH BHARAT ABHIYAN

India is our country, keeping in cleans our duty, we should make it best, may it be east or west, This was Gandhi dream, lets it be our's too,

So come on join in friends, lets make our india best, "swach bharat sunder bharat"

Remember it always make Gandhi's dream come true, by making it yours too.

**Ujwal Patil**
Second year B. Phram

## Swachh Bharat
## Mahatma Gandhi Paid

**"Sanitation Is more important that independence "**

He made Cleanliness & Sanitation an integral part of the gandhian way of living his dream was total sanitation for all.

The concept of Swachh Bharat is to pave access for every person to :-

a) Sanitation facilities including toilets, solid & liguid waste Disposal System, Village Cleanliness.

b) Safe & adeguate drinking water supply

We have to achieve this by 2019 as a befitting tribute to father of the lation Mahatma Gandhi on his 150th birth anniversary.

## Helping Hand

Keep keep keep
The homes clean
Keep keep keep
The washrooms clean
Keep keep keep
The classrooms clean
Keep keep keep
What?
Why not India
Oh no
Why do we need to tell
Everytime
Is't india ur home
What about ur home
What? You will keep it clean.
But who will keep India Clean
Every person of World
Country
State
City
Should keep the environment clean
What do you think about the gloab
Oho the global warming
Do you know why the polar
Bears are extending
Just because of
Global warming
So clean india green India

**Amol B. Baviskar**
S.Y.B.Pharm

## SAVE OUR EARTH

Have you ever taken the time
To see what was around you?
Taken the opportunity
To gaze at every little detail of your surroundings?
Or have you closed your eyes stubbornly
Because you prefer to be blind?
In the truth
You don't want to admit that our precious earth
Is falling apart
It's beautiful skirts of grass
Is dying
It's garden of stunning plants
Is running out of air
And us,
Us, the ones who made it this way
Will one day perish into a dark hole
In a way,
We are all selfish murderers
Killing the soil we walk upon
With our trash & disgrace, our ungratefulness slowly
Slowly it shall fade
Slowly we shall perish
Save the earth
Save our hearts & souls
Or forever be lost
In a pit of death & regrets
Save our home
Save our air
Save our lives
Save our earth !!

**Sakshi V. Lad**
S.Y.B.Pharm

## WHO ARE WE

Talking, Smiling and sharing
Drugging the other as the blessings.
Filing's One heart with hope
Without risking of any guessing
Working our way up the better stair
Grabbing info the cause,
Providing every detailed tiny care,
Like analgesics for pain,
CNS Stimwants for brain,
Everything's we've ever learnt
Doesn't goes in the Vain
Wearing the white coates with Smiles,
Paying attention & aiding the perfection,
Making our ways to cure and heal
We are pharmacist by profession…….

**Samruddhi Saner**
First Year B. Phram

## Green Sakthi Green Sakthi

Green Sakthi Green Sakthi
pick up pick up pick up
Green Sakthi Green Sakthi
Clean Inida
Pick up garbage
We want a clean India
Recycle, Plastic, Paper and trash
pick up bottles
We want clean India
We want a beautiful country
Green Sakthi Green Sakthi
Clean India
pick up papers
We Want a clean India
Respect nature
Land, sea and sky
All over the country
We want a clean India
One to be proud of
one that shines
Green Sakthi Green Sakthi
pick up pick up pick up
Green Sakthi Green Sakthi
Clean India

**Yukta S. Choudhari**
**Second Year B. Pharm**

## ENVIRONMENT

The environment with its treasures
All so countless to measure
Fish and whales in deep blue water
life in the sea, so alive

Grasslands and forests with terrestrial life
cold, Freezing mountain peaks
And hot, tiring deserts
life among the tree and sand, so alive

Sky so blue with air so clean
only sun, moon and starts to see
Eagles and vultures take their turn
life in sky, so alive

**Yukta S. Choudhari**
**Second Year B. Pharm**

## सुविचार

शब्दों के बीच की हवा को ताजा रखना
शाब्दिक स्वच्छता का रहस्य है ।
**–डेजन स्ओजनोविक**

स्वच्छता की शुरूवात मन, विचार और
हृदय की पवित्रता के साथ होती है ।
**– विश्वास छवन**

मेरा मानना है कि शौचालय मंदिरो से
ज्यादा महत्वपूर्ण है ।
**– जयराम रमेश**

**गणेश व्यास**
द्वितीय वर्ष बी.फार्म

## पेड

मे एक बुढा पेड हुं
मुजमे अब नही पनपती खुशबु ए
थोडिसि हरियाली
जो मुजमे शेष है
उसे
सौपना चाहता हू मै तूमको
ऐ मेरे वतन मे उगने वाले नए पौंधो
हमारा समाज
दुषित हो रहा है
खडे हो  जाओ अब तुम भी
फेलाओ अपनी सुगंध
सौंप दो अपनी  फल
जब तक हो तुम तरुण
यही तुम्हारा ध्येय है
इस वतन मे  पेदा होने का!

**दिपेश दिलीप पालीवाल**
चतुर्थ वर्ष बी.फार्म

## जल ही जीवन है ..

भारत मे तो प्यासे को पानी देना भी
पुण्य का काम मानते हैं
तो  फिर पानी बहा कर पाप करते भी
क्यों नही हाथ कापते है?
दुनिया मे लोग हैं कई
जिन्हे पानी भी नसीब नहीं
और जहां पानी का स्त्रोत हे कई
वहां किसी को पाने की परवाह ही नही.

अगर कोई खुनी की मदत कर देती
उसे भी अपराधी मानते है
अब जहां पानी से लोग मर रहे हैं
वहा बेमतलब पानी बहाने वालो को
क्यों नही अपराधी मानते है??

कहते हैं जल ही जीवन है
तो फिर जीवन व्यर्थ क्यो करते हो
अगर पानी की कीमत जानते हो
तो फिर नल को खुला ही क्यो छोडते हो ??

**स्वाती अरुण महाजन**
प्रथम वर्ष बी.फार्म

## शहर गली मे चर्चा है, स्वच्छ भारत अभियान की

शहर गली मे चर्चा है,
स्वच्छ भारत अभियान की,
आओ बच्चो तुम्हे बताए,
महता कचरा दान की
बिना प्रबंधन कुडे-कचरा दान की,
फैलाए जो जड बिमारी की,
उचित प्रबंधन कुडे का खाद बनाता
करता सहाय्यता किसान कि,
शहर-गली मे चर्चा है
स्वच्छ भारत अभियान की
कपडे  के थेली का उपयोग आवश्यक है,
जल्द ही मिटाना होगा जड पॉलीथीन की
लहर चल रही हे सभि ओर अब
मोदी के अभियान की,
शहर-गली मे चर्चा है,
स्वच्छ भारत अभियान की
शौचालय का लाभ समझना
जरुरत है हर इंसान की,
अपने कंधो पर निर्भर हे,
सफलता इस अभियान की
शहर गली मे चर्चा है,
स्वच्छ भारत अभियान की

**वैष्णवी हेमचंद्र चौधरी**
प्रथम वर्ष बी.फार्म

## स्वच्छता पर नारे

१. स्वच्छता को अपनना है,
गंदगी को दुर भगाना है ।
२. जन-जग की है यही पुकार
रोज साफ करे हम,
अपना घर-द्वार ।
३. अब हमने
यह ठाना है ।
भारत को
स्वच्छता बनाना है ।

**युक्ता चौधरी**
द्वितीय वर्ष बी.फार्म

## स्वच्छ भारत अभियान पर

हम अंग्वल काटके ऋषियो के
चरणो मे अर्पित करते है
बचपन तक अपना अक्सर शौर्य
को समर्पित करते है
सिकंदर की समशीर झुकदि
भारत के पौलाद ने
शासन को नाकाम कर दिया
एक वीर आझाद ने
खेल जगद को हिला दिया है
कोली, सायना नाम ने
इतिहास बदलके दिखा दिया है
अपने चाचा कलाम ने
और दस्तखत है इस मिटटी कि
जब उचे आसमान पर
ये गंदगी का धब्बा कैसा
मेरे हिंदुस्तान पर
यु तो हमको कविता मे
वीरो की तलवार दिखानी है
सरहद्द पर सेना की हुक्कांर
दिखानी है
देश के हर दूश्मन को
ललकार भगाना है
आतंकीयोका भार भि हर
बार भगाना है
पर ये कविता लिख रहि हु
मंजिल मेरी नेक है
देश के सब दुश्मनो मे
अस्वच्छता भी एक है
इतिहासो मे जो हुआ नही हे
इस बरस इस बार हो
मानसिंग सा तना है सिना
प्रताप का भाला पार हो
अस्वच्छता बनी है
रावण का अवतार हो
स्वयं रहेंगे साफ हमेशा
इस नारे का यैलान करे
और सचमूच सारे जहा से अच्छा
अपना हिंदुस्तान करे

**शुभांगी विजय चव्हाण**
द्वितीय वर्ष बी.फार्म

## स्वच्छता अभियान

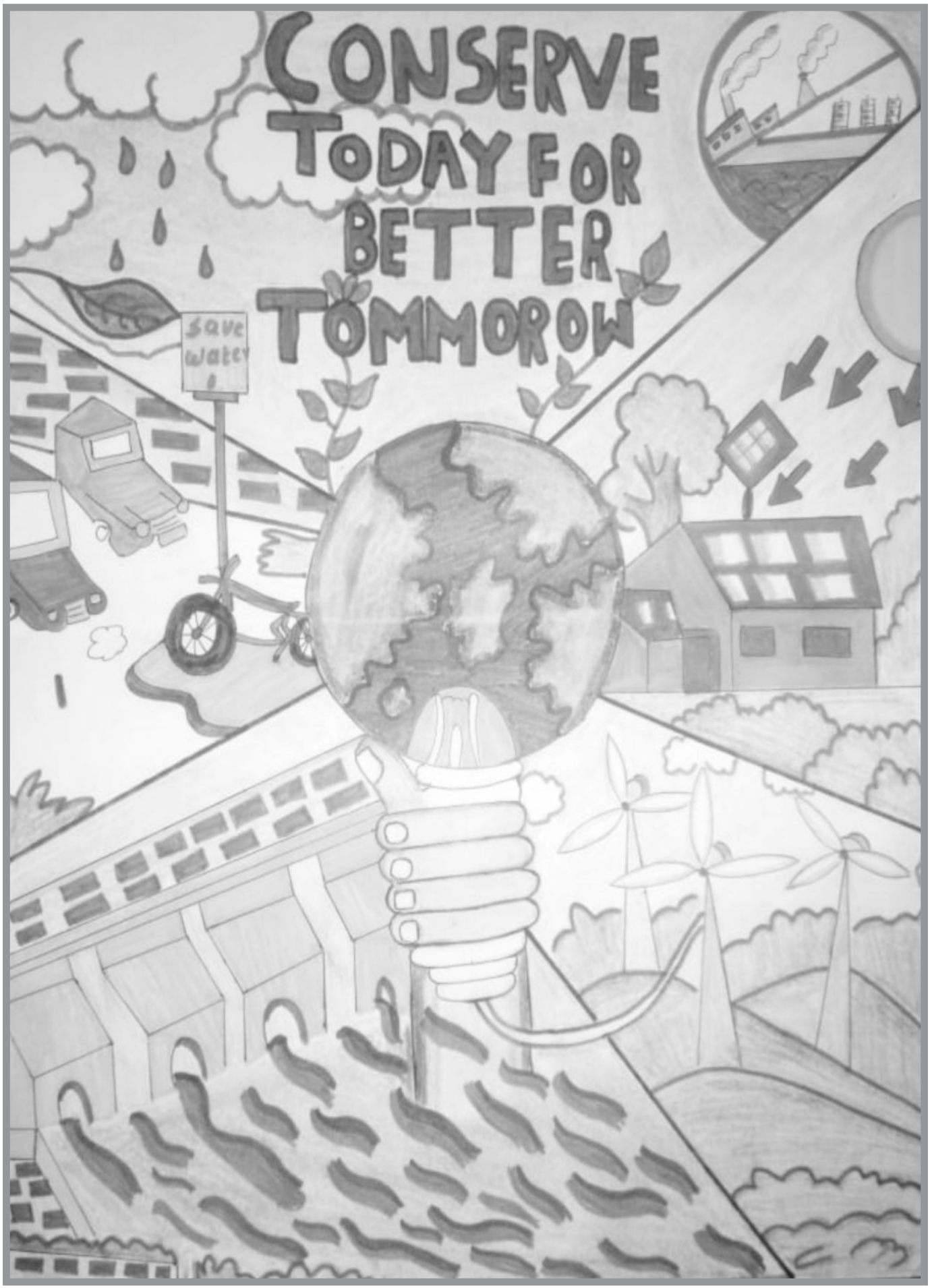
स्वच्छ रहे ये देश हमारा
लगे जहाँ मे सबसे न्यारा
मिल जुलकर हम करे सफाई
इसी में सबकी है भलाई
कुक्ष कचरा ना सडक पे डालो
बीमारी को तुम ना पालो
मिलकर हम सब पेड लगाये
पर्यावरण को हरा भरा बनाये
जगमग जगमग सडके चमके
देश हमारा दुनिया से दमके
आओ मिलकर हम कसम ये खाये
स्वच्छता को सब अपनाये
सब मिलकर ये करो इरादा
स्वच्छ रहे ये देश हमारा

**युक्ता चौधरी**
द्वितीय वर्ष बी.फार्म

## स्वच्छ भारत

किशोरो ने ठाना है भारत को
स्वच्छ बनाना है
आओ सब चले साथ मिल साथियो
एक स्वर्णिम इतिहास रचने की ओर
अब ना रुकना हे ना थकना है
जो सोचा है अब वो हर हाल मे करना है
ईस देश का नया इतिहास रचना है
हरे भरे भारत सपने का
पावन अभियान चलाना है
चलो उठो किशोरों
अब कुछ नया कर दिखाना है
रचेंगे एक नया इतिहास
सफाई के ईस अभियान मे
कर गर्वित हर मानव की सोच
ईस देश मे नया बदलाव लाना है
चलो किशोरो अब कुछ नया कर दिखाना हे

**सुशिल दिलीप नेवे**
द्वितीय वर्ष बी.फार्म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TODAY FOR
BETTER
TOMMOROW
save
water

## Hospital Visit

## Alumni Meet

25th January 2020

# Inauguration of Annual Magazine Varshgrantha-2019

Releasing of Annual Magazine Varshgrantha-2019 on 12/07/19 at
the hands of Hon. Mr. Dilip Ramu Patil, Management Council Member KBC NMU, Jalgaon

# News

## चोपडा औषधनिर्माण शास्त्र महाविद्यालयास पुन्हा एनबीएफ मानांकन

दैनिक पुण्य प्रताप (सचिन जयस्वाल)

चोपडा/प्रतिनिधी

सकाळ

## मानवी मूल्यांची जाण ठेवा

### दिलीप पाटील : चोपड्यात 'वर्षग्रंथ'चे प्रकाशन

सकाळ वृत्तसेवा

चोपडा, ता. २२ : आपल्याला जी काही वैज्ञानिक शिल्पकृती मिळाली ती समाजाकडून मिळाल असली तरी समाजाच्या जबाबदाऱ्या निभावलेल्या काराभारपर मिळाल असावे. म्हणून आपण त्या विशीमध्ये उतरावं शैक्षणिकांसाठी समोच्च मानवी मूल्यांची जाण ठेवून समाजाचे कार्यांसाठी देणे लागतो, याची जाणीव विद्यार्थ्यांनी ठेवायला हवी, असे मत कार्यवाही महिलाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठाचे व्यवस्थापन परिषद सदस्य दिलीप पाटील यांनी व्यक्त केले.

श्रीमती शरदचंद्रिका सुरेश पाटील औषधनिर्माणशास्त्र महाविद्यालयाच्या वार्षिक नियतकालिका 'वर्षग्रंथ २०१८'च्या प्रकाशन सोहळ्याप्रसंगी ते बोलत होते. व्यासपीठावर यांची शिवाय मंडळाचे अध्यक्ष अॅड. संदीप पाटील अध्यक्षस्थानी होते. यावेळी उपाध्यक्षा आशाताई पाटील, संस्थेच्या सचिव डॉ. स्मिताताई पाटील उपस्थित होत्या.

दिलीप पाटील म्हणाले, की विद्यापीठ राबवीत असलेल्या विविध योजना तसेच शैक्षणिक पाठ्यक्रमांच्या विद्यार्थांना कशाप्रकारे उपयोग घेतला जाईल, याबाबत मार्गदर्शन केले.

विद्यापीठ कायद्यांतर्गत होणाऱ्या विद्यार्थ्यांकरिताच्या उपयोगी वेगळ्या उपक्रमांचा घेतला जाते. अॅड. संदीप पाटील यांनी वेगळ्या गुण व कौशल्याच्या यांचे भावी आयुष्यात कसा फायदा होतो, याचे महत्त्व विशद केले. वर्षग्रंथ २०१८ चे मुखपृष्ठ तयार करणाऱ्या द्वितीय वर्षाच्या रसिका निकाळे हिचा मान्यवरांच्या हस्ते गौरव करण्यात आला. प्राचार्य प्रा. डॉ. गौतम बाविस्कर यांनी प्रास्ताविक केले. प्रा. क्रांती पाटील यांनी सूत्रसंचालन केले. प्रा. रुपाली पाटील यांनी आभार मानले.

चोपडा : 'वर्षग्रंथ २०१८'चे प्रकाशन करताना दिलीप पाटील, अॅड. संदीप पाटील, डॉ. स्मिता पाटील, [illegible]

सकाळ

## संस्काराशिवाय शिक्षणाला महत्त्व नाही

### विनायक लोकरे : चोपडा महाविद्यालयात व्याख्यान

सकाळ वृत्तसेवा

चोपडा, ता. ७ : आयुष्यात माणूस म्हणून जगताना शिक्षणाबरोबर संस्कार असले तरच व्यक्तिमत्त्वाला किंमत आहे. सोबत माणुसकी आणि चिंतने काम हाच धर्म आहे, असे प्रतिपादन चोपडा शहर पोलिस निरीक्षक विनायक लोकरे यांनी केले.

चोपडा येथील श्रीमती शरदचंद्रिका सुरेश पाटील औषधनिर्माणशास्त्र महाविद्यालयात विद्यार्थी कल्याण विभाग व अंतर्गत समिती यांच्यातर्फे 'संस्कारमय शिक्षण' या विषयावर आयोजित व्याख्यानात ते बोलत होते. प्राचार्य प्रा. डॉ. गौतम बाविस्कर, उपाध्यक्ष प्रफुल्ल मोरे, प्रा. प्रा. संदीप पवार आदी उपस्थित होते.

श्री. लोकरे म्हणाले, की विद्यार्थ्यांनी शिक्षण, संस्कार आणि कर्म हेच धर्म आहे. समाजात जे घडते आहे ते आपल्यात करण्याचे हे आगामीकाळात असावे. काय घडते काय वाईट हे संस्कार ठरवत असतात. तसेच मला जे जमत नाही त्या विषयाचा पेपर मी दिला नाही, असे त्यांच्या आयुष्यातील मजाचे एक उदाहरण त्यांच्याच आईची कौटुंबिक संस्कारात त्यांचा पतीचाही काय फायदा झाला याचे त्यांनी विस्तृत विवेचन केले. यावेळी सर्व विभागप्रमुख, प्रवेशक शिक्षक, विद्यार्थी-विद्यार्थिनी मोठ्या संख्येने उपस्थित होते. प्राचार्य डॉ. गौतम बाविस्कर यांनी प्रास्ताविक केले. प्रा. किरण बाविस्कर यांनी निरोपन केले. प्रा. संदीप पवार यांनी सूत्रसंचालन केले. प्रफुल्ल मोरे यांनी आभार मानले.

चोपडा : व्याख्यानात बोलताना पोलिस निरीक्षक विनायक लोकरे. समोर उपस्थित प्राचार्य, शिक्षक व विद्यार्थी.

## सांडपाण्यावर प्रक्रिया करून पुनर्वापर

चोपडा येथील शरदचंद्रिका सुरेश पाटील महाविद्यालयाच्या रोहित राज व गणेश व्यास या विद्यार्थ्यांनी 'ग्रे वॉटर ट्रीटमेंट' द्वारे घरातील वाया जाणाऱ्या सांडपाण्यावर संशोधन करून वाया फुकट उपयोग कसा करता येईल, यावर मॉडेल तयार केले असून, याद्वारे तीन प्रकारच्या फिल्टर प्रक्रियेद्वारे पाणी निर्माण करता येणार आहे. पाण्याचा हा प्रकल्प प्रत्येकाच्या घरात कमी खर्चात बनवता येणार आहे. यातून वर्षाला जवळपास १ लाख २० हजार लिटर पाणी पुनर्वापर करता येणार आहे. यासाठी विजेचा अत्यंत कमी वापर केला जात असल्याने घरातील सांडपाणी वाया व जाता भविष्यात पाणीटंचाईवर मात करता येणार आहे.

जळगाव : सांडपाण्याच्या पुनर्वापराच्या मॉडेलसह रोहित राज व गणेश व्यास.

सकाळ

शनिवार, ४ मे २०१९ ४

### 'एनबीए' मानांकनामुळे बी. फार्मसी महाविद्यालयाचे यश

अविनाश चव्हाण स्नेहल पाटील

चोपडा : येथील श्रीमती शरदचंद्रिका सुरेश पाटील औषधनिर्माणशास्त्र महाविद्यालयाचे 'एनबीए' मानांकनामुळे बीफेसी २०१९ पा पासिंग [illegible]

सकाळ अमळनेर

### चोपडा बी. फार्मसी महाविद्यालयाची एनबीए पुनर्मूल्यांकन समितीकडून पाहणी

## इंधन लाकडावर पर्यायी

*इंधनासाठी ग्रामीण भागात लाकडाचा उपयोग होतो. जंगल तोडीमुळे पर्यावरणाचा समतोल बिघडतो. या पोस्टरद्वारे लाकडाला पर्यायांसाठी उपाय सुचवले आहेत.*

▪ **मयूरी निकम**, प्रत्यंचा सूर्यवंशी, एस. एस. पाटील विद्यालय, चोपडा

## चोपडा शहरातील नगरपालिका व पोलिस प्रशासनाला सॅनिटायझरचे वाटप...!

चोपडा येथे नकुतेच कोरोना विषाणूचा प्रसार रोखण्यासाठी प्रत्यक्ष ग्राऊंडवर काम करणाऱ्या चोपडा नगरपालिकेच्या कर्मचाऱ्यांना तसेच चोपडा ग्रामीण व चोपडा शहर पोलीस स्टेशनच्या कर्मचाऱ्यांनच्या सुरक्षेच्या दृष्टिकोनातुन आवश्यक असणाऱ्या सॅनिटायझर वाटप चोपडा शहरातील महात्मा गांधी शिक्षण मंडळाचे अध्यक्ष श्री.अॅड. भैय्यासाहेब संदिप सुरेश पाटील यांच्या आदेशाने म.गा.शि.म.सचलित श्रीमती शरदचंद्रिका सुरेश पाटील औषधनिर्माणशास्त्र महाविद्यालयातील प्राचार्य, शिक्षक व शिक्षकेतर कर्मचाऱ्यांनी यांनी नगरपालिका तसेच शहर व ग्रामीण पोलीस स्टेशनचे पोलीस निरीक्षक श्री. लोकरे व ग्रामीणचे पोलीस निरीक्षक श्री. संदिप अराक तसेच नगरपालिका आरोग्य निरीक्षक श्री.व्ही. के. पाटील तसेच लेखापाल संतोष पुणेकर, श्री. ज्ञानेश्वर चित्रकती, श्री. रमेश बाविस्कर, श्री. प्रताप बाविस्कर, श्री. नरेंद्र हाके हे हजर होते.

लोकमत

संजय सोनवणे, चोपडा

मान्यवरांसोबत विजेते विद्यार्थी.

## चोपडा बी.फार्मसी कॉलेजला चर्चासत्र

लोकमत न्यूज नेटवर्क

चोपडा : येथील महात्मा गांधी शिक्षण मंडळ संचलित शरदचंद्रिका पाटील औषधनिर्माण शास्त्र बी.फार्मसी महाविद्यालयात दोन दिवसीय राष्ट्रीय चर्चासत्र घेण्यात आले. यात राज्यासह देशातील दोनशेवर विद्यार्थी व शिक्षकांनी सहभाग नोंदविला.

फार्माकोग्नसी विभागांतर्गत अखिल भारतीय तंत्रशिक्षण परिषद नवी दिल्ली यांच्या सौजन्याने कॉम्प्युटर बेस्ड फार्मा कोग्नसी : ए न्यू स्केनारिओ इन डेव्हलपमेंट अँड्रहास फाय टो थरोपटिक ॲप्लिकेशन या विषयावर चर्चासत्र झाले.

यावेळ कार्यकारी रजिस्ट्रार डॉ.बी.व्ही.पवार तसेच अधिष्ठाता डॉ.ए.बी.चौधरी, डी.बी.देशमुख, शिरपूर येथील डॉ.पायल दाडे, इंदूर येथील डॉ.सुमीत दिवेदी यांनी मार्गदर्शन केले.

दुसऱ्या दिवसाच्या चर्चासत्रात प्राचार्य डॉ.एस.डी.खऱ्हाटे, प्राचार्य डॉ.एस.पी.पवार, प्राचार्य डॉ.टी.ए. देशमुख प्रमुख अतिथी होते. कार्यक्रम यशस्वीतेसाठी संस्थेचे अध्यक्ष अॅड.संदीप सुरेश पाटील यांच्या मार्गदर्शनात महाविद्यालयातील प्राचार्य डॉ.जी.पी.पडनेरे, डॉ.एम.डी. रागीब, क्रांती डी.पाटील आदींनी परिश्रम घेतले.

## बी फार्मसी महाविद्यालय चोपड़ा येथे २ दिवसीय राष्ट्रीय चर्चा सत्राचे आयोजन

चोपडा– येथील महात्मा गांधी शिक्षण मंडळ संचालित श्रीमती शरचंद्रिका सुरेश पाटील औषधनिर्माणशास्त्र महाविद्यालय फार्माकोग्नसी विभागा अंतर्गत अखिल भारतीय तंत्रशिक्षण परिषद् नवी दिल्ली यांच्या सौजन्याने दिनांक १५ फेब्रुवारी व १६ फेब्रुवारी २०१० रोजी Computer Based Pharmacognosy : - New scenario in Development -dvance Phytotherapeutic -pplications ; या विषयावर दोन दिवसीय राष्ट्रीय चर्चासत्राचे आयोजन करण्यात आले असुन सदर चर्चासत्रा करीता दिनांक १५ रोजी डॉ.बी.पी. पवार (कार्यकारी रजिस्ट्रार) तसेचडॉ. ए. बी. चौधरी (अधिष्ठाता) क.ब.चौ.उ.म.वि. जळगाव डॉ.पायल दाडे मिस शिरपूर, डॉ. सुमीत दिवेदी ओरिंटेल कॉलेज ऑफ फार्मेसी इंदौर यांचे मार्गदर्शन लाभणार असुन सदर चर्चा परिषदे करिता आता पर्यंत राज्यपातिल व इतर राज्यपातिल जवळपास २०० विद्यार्थी व शिक्षकानी आपल्या नावाची नोदनी केली आहे व त्यातिल १५० शोधनिबंध सदर करवार आहेत. सा दिनांक १६ फेब्रुवारी मा. प्राचार्य डॉ.एस.डी. खऱ्हाटे जामनेर .प्राचार्य डॉ. एस.पी. पवार, सहादा प्राचार्य डॉ. टी. ए. देशमुख मगाजबाद यांच्या प्रमुख उपस्थितित पोस्टर प्रेझेंटेशन कॉम्पीटिशनचे आयोजन करण्यात आले आहे शैक्षिणकी उत्कृष्ट प्राचार्य व शिक्षकाना डाउनलोड करण्याची सुविधा महाविद्यालयाने उपलब्ध करुन दिली आहे. सदर कार्यक्रम यासाठी ते कविता संस्थेचे अध्यक्ष मा.भैय्यासाहेब अॅड.संदीप सुरेश पाटील यांच्या मार्गदर्शनात महाविद्यालयातील प्राचार्य विभाग प्रमुख शिक्षक व शिक्षकेत्तर कर्मचारी परिश्रम घेत आहेत.

## चोपड़ा येथे बी फार्मसी महाविद्यालयात २ दिवसीय राष्ट्रीय चर्चा सत्र

चोपडा : प्रतिनिधी

साईमत

येथील महात्मा गांधी शिक्षण मंडळ संचालित श्रीमती शरचंद्रिका सुरेश पाटील औषधनिर्माणशास्त्र महाविद्यालय फार्माकोग्नसी विभाग अंतर्गत अखिल भारतीय तंत्रशिक्षण परिषद नवी दिल्ली यांच्या सौजन्याने दिनांक १५ फेब्रुवारी व १६ फेब्रुवारी २०१० रोजी डेव्हिलपिंग इनोव्हेटिव्हनेस् : - New scenario in Development -dvance Phytotherapeutic -pplications ; या विषयावर दोन दिवसीय राष्ट्रीय चर्चासत्राचे आयोजन करण्यात आले होते.

सदर चर्चेत क.ब.चौ.उ.म.वि तौलकार्यकारी रजिस्ट्रार डॉ.बी.व्ही. पवार, अधिष्ठाता डॉ. ए. बी. चौधरी, डी बी देशमुख, डॉ.पायल दाडे ( मिस शिरपूर), डॉ. सुमीत दिवेदी ओरिंटेल कॉलेज ऑफ फार्मेसी इंदौर यांचे मार्गदर्शन लाभले. सा १६ फेब्रुवारी रोजी प्राचार्य डॉ.एस.डी. ब-हाटे जामनेर .प्राचार्य डॉ. एस.पी. पवार, सहादा प्राचार्य डॉ. टी. ए. देशमुख मगाजबाद यांची प्रमुख उपस्थिती लाभली. सा १६ शोधनिबंध सादर करण्यात आले.पोस्टर कॉम्पीटिशन व विजेते ठिठी लेखन सा खालील प्रथमे,प्रथम पारितोषिक जया पाटील, वर्षाल पाटील( चोपडा कॉलेज ऑफ फार्मसी), द्वितीय पारितोषिक जय पाटील आणि अमोल पाटील( जामनेर कॉलेज ऑफ फार्मसी)., PG level सा प्रथम पारितोषिक स्नेहल पाटील(गवर्मेंट कॉलेज ऑफ फार्मसी, अमरावती) उत्तेजनार्थ पारितोषिक पी एस एनई(मुगाबाद कॉलेज ऑफ फार्मसी) पोलिस बहादर(मिझुनी कॉलेज ऑफ फार्मसी, उदगाव) गणेश पाटील(चोपडा कॉलेज ऑफ फार्मसी).Souvenir CD व त्याचे QR CODE अनि सर्व विद्यार्थी व शिक्षकाना डाउनलोड करण्याची सुविधा महाविद्यालयाने उपलब्ध करुन दिली होती.

सदर कार्यक्रम यासाठी ते कविता संस्थेचे अध्यक्ष अॅड. संदीप सुरेश पाटील यांच्या मार्गदर्शनात प्राचार्य. डी. जी. पी पडनेरे, डॉ एम डी रागीब, क्रांती डी पाटील, सर्व विभागाचे विभाग प्रमुख, शिक्षक व शिक्षकेत्तर कर्मचारी यांनी परिश्रम घेतले.

## Student Welfare Department & Anti Ragging Meet

**04th July 2019**

Students welfare department organized lecture on sanskarmay shikshan and invited speaker was Police sub Inspector Mr. Vinayak Lokare

Anti ragging committee members meet with PSI Vinayak Lokare

## Faculty @ outside

Dr. A. V. Patil, Dr. B. V. Jain, Dr. K. D. Patil, Dr. M D Rageeb & Prof. T. Y. Shaikh
as Expert for Avishkar 2019 at S. G. Patil ASC College Sakri, Dhule

## Conference Participation

Mrs. K. D. Patil, Mrs. S. S. Mahajan, Mrs. P. N. Jadhav & Mrs. P. V. Patil
Participated in Int. Conf. at Dhamangaon Nashik

Kiran D. Baviskar & Swapnil D. Salunkhe
Participated in Int. Conf. at Mumbai

# Rangoli Competition (13th January 2020)

(On the occasion of Mahatma Gandhi Shishan Mandal's Suvarna Mahotsav)
Invited chief guest was Mrs. Bhavanatai Bhosale Block Development Officer, Chopda and Mrs. Madhuri Lad & Mrs. Madhuri Patil evaluated the rangoli competition

# Guest Lecture Arranged By College

Dr. P. K. Labhane, Prof. ASC College, Chopda delivering lecture on Aromatic amines & acids on 25 & 26/07/2019

Dr. S. R. Patil, Prof. ASC College,Chopda delivering lecture on Benzene & its derivatives on 29 & 30/7/19

Mr. Abhijeet Motiwale, Director, MCW Pharma, Indore and Dr. Ravi Somani delivered the guest lecture

# Guest Lecture Arranged By College

Mr. Danish Deshmukh and Mr. Sanjay Rathod College Alumni giving guidance on scope of pharmacy

Dr. Sharada L. Deore, Associate Professor, Govt. College of Pharmacy, Amaravati delivering lecture on World wide trade in medicinal plant and their derived products & role of medicinal & aromatic plants in National economy

Dr. K. P. Narkhede, Associate Professor, Moolji Jetha College, Jalgaon delivering lecture on Fermentation Technology on 20/02/2020

## Sports Activities

Inauguration of Cricket Campaign by
the hands of Principal Dr. G. P. Vadnere & Principal Dr. D. A. Suryavanshi

Smt. SSPCOP football team & other participated students along with teaching & Non-teaching staff on the occasion of MGSM's Suvarna Mahotsav

## Unnat Bharat Abhiyan

## LIC Visit

# Birthday Celebration of Hon.founder President
# Dr. Dadasaheb Suresh. G. Patil

Felicitation of Hon. Founder President Dr. Dadasaheb Suresh Patil
on the Occasion of his Birthday on 18 Nov. 2019

# Poster and Model Making Competition

05th Sept. 2019

Dr. R. M. Bagul inaugurating the competition

Participated students along with evaluator Dr. R. M. Bagul

Rohit Raj & Jain Sayyam Won First and Ganesh Vyas Won Second Prize in Model Making Competition

# Achievement Focus

Ms. Leena Patil won first prize & Ms.Saloni Agrawal won second prize in Cookery competition at Nursing College, Chopda

Final year student group won third prize in Drama

Ms. Hemangi Patil won third prize in Rangoli

## Avishkar Competition

Ms. Bhagyashri Patil, Ganesh Patil & Harsha Pawar selected for University Level Avishkar 2019 Phase -II

## Elocation Competition

Sakshi Lad won third prize in State level Elocation Competition

Ms. Ashwini Patil, Shubham Dhurekar

Ms. Jaya Patil, Deepak Tayade

Kajal Nikam and group

Won First, Third and Second Prize in Poster / Model making competition respectively

***NIPER CRAKERS***

Ashwini Chavan

Snehal Patil

***GPAT CRAKERS***

Barkya Pawara

Roshani Bhavsar

Jayashree Barela

Ganesh Patil Won First Prize in Poster Comp. at Pharm. Conf.

Jaya Patil Won Second Prize in Poster Comp. at Pharm. Conf.

# SOLAR ENERGY

Solar energy radiation from sun capable of producing heat causing chemical reactions or generating electricity. The total amount of solar energy incident on earth is in excess of the worlds current and anticipated energy requirements. If suitably harnessed, this highly diffused source has the potential to satisfy all future energy is expected to become increasingly attractive as a renewable energy. Source because of its inexhaustible supply and it's non-polluting character, in stark contrast to the finite fossil fuels coal, petroleum and natural gas.

The sun is an extremely powerful energy source and sunlight is by far the largest source of energy received by Earth's surface is actually quite low. This is essentially because of the enormous radial spreading of radiation from the distant sun. A relatively minor additional loss is due to Earth's atmosphere and clouds, which absorb or scatter as much as 54 percent the incoming sunlight. The sunlight that reaches the ground consists 45% infrared radiation and smaller amounts of ultraviolet and other forms of electromagnetic radiation.

The potential for solar energy is enormous since about 200,000 Times New Roman the world's total daily electric- generating capacity is received by Earth energy day in the form of solar energy itself is free the high cost of it's collection conversion and storage still limits it's exploitation in many places. Solar radiation can be converted either into thermal energy or into electrical energy though the former is easier to a accomplish.

Among the most common devices used to capture solar energy and convert it to thermal energy are flat-plate collectors, which are used for solar heating application. Because of the intensity of solar radiation at Earth's surface is so low, these collectors must be large in area.

Even in sunny parts of the worlds temperate regions for instance a collector must be large in area. About 40 sq. m (430 sq.ft) to gather enough energy to serve the energy needs of one person.

Solar, hydro, wind and so forth are attractive because they are non-polluting and do not require imported fuel. They have made less progress in the Third world than might be expected perhaps because the technologies are not entirely developed, perhaps because the technologies are not well known.

Solar energy is a co2-free renewable energy source. Solar power is an unlimited source of energy. Solar energy the usable energy generated from the sun it its clean, inexpensive & renewable power source.

Solar panels work by absorbing sunlight with photovoltaic cells, generating direct current (DC) energy and then converting it to usable alternating current (AC) energy with the help of inverter technology. AC energy then flows through the home's electrical panel.

Solar electric systems use solar cells to convert the sun's radient energy into electricity. This is done using a principle known as photovoltaic effect. Since a solar cell only generates about 1-2 watts of power. It is necessary to combine them into solar power panels in order to generate more power.

Solar power is pollution free & causes no greenhouse gases to be emitted after installation. Reduced dependence on foreign oil & fossil fuels. Renewable clean power that is available every day of the year. Even cloudy days produce some power.

**Samiksha Pramod Kotkar**
S.Y.B.Pharm

# SOLAR ENERGY AS GREEN ENERGY

Agriculture and horticulture seek to optimize the capture of solar energy in order to optimize the productivity of plants. Techniques such as timed planting cycles, tailored row orientation, staggered height between rows and the mixing of plant varieties can improve crop yields. While sunlight is generally considered a plentiful resource the exceptions highlight the importance of solar energy to agriculture. Application of solar energy in agriculture aside from growing crops. More recently the technology has been embraced by vintners, who use the energy generated by solar panels to power grape presses.

Greenhouses convert solar light to heat, enabling year-round production and the growth of specialty crops and other plants not naturally suited to the local climate. Greenhouses remain an important part of horticulture today.

**In fuel production –**

Solar chemical processes use solar energy to drive chemical reactions. These processes offset energy that would otherwise come from a fossil fuel source and can also convert solar energy into storable and transportable fuels. Solar induced chemical reaction can be divided into thermochemical or photochemical. Another

approach uses the heat from solar concentrators to drive the steam reformation of natural gas thereby increasing the overall hydrogen yield compared to conventional reforming methods.

**Storage of solar energy –**

Thermal mass systems can store solar energy in the form of heat at domestically useful temperatures for daily. Thermal storage systems generally use readily available materials with high specific heat capacities such as water, earth and stone.

Net metering programs give household systems a credit for any electricity they deliver to the grid. This is handled by "rolling back" the meter whenever the home produces more electricity than it consumes.

In the past there decades, research and development in green energy has exploded, yielding hundreds of promising new technologies that can reduce our dependence on coal, oil and natural gas.

**Types of green energy –**

Here are 6 of the most common types of green energy :

1. **Solar power –** the most prevalent type of renewable energy, solar power is typically produced using photovoltaic cells.
2. **Wind power –** air-flow on the earth's surface can be used to push turbines with stronger wind producing more energy.
3. **Hydro power –** also called hydro electric power, hydropower is generated by the earth's water cycle.
4. **Geothermal energy –** it originates from both the original formation of planet and radioactive decay of minerals.
5. **Biomass –** the wood waste. Sawdust and combustible agricultural waste can be converted into energy and contain stored energy from sun.
6. **Bio fuels –** rather than buring biomass to produce energy, someTimes New Roman these renewable organic material are transformed into fuel. Notable example include ethanol and biodiesel.

**Kajal Sahebrao Nikam**
T.Y.B.Pharm

# SOLAR POWERED SMART DUSTBIN

In the present stage the waste management in the main problem which is seemed in the towns and other places. Present stage is consisting of waste bin which is without having the lid on top. So it is after filling become dirtier and the wastes will be near to that, so the people will have a negative impression and they are not willing to put waste inside the wastebin. So implementing a new system which having high role in the social cleaning and is consist of automated waste bin with entire power is from the renewable solar energy. The smart waste bin will detect the presence of people and automatically opens the lid and it accepts the waste. After the person leave the area the system closes the lid. As mentioned above the system is working in solar energy it require voltage regulation for charging the battery because solar energy is highly fluctuating I nature. Solar cell will change the values it accordance with the solar energy falling on it. It also monitors the garbage bins and informs about the levels of garbage collected in the garbage bins via sending SMS to the cleaning staff and supervisor of the Municipal Corporation. Once the garbage reaches the threshold level ultrasonic sensor will trigger the GSM modem which will continuously alert the cleaning staff and supervisor until the garbage in the dustbin is squashed. In our project smart dustbins with various sensors like ultrasonic sensor for level detection, gas sensor for smell and smoke detection, Conductivity sensor is to detect the liquid content and the MEMS sensor to detect the position of the dustbin. Once the dustbin is emptied it returns back to its original position. The output of these sensors is given to the Arduino Microcontroller for which supply is given through battery which is charged by solar energy.

Solar Smart Dustbin

The smart bin is built on a microcontroller-based platform Arduino Uno board which is interfaced with GSM modem and Ultrasonic sensor. One ultrasonic sensor is used for the position sensing of the human for opening the lid of the dustbin and another ultrasonic sensor is used to sense the height of the garbatge in the dustbin and compare it with the garbage bin depth. The system makes use of Arduino, GSM module for sending a message, servomotor to open the lid, buzzer, LED as an indicator and solar panel of the street light. The system is powered by a 12V battery which gets charged by a solar panel. When the level of garbage crosses the set limit, the system puts on the buzzer. Once the garbage reaches the threshold level ultrasonic sensor will trigger the GSM modem which will continuously alert the cleaning staff and supervisor until the garbage in the

dustbin is squashed. This system uses the solar panel of the street light as the power source which is the advantage of this project. A 12V battery is also used in this system for the power supply which gets charged via a solar panel. In bad weather condition, the battery is used as a power backup.

**2. SYSTEM OVERVIEW**

For communication purpose, Wi-Fi module can also be used in the transmitter section. Wi-Fi is a facility allowing computers, smartphones, or other devices to connect to the Internet or communicate with one another wirelessly within a particular area. The typical range of a common 802.11g network with standard equipment is on the order of tens of meters. While sufficient for a typical home, it will be insufficient in a larger structure. To obtain additional range, repeaters or additional access points will have to be structure. To obtain additional range, repeaters or additional access points will have to be purchased. Costs for these items can add up quickly. A GSM modem is a specialized type wireless modem that works with a GSM wireless network. It accepts a SIM card, and operates over a subscription to a mobile operator, just like a mobile phone.

**3. HARDWARE AND SOFTWARE USED IN SYSTEM**

| | |
|---|---|
| **Arduino Uno:** | To control land operate the system. It is Connected to all the the components of the system. Specification: 32KB flash memory, 1KB EEPROM, 2KB SRAM, 16MHz Clock, 14 Digital I\O, 6 analog Inputs, 6 PWM Output Pins, 12C Bus, Serial Bus |
| **Ultrasonic sensor:** | To sense the height of the garbage in lthe dustbin and compare it with the garbage bin depth. Supply voltage 5v, Global Current Consumption 15mA Ultrasonic Frequency 40k Hz, Maximal Range 400 cm, Minimal Range 3 cm, Resolution 1cm, Trigger Pulse Width 10 us, Outline Dimension 43x20x15 mm. |
| **GSM Module:** | Works with a GSM wireless network, it accepts SIM card, and operates over a subscription to a mobile operator, just like a mobile phone. |
| **Buzzer:** | It acts as an alarm Operation Voltage: 3-5V DC, \|Current: <25mA, SPL: 85Dba\10CM Frequency: 2,300Hz, Operating Temperature:-20` to +65`C |
| **Solar Panel:** | PV solar panels generate direct current (DC) electricity. With DC electricity electrons flow in one direction around a circuit. |
| **Battery:** | 12V, 1 amp |
| **Servomotor:** | Used to open the lid of the dustbin |

**Table-1: Hardware Used**

| Name of Software | Use of software in the proposed system |
|---|---|
| **Arduino IDE** | For Programming and Uploading the code to Arduino UNO Board, connected via USB cable to the computer. |

This system assures the clearing of dustbins soon when the garbage level take

the power supply with the help of Solar panel. If the dustbin is not cleaned at specific time, then the record is sent to the Sweeper or higher authority who can take appropriate action against the concerned contractor. This system also helps to monitor the fake reports and hence can reduce the corruption in the overall system. This reduces the total number of trips of garbage collection vehicle and hence reduce the overall expenditure associated with the garbage collection. It ultimately helps to keep cleanliness in the society. Therefore, the Smart Dustbin Using Solar Panel system makes the garbage collection more efficient.

**Patil Jaya Dagadu**
Final Year B.Phram

# SOLAR ENERGY- A RENEWABLE SOURCE

Solar thermal technologies can be used for water heating, space heating, space cooling and process heat generation.

Water heating –

Solar hot water system use sunlight to heat water. In low geographical latitudes (below 40`) from 60 to 70% of the domestic hot water use with temperature up 60`C can be provided by solar heating systems. The most common types of solar water heaters are evacuated tube collectors (44%) and glaze flat plate collectors(34%) generally use for domestic hot water and unglazed plastic collectors (21%) used mainly to heat swimming pools. The total installed capacity of solar hot water systems was approximately 154 thermal gigawatt (GWth)

Heating, cooling and ventilation-

Solar heating, cooling and ventilation technologies can be used to offset a portion of this energy. Thermal mass is any material that can be used to store heat-heat from the sun in the case of solar energy. A solar chimney cor thermal chimney is a passive solar ventilation systems composed of a vertical shoft connecting the interior and exterior of a building. As the chimney warms, the air inside is heated causing an updraft that pulls the air through the building.

Cooking –

Solar cookers use sunlight for cooking, drying land pasteurization. They can be group into there broad categories: box cookers, panel cookers and reflector cookers. A box consist of an insulated container with a transparent lid. It can be used effectively with partially overcast skies and will typically reach temp of 90-150`C

Solar distillation –

Solar distillation can be used to make saline or brackish water potable. The plant, which had solar collection area of 4,700 m2(51,000 sq foot) could produce up to 22,700 L (5,000 imp gal) per day and operate for 40 years solar water disinfection (SODIS) involves exposing water-filled plastic polyethylene terephthalate (PET) bottles to sunlight for several hours. Solar energy may be used in a water stabilization pond to treat waste water without chemicals or electricity.

Solar power is the conversion of sunlight into electricity, either directly using photovoltaic (PV) or indirectly using concentrated solar power (CSP) Solar chemical processes use solar energy to drive chemical reaction. These processes offset energy that would otherwise come from a fossil fuel source and can also convert solar energy into storable and transportable fuels solar induced chemical reaction can be divided into thermochemical or photo chemical.

Concentrating solar power (CSP) systems use lenses or mirrors and tracking systems to focus a large area of sunlight into a small beam. The two solar project used this method of energy storage, allowing into shore 1.44 tetrajovles (400,000 KWH) in it's 68 m3 storage tank with an annual storage efficiency of about 99%.

**Nalini Dinesh Wagh**
S. Y. B. Phram

# SOLAR ENERGY AS GREEN ENERGY

**What is solar energy ?**

Solar energy is radient light and heat from the sun that is harnessed using a range of ever-evolving technologies such as solar heating, photovoltaic, solar thermal energy, solar architecture, molten salt power plants and artificial photosynthesis.

In the 21st century solar energy is expected to become increasingly attractive as a renewable energy. Source because of its inexhaustible supply and its nonpolluting character, in stark contrast to the finite fossil coal, petroleum and natural gas.

**Mechanism of solar energy**

Solar panels work by absorbing sunlight with photovoltaic cells, generating direct current (DC)energy and then converting it to usable alternating current (AC) energy with the help of inverter technology. Ac energy then flows through the home's electrical ponel and is distributed accordingly.

**Work of solar energy**

1. Photovoltaic cells absorb the sun's energy and convert it to DC electricity.
2. The solar inverter converts DC electricity from your solar modules to AC electricity is used by most home appliances.
3. Electricity flows through your home, powering electronic devices.
4. Excess electricity produced by solar panels it fed to the electric grid.

**Used of solar energy**

1. Solar radiation can be converted either into thermal energy or into electrical energy

2. Thermal energy used for solar heating application
3. Electricity can be produced by solar cells.
4. Solar energy is used to produce salt from seawater by evaporation
5. As heat for making hot water, heating building and cooking.

**Advantages of solar energy**

1. Solar energy is a truly renewable energy source.
2. Solar energy produce to reduce electricity bills.
3. Solar energy systems generally don't require a lot of maintenance.
4. Solar energy used in technology development.

**Neha Deepak Jogi**
T.Y. B. Pharm

## INTRODUCTION

Renewable energy is energy that is collected from renewable resources, which are naturally replenished on a human Times New Romancale, such as sunlight, wind, tides, waves, and geothermal heat. Renewable energy often provides energy in four important areas: electricity generation, air and water heating\ cooling, transportation, and rural (off-grid) energy services.

There are many forms of renewable energy one of is solar energy.

**Solar energy:** This form of energy relies on the nuclear fusion power from the core of the sun. this energy can be collected and converted in a few different ways. The range is from solar water heating with solar collectors or attic cooling with solar attic fans for domestic use to the complex technologies of direct conversion of sunlight to electrical energy using mirrors and boilers or photovoltaic cells.

Solar radiation which we receive as heat and light can be converted to useful thermal energy or for production of electricity either through solar photovoltaic route or through solar thermal route. Availability of reliable solar radiation data is vital for the success of solar energy installation in different sites of the country. For solar collectors which are flat in nature, solar radiation data in the form of global horizontal irradiance (GHI) is useful whereas for solar collectors which are concentrating in nature direct normal irradiance (DNI) data is required. Solar thermal power plant are essentially concentrating solar power (CSP) units. For designing solar thermal power plants, DNI data is therefore a pre-requisite.

**Advantages of renewable energy**

- Renewable energy won't run out.
- Maintenance requirements are lower.
- Renewable save money.
- Renewable energy has numerous health and environmental benefits.
- Renewable lower reliance on foreign energy sources.
- Higher upfront cost.
- Intermittency.
- Storage capabilities.

## PHOTOVOLTAIC DEVELOPMENT

Photovoltaic (PV) is rapidly-growing with global capacity increasing from 177GV at the end of 2014 to 385 GV in 2017.

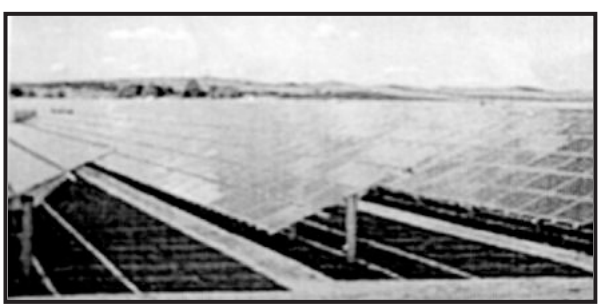
PV uses solar cells assembled into solar panels to convert sunlight into electricity. PV system range from small, residential and commercial rooftop or building integrated installations, to large utility-scale photovoltaic power station. The predominant PV technology is crystalline silicon, while thin-film solar cell technology account for about 10 percent of global photovoltaic deployment. In recent years, PV technology has improved its electricity generating efficiency, reduced the installation cost per watt as well as its energy payback time, and reached grid parity in at least 30 different markets by 2014. Building integrated photovoltaic or " onsite" PV systems use existing land and structures and generate power close to where it is consumed.

Photovoltaic grew fastest in china, followed by japan and the united states. Italy meets 7.9 percent of its electricity demands with photovoltaic power-the highest share worldwide. Solar power is forecasted to become the world's largest source of electricity by 2050, with solar photovoltaic and concentrated solar power contributing 16% and 11% respectively. This requires an increase of installed PV capacity to 4,600 GW, of which

more than half is expected to be deployed in china and india.

**Experimental solar power**

Concentrated photovoltaics (CPV) systems employ sunlight concentrated onto photovoltaic surfaces for the purpose of electricity generation. Thermoelectric or "thermovoltaic" devices convert a temperature difference between dissimilar materials into an electric current.



Soler Panels at the 550 MW Topaz Solar Farm

Commercial concentrated solar power plants were first developed in the 1980s. as the cost of solar electricity has fallen, the number of grid-connected solar PV system has grown into the millions and utility-scale solar power station with hundreds of megawatts are being built. Many solar photovoltaic power station have been built, mainly in Europe, china and the united states. The 1.5 GW Tengger desert solar park, in china is the world's largest PV power station. Many of these plants are integrated with agriculture and some use tracking systems that follow the sun's daily path across the sky to generate more electricity than fixed- mounted systems.

**MECHANISM**

Solar energy, radiant light and heat from the sun, is harnessed using a range of ever-evolving technologies such as solar heating, photovoltaics, concentrated solar power (CPS) concentrator photovoltaics(CPV) solar architecture and artificial photosynthesis. Solar technologies are broadly characterized as either passive solar or active solar depending on the way they capture, convert, and distribute solar energy. Passive solar techniques include orienting a building to the sun, selecting materials with favorable thermal mass or light dispersing properties, and designing spaces that naturally circulate air. Active solar technologies encompass solar thermal energy, using solar collectors for heating and solar power converting sunlight into electricity either directly using photovoltaic (PV) or indirectly using concentrated solar power(CSP).

A photovoltaic system convert light into electrical direct current(DC) by taking advantage of the photoelectric effect. Solar PV has turned into a multi-billion fast-growing industry, continues to improve its cost-effectiveness, and has the most potential of any renewable technologies together with CSP. Concentrated solar power (CSP) system use lenses or mirrors and tracking systems to focus a large area of sunlight into a small beam. Commercial concentrated solar power plants were first developed in the 1980s. CSP-Stirling has by far the highest efficiency among all solar energy technologies.

**MINISTRY OF NEW AND RENEWABLE ENERGY (MNRE)**

The ministry of New and Renewable energy (MNRE) is the nodal Ministry of the Government of India for all matters relating to new and renewable energy. The broad aim of ministry is to develop and deploy new and renewable energy for supplementing the energy requirements of the country.

**Raj Kumar Singh is the Honourable Minister of state(IC), Power , New & renewable energy), Minister of state (Skill Development and Entrepreneurship)**

National Institute of Solar Energy, an autonomous institution of Ministry of New and Renewable (MNRE), is the apex National R&D institution in the field Solar Energy. The Government of India has converted 25 year old Solar Energy Centre (SEC) under MNRE to an autonomous institution in September, 2013 to assist the Ministry in implementing the National Solar Mission and to coordinate research, technology and other related works.

**National Institute of Solar Energy (NISE)**

**Gurgaon - Faridabad Highway**

**Gwal Pahari**

**Gurgaon - 122 003, Haryana, India**

**For more details please visit NISE Web Page: Web site : http://nise.res.in**

**Activities:**

The Solar Energy Centre (SEC) serves as an effective interface between the Government and institutions, industry & user organizations for development, promotion and widespread utilization of solar energy in the country.

**The functions of the Centre are as follows :**

**Research and development**

- Cooperation with institutions and industry Technology evaluation, testing and standardization
- Evaluation of Technical, Environmental, and Economic performance
- National Referral Test Facility
- Developmental Testing
- Coordination with Regional Test Centers (RTCs) and Standards Organizations

**Human resource development**

- Visitors Programme

- Training, workshops, symposia and seminars

**Advisory and consultancy services**

- International cooperation
- Plantation of Jatropha curcas for production of Bio-diesel

**Achievements:**

The Centre has been playing a crucial role in development and promotion of solar energy technologies. The Centre has been the technical focal point for the National Solar Energy Programme. The facilities created at the Centre to enable it to perform its role are the most advanced and unique in India and south Asian region. The Centre is recognised today as a leading institution for

1. Solar Resource Assessment
2. Technology Assessment
3. Solar Buildings
4. System Designing
5. Evaluation of Emerging Technologies
6. Testing and Standardization of solar devices
7. Bio-fuel Plantation

Apart from development of infrastructural and R&D facilities, the Centre has also many other significant achievements as given below, to its credit.

**Main achievements:**

- Technical assistance to industry for development for solar energy products
- Development of National Standards for solar thermal devices
- Establishments of testing protocol for solar thermal and solar PV devices for attaining uniformity in the testing carried out by various authorized agencies within the country.
- Preparation of a number of technical reports/papers on important solar energy topics, such as solar thermal power generation, solar refrigeration, solar desalination, biofuel and other technologies.
- Establishment of a number of technology demonstration projects which includes a 46 KW solar PV power project at the Centre.
- Establishment of state-of-the-art facilities for solar energy research and testing under assistance from UNDP, USAID and GTZ.
- Establishment of a solar evaporative cooling system for a part of the technical blocks of the Solar Energy Centre.
- Reviving 50 KWe Solar Thermal Power Plant by indegninizing some critical components like Heat Collection Elements. Plant is in use as R&D, Demonstration & Educational facility.
- 26,000 & 500 saplings of Jatropha Curcas and Pongania Pinnata have been planted respectively under the biofuel programme during 2005-06.
- Prepared a bio-diversity report including both indigenous and exotic flora of SEC.
- Prepared presentation material i.e. posters giving technical details from cultivation of Jatropha curcas to production of biodiesel.

**Mrs. Suvarnalata S. Mahajan**
Asst. Professor, Department of pharmaceutics

# RENEWABLE ENERGY

Renewable energy earriers –

All the energy carriers discussed above either fossil or nuclear fuels. They are renewable because they are not refilled by nature at least not in useful amount of time in contrast renewable energy carries are energy carries that are replenished by natural process at the rate comparable or faster than its rate of consumption by humans hydroelectricity is example of energy conversion technology that is not based on heat generation by fossil or nuclear fuels. The potential energy of rain falling in mountainous area or elevated plateaus is converted into electrical energy via, a water turbine with tidal pools the potential energy stored in the tides can also be converted to mechanical energy & subsequently electricity. The kinetic energy of wind can be converted into mechanical energy using wind mills.

Solar light can also be converted into heat. This application called solar thermal energy.

**Solar energy –**

Solar energy is the conversion of energy from sunlight into electricity either directly using photovoltaic indirectly using concentrated solar power sys use lenses or mirrors and tracking system to focus a large area of sunlight into small photovoltaic cell convert light into an electric current using the photovoltaic effect

Photovoltaic were initially solely used as a source of electricity for small & medium size application form the calculator powered by single solar cell to remote

home powered by off-grid rooftop pv system commercial concentrated solar power plant first developed in the 1980s. the cost of solar electricity has follen, the number of gird- connected solar pv system has grown into million and utility-scale photovoltaic power station. With hundreds of megawatts are bing built. Solar pv is rapidly becoming an inexpensive low-carbon technology to harness renewable energy from the sun. the current largest photovoltaic power station in world.

**Mainstream technologies –**

Many industrialized nations have instelled significant solar power capacity into their grid to supplement or provide an alternative to convertional energy sources while an increasing number of less developed nations have turned to solar to reduce dependence on expensive imported fuels long distance transmission allow remote renewable energy resources to displace fossil fuel consumption.

**Solar power plant use one of two technologies –**

- Photovoltaic system use solar panels either on rooftop or ground – mounted solar forms converting sunlight directly into electric power.
- Concentrated solar power plant use solar thermal energy to make steam that is thereafter converted into electricity by turbine.

**Photovoltaics –**

A solar cell or photovoltaic cell is a device that converte light into electric current using the photovoltaic effect. The first solar cell was constructed by Charles frits in the 1880s. the german industrialist Ernst Werner von Siemens was among those who recognized the important of this discovely in 1931 the german engineer Bruno lange developed a photo cell using silver selenide in place copper oxide altbough the prototype selenium cell converted less than 1% incident light into electricity.

The array of a photovoltaic power system or PV System produce direct current power which fluctuates with the sunlight intensity for practical use this usually requires conversion to certain desired voltage or alternating current (AC) through the use inverters multiple solar cell are connected inside modules. Modules are wired together to from a rays the tied to an invettle which produces power desired voltage & AC desire phase.

**Concentrated solar power –**

Concentrated solar power also called con solar thermal use lenses or mirrors & tracking & system to concentrate sunlight then use the resulting heat to generate electricity from conventional steam driven turbines.

A wide range of con technology exists among the best known are the parabolic through the compact linear Fresnel reflector the striling dish and solar power tower various techniques are used to track the sun and focus light. In all of these system a working fluid is heated by concentrated sunlight and then used for power generated or energy storage. Thermal storage efficiently allow up to 24-hour electricity generation.

A parabolic trough consist of linear parabolic reflector that concentrate light onto a receiver positioned along the reflector's focal line. The receiver of linear parabolic mirrior and filled of linear parabolic mirror and filled with working fluid.

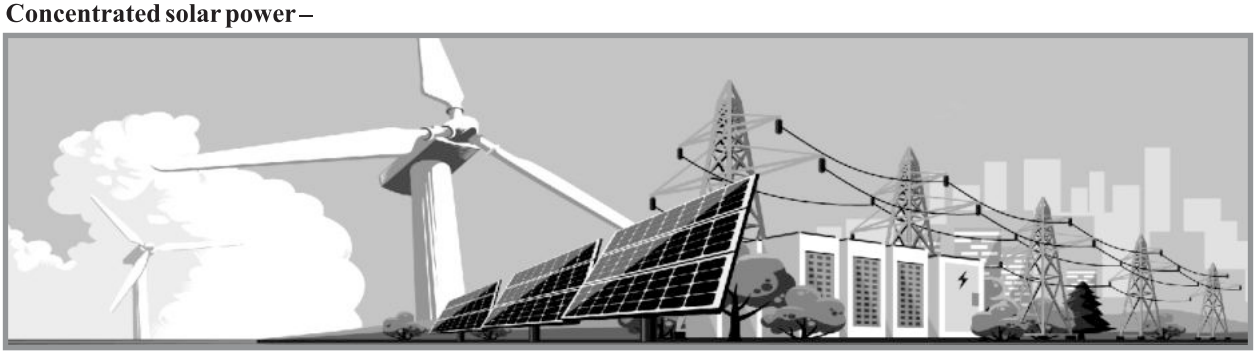
**Environmental effect –**

Solar power does not lead to any harmful emission during operation but the production of the panels lead to some amont of pollution.

**Greenhouse goses-**

The life-cycle greenhouse-gas emission of solar power are the range of 22 to 46 gram per kilowatt-hour depending of if solar thermal or solar PV is being analyzed, respectively. With this potentially being decrease to 15g\kwh in future. For comparsion a combined cycle gas fired power plant emits some 400-599 g\kwh an oil-fired power plant 893 g\kwh, a coal-fired power plalnt 915-944 g\kwh or with carbon capture & storage some 200 g\kwh & a geothermal high temp. the power plant 91-122 g\kwh. The life cycle emission ptensity of hydro, wind & nuclear power are lower than solar as 2011 as published by the pcc & discussed in articles. Life cycle greenhouse-gas emission of energy sources.

**Yukta Suresh Chaudhari**
S.Y.B.Pharm



# RENEWABLE ENERGY

Solar energy is a radiant light and heat from the sun that is harnessed using a range of ever evolving technologies such as solar heating, photovoltaic. Solar thermal energy, solar architecture molten salt powder plant 4 artificial photosynthesis.

The large magnitude of solar energy available makes it a highly appealing source of electricity. The united nation development programme in its 2000 world energy assessment found that the annual potential of solar energy was 1,575-49,837 exajoules.

In 2011 the international energy agency said that " The development of affordable, inexhaustible & clean solar energy technologies will have huge longer term benefits.

Renewable energy is energy that is collected from renewable resource which are naturally replenished an a human Times New Romancale such as sunlight, wind, rain, tides, waves & geothermal heat. Renewable energy often provides energy in four important areas:

Electricity generation air and water, heating\cooling, transportation & rural energy services.

Based on REN21's 2017 report, renewable contributed 19.3% to humans global energy consumption & 24.5% to their generation of electricity in 2015 & 2016 resp. this energy consumption is divided as 8.9% coming from traditional biomass 4.2% as heat energy 3.9% from hydroelectricity & the remaining 2.2% is electricity from wind, solar, geothermal & other forms of biomass. World wide investments in renewable technologies amounted to more than us $286 billion in 2015.

Globally there are an estimated 7.7 million jobs associated with the renewable energy industries, with solar photovoltaics being the largest renewable employer. Renewable energy system and cheaper & their share of total energy consumption is increasing as of 2019 world wide more than 2\3 of all new electricity capacity installed was renewable.

While many renewable energy projects are large-scale, renewable technologies are also suited to rural & remote areas and developing countries where energy is often crucial in human development as most of renewable energy technologies provide electricity renewable energy development is often applied in conjunction with further electrification. Which as several benefits : electricity can be converted heat can be converted into mechanical energy with high efficiency & is clean at the point of consumption in addition electrification with renewable energy is more efficient & therefore leads to significant reductions in primary energy requirements.

India is one the countries with the largest production of energy from renewable sources. In the electricity sector, renewable sources or account for 34.6% of the total installed power capacity large hydro installed capacity was 45.399 GW as of 30 June 2019, contributing to 13% of the total power capacity 80467 GW as 30 June 2019.

Renewable energy in india comes under the purview of ministry of new and renewable energy. India was the first country in the world to sep up ministry of non convectional energy sources. Solar energy corporation of india is responsible for the development of solar industry in india.

**Sakshi Upendra Lad**
S.Y.B.Pharma

# OVERVIEW OF RENEWABLE ENERGY

Renewable energy flows involve natural phenomena such as sunlight, wind, tides, plant growth, and geothermal heat, as the international Energy Agency explains :

Renewable energy is derived from natural processes that are replenished constantly. In its various forms, it derives from the sun, or from heat generated deep within the earth. Included in the definition in electricity and heat generated from solar, wind, ocean, hydropower, biomass, geothermal resources, and biofuels and hydrogen derived from renewable resources.

Renewable energy resources and significant opportunities for energy efficiency exist over wide geographical areas, in contrast to other energy sources, which are concentrated in a limited number of countries. Rapid deployment of renewable energy and energy efficiency, and technological diversification of energy sources, would result in significant energy security and economic benefits. It would also reduce environmental pollution such as air pollution caused by burning of fossil fuels and improve public health, reduce premature mortalities due to pollution and save associated health costs that amount to several hundred billion dollars annually only in the united states. Renewable energy sources, that derive their energy from the sun, either directly or indirectly, such as hydro and wind, are

expected to be capable of supplying humanity energy for almost another 1 billion years, at which point the predicted increase in heat from the sun is expected to make the surface of the earth too hot for liquid water to exist.

Climate change and global warming concerns, coupled with the continuing fall in the costs of some renewable energy equipment, such as wind turbines and solar panels, are driving increased use of renewable. New government spending, regulation and policies helped the industry weather the global financial crisis better than many other sectors. As of 2019, however, according to the international renewable energy agency, renewable overall share in the energy mix(including power, heat and transport) needs to grow six Times New Roman faster, in order to keep the rise in average global temperatures "well below" 2.0`C (3.6`F) during the present century, compared to pre-industrial levels.

As of 2011, small solar PV systems provided electricity to a few million households, and micro-hydro configured into mini-grids serves many more. Over 44 million households use biogas made in household-scale digesters for lighting and\or cooking, and more than 166 million households rely on a new generation of more-efficient biomass cookstoves. United Nation's Secretary-General Ban Ki-moon has said that renewable energy has the ability to lift the poorest nation to new levels of prosperity. At the national level, at least 30 nations around the world already have renewable energy contributing more than 20% of energy supply. National renewable energy markets are projected to continue to grow strongly in the coming decade and beyond, and some 120 countries have various policy targets for longer term shares of renewable energy, including a 20% target of all electricity generated for the European Union by 2020. Some countries have much higher long term policy targets of up to 100% renewable. Outside Europe, a diverse group of 20 or more other countries target renewable energy shares in the 2020-2030 time frame that range from 10% to 50%.

Concentrated photovoltaic (CPV) systems employ sunlight concentrated onto photovoltaic surface for the purpose of electricity generation. Thermoelectric, or "thermovoltaic" device convert a temperature difference between dissimilar materials into an electric current.

**Rohit Raj**
S. Y. B.Phram

# THE ENVIRONMENTAL BENEFIT OF SOLAR ENERGY

Solar energy creates clean, renewable power from the sun and benefits the environment. Alternatives to fossil fuels reduce carbon footprint at home and abroad, reducing greenhouse gases around the globe. Solar is known to have a favorable impact on the environment.

Most of the electricity generated in the U.S. comes from fossil fuels like coal and natural gas. Extracting and using fossil fuels is expensive and harmful to the environment. By contrast, solar energy is free and readily abundant – if we could capture all of the sun's energy shining on the Earth for just one hour, we could power the entire world for one year!

By investing in solar energy, you can help reduce our reliance on fossil fuels in favor of one of the most abundant, consistent sources of energy we have available: our sun.

**Solar energy decreases greenhouse gas emissions**

Generating electricity with solar power instead of fossil fuels can dramatically reduce greenhouse gas emissions, particularly carbon dioxide (Co2). Greenhouse gases, which are produced when fossil fuels are burned, lead to rising global temperatures and climate change. Climate change already contributes to serious environmental and public health issues in the Northeast, including extreme weather events, rising sea levels, and ecosystem changes.

By going solar, you can reduce demand for fossil fuels, limit greenhouse gas emissions, and shrink your carbon footprint. One home installing a solar energy system can have a measurable effect on the environment. According to the U.S. Energy Information Administration, the average home with solar panels in Connecticut uses 8,288 kilowatt-hours (kWh) of electricity per year. Switching from fossil fuels to solar power in the state has the same emissions reduction effect as planting around 150 trees every year.

In New York, the average home uses 7,248 kWh of electricity annually. Choosing a clean source of electricity like solar panels can eliminate the same amount of carbon emissions that would result from burning over 5,000 pounds of coal each year.

**Solar energy reduces respiratory and cardio health issues**

One of the biggest benefits of solar energy is that it results in very few air pollutants. An analysis by the National Renewable Energy Laboratory (NREL) found that widespread solar adoption would significantly reduce nitrous oxides, sulfur dioxide, and particulate matter emissions, all of which can cause health problems. NREL found that, among other health

benefits, solar power results in fewer cases of chronic bronchitis, respiratory and cardiovascular problems, and lost workdays related to health issues.
The benefits of solar energy are clear. Not only can you save money on your electric bills – you can also reduce your carbon footprint and improve the health of those around you. Compare quotes today to see how much you can save by going solar.
https://news.energysage.com/health-environmental-benefits-of-solar-energy/

**Mayuri Patil**
First year B.Pharm

# TOP 10 SOLAR COMPANIES IN INDIA

Tata Power Solar Systems Ltd.
A complete subsidiary of Tata Power, this is India's leading solar company. Headquartered in Bengaluru, it is India's largest solar company. Tata Power Solar Systems has been leading the way regarding innovation made in the solar industry. With a noble vision of producing electricity for the masses without leaving the slightest carbon footprint, the company is undertaking several innovative solar projects.
EMMVEE
Stationed in Bengaluru, EMMVEE, led by DV Manjunatha, is one of the most diverse solar companies in India. Their dealings range from solar-powered water heaters to sophisticated photovoltaic cells. When you think that the company was only founded in 1992, it just fascinates what it has managed to achieve in such a small time span. EMMVEE is one of the fastest growing and prominent solar companies in the country and has paved the way for groundbreaking innovation in the solar industry.
Loom Solar Pvt. Ltd.
Loom Solar Pvt. Ltd. is young, dynamic and emerging manufacturer of solar modules having 100 mw state of art facility in Haryana, India. The company manufacturers 10 watt – 340 watt solar PV modules in poly and mono crystalline technology. Loom Solar mono panels are latest technology product which works in low light and cloudy weather. The panels comes with a 25 years warranty, 5 Bus bar technology PID resistant, and RoHS compliant which means, there is no component used in PV modules which impacts human life.
Loom Solar was started by ex-Luminous executive Amol Anand in 2018 and it operates all across the country with 1,000 + Dealer, Distributor network. It has made 2000 homes solar powered across 700 cities in India.
Icomm Tele Ltd.
Founded in the year 1989, Icomm Tele Ltd. is one of the very few companies in India to have a global reach.
Moser Baer Solar Ltd. (MBSL)
Like Icomm, MBSL also boasts of a massive global presence, In India however, the company's current solar might stands at 250 MW, according to current efficiency levels. In 2013, the company became one of the major driving forces in Kerala's ANERT program that aimed at installing solar panels on residential rooftops.
Indosolar Ltd.
Indoslar was founded very recently in 2008 by Bhushan Kumar Gupta. However, in less than a decade of operations, the company has already started manufacturing solar panels and other instruments for the Indian and global markets. With a capacity to produce 450 MW of solar power, it has made its name among the leading solar companies in India.
Waaree Solar Pvt. Ltd.
Founded in 1989, Waaree Solar has become one of the leading players in India's solar market. Like all great companies, it has a diversity of the solar equipment that it produces. Besides solar power, the company provides industrial valves, and process control instrumentation. Apart from that, the company also has a significant global presence.
Websol Energy System Ltd.
Although the company had to face some financial issues when it opened, Websol soon got over it and became one of India's leading solar companies. The company aims at making solar power accessible to common people.
Vikram Solar Pvt. Ltd.
Vikram Solar's parent company has an experience of over 4 decades in engineering and manufacturing activities. Due to its lineage, it is recognised as one of the most prominent solar companies in the subcontinent. They have one of the largest solar plants, located in West Bengal. The solar company has already done several successful projects in states of Rajasthan and Tamil Nadu.
Photon Energy Systems Ltd.
The USP of Photon Energy Systems is its active R&D department. Equipped with state of the art facilities and technologies Photon has managed to establish its name as a major Indian solar company. The company deals with the production of solar PV modules and solar thermal systems.

**Divya Patil**
Third Year B.Pharm

# Achievement Focus

ANDRIKA SURESH PATIL
PHARMACY, CHOPDA
SMT.SHARADCHANDRIKA SURESH PATIL
COLLEGE OF

# तारुण्यम् - २०२०

(Annual Gathering)

# तारुण्यम् - २०२०

(Annual Gathering)

# CONDOLENCE
## 5th December 2019

A beautiful soul, full of love and faith, ascended to heaven,
away from us, but closer to God.

## (AICTE Sponsored.)

# Two Days National Conference on "Computer Based Pharmacognosy : A New Scenario Developing Advanced Phytotherapeutic Application

(15th and 16th February 2020)

Hon. Dr. B.V. Pawar, Officiating registrar, & Hon. Dr. A . B. Chaudhari, Dean Sci.& Tech. KBCNMU, Jalgaon lightening the lamp

Inaugural speech by Principal Dr. G. P. Vadnere

Mrs. Kranti D. Patil giving Introduction of Chief Guests

Prof. D. B. Deshmukh giving Certificate & Momento to Hon. Dr. B. V. Pawar& Hon. Dr. A. B. Chaudhari

Dr. Payal Dande, Assistant Prof. SVKM's NIMIMS, SPTM, Shirpur delivering lecture to Participant

Dr. Sumeet Dwivedi, Oriental College of Pharmacy & Research, Oriental University, Indore, delivering lecture to Participant

Registration committee

Participants attending the Conference

Inauguration of Poster presentation
by the hands of Principal Dr. S. D. Barhate, Dr. Sunil P. Pawar & Dr. Tushar A. Deshmukh

Principal Dr. G. P. Vadnere & Principal Dr. Sunil P. Pawar giving guidance to Participants

Principal Dr. S. D. Barhate, Dr. Tushar A. Deshmukh & Dr. Sunil P. Pawar Evaluating Posters in Conference

Winners in Poster Presentation

स्वच्छ भारत
स्वच्छ भारत

SAVE RAIN WATER
Irrigation System
IN GROUND RAIN TANK

SAVE ENERGY

# IMPORTANCE OF RAINWATER HARVESTING

**Introduction :**

Rainwater harvesting is a type of harvest in which the rain drops are collected and stored for the future use, rather than allowing it to run off. Rainwater can be collected from rivers or roofs and redirected to a deep pit, aquifer, a reservoir with percolation or collected from dew or fog with nets or other tools its uses include water for garden, livestock irrigation, domestic uses with proper treatment indoor heating for houses, etc. the harvested water can also used as drinking water, long term storage and for other purposes such as ground water recharge.

Rainwater harvesting is one of the simplest and oldest methods of self-supply of water for households usually financed by the user,

i. Rainwater harvesting of there importance:-

1. Rainwater harvesting or the collection of rainwater in proper way can be a permanent sol to the problem of water crisis in different parts of the world. This simple method can put forward a solution which will be workable in areas where there is sufficient rain but the ground water supply is not sufficient on the one hand and on the other surface water resource is insufficient.

This is particulary applicable in hilly areas where it can be utilized for human consumption by animals and also for farming. In remote areas, where surface pollution is comparatively rainwater harvesting is ideal.

2. Although the earth is there-fourths water; very little of it is suitable for human consumption or agriculture. Rainfall is unpredictable and there a constant shortage of water in countries which are agriculture dependent or generally drought prone.

3. A bad monsoon means low crop yield and shortage of food. Even animals suffer from scarcity of water. Africa and the india subcontinent face acute water crisis during the summer months. The farmers are the most affected because they do not get sufficient water for their fields. Rainwater harvesting therefore is an ideal solution for farmers who depend on monsoon for consistent water supply.

4. Unavailability of clean water compels the consumption of polluted water, giving rise to water borne diseases and high rate of infant mortality. In recent studies it has been observed that in lima (peru) nearly 2 million people do not have access get water supply which has a high possibility of being contaminated.

5. If rain water which comes for free, can be collected and stored, instead of retting it run off, it could be an alternative to back up the main water supply especially during dry spells. Its importance will not be limited to an individual family but can be used by a dry spells.

6. The importance of rainwater harvesting lies in the fact that it can be stored for future use. Just at it can be used directly so also the stored water can be utilized to revitalize the ground level water and improve its quality. This also helps to raise the level of ground water which then can be easily accessible. When fed into the ground level wells and tube well are prevented from drying up. This increases soil fertility. Harvesting rainwater checks surface run off of water and reduces soil erosion.

7. In areas having spars and irregular rain fall, scarcity of water is a persistent problem. It cannot be completely resolved but can be mitigated through rain water harvesting . rainwater harvesting is an ideal solution to water problems in regions which receive inconsistent rainfall throughout the year.

***"Rainwater Harvesting is the best way to save earth from lack of water"***

***" Save Rain, Save Life"***

**Neha Vilas Patil**
T.Y.B.Pharm

# RAIN WATER HARVESTING

At the rate in which india populace is expanding, it said that india will definitely supplant china from its no 1 position of most thickly populated nation of the world after 20-30. These will prompt high rate of utilization of most profitable regular asset: water subsequent in enlargement of weight on the allowed freshwater assets. Old technique for damming water way & transporting water to urban zone has its own issue of everlasting inconveniences of social and political. Keeping in mind the end goal to save and take care of our day by day demand of water prerequisite, we have to think for elective savvy and generally less demanding mechanical technique for monitoring water. Rain water reparing is out standing amongst other techniques satisfying those necessities. The specialized part of these paper are water gathering gathered from housetop which is thought to be catchment territories from all lodginas and institute of management & technology Faridabad campus. Water gathering potential for the inns & workforce flats was ascertained, and the tank limit with appropriate plane is

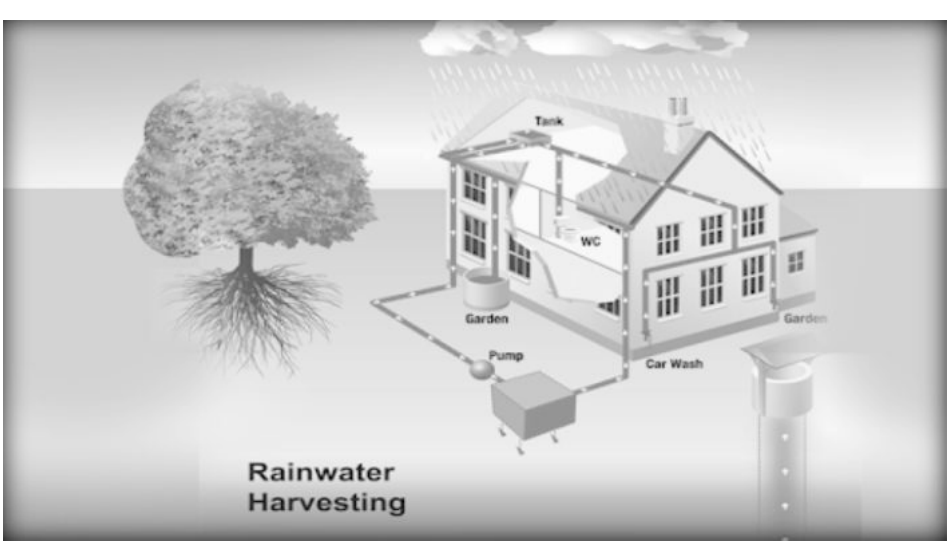
being considered. Volume of tank has been ascertained with most suitable strategy for estimation. Ideal area of tank based on hydrological investigation.

Rain is a definitive well spring of new water with the ground zone around house & structures being solidified, especially in urbancommunities & town, water which keeps running off from pations & roof tops, was depleting into lowlying territories and not permeating into the dirt consequently, valuable water is washed, as it is depleted into the ocean in the end rain water gathering is a framework by which, the water that gathers on the root tops and the region around the structure is co-ordinated into open walls through a channel tank or into a permeation load, constructed particularly for the reason. Water is gathered straight forwadly or revived into the ground to enhance ground water stockpiling water that isn't removed from ground and blustery lays is the water spared.

Water collecting and use frame work have been utilized since antiquated circumstance and conformation of rooftop catchment framework go back to early roman circumstances roman estates and even entire urban communities were intended to exploit water as the chief water hotspot for drinking and residential purpose since no less than 2000B.C. In the negev leave in tanks for putting way overflow from slopes from both local and farming purpose have permitted home and development in zones with as meager as 100mm of rain for each year. The most punctual known proof on the utilization of the innovation in Africa originates from northern Egypt, where tanks running from 200-2000 m3 have been utilized for the no less thin 2000 years numerous are as yet operational today. The innovation like wise has a long history in asia, where water gathering hones have been followed back right around 2000 years in Thailand. The little scale gathering of water from the over have of rooftops or by means of straightforward drains into convensional jugs and pots has been polished in Africa and asia for a huge no of years. In numerous remote provincial regions. This is as yet the technique utilized today the world biggest water tank is most likely the year baten sarays in Istanbul, turkey this was built amill the leal of Caesar Justinian it quantifies 140m by 10m and has a limit of 80,000 cubic meters.

Today just 2.5 for each penmy of the whole world's water in new. Which is fit for human utilization, horticulture and industry. In a few sections of the world, nonetheless, water is being utilized at a considerably speedier rate can be refilled by precipitation in 2025 the per capita water accessibility in india will be decreased to 1500 cubic meter from 5000 of every 1950, the united nations cautions that this lack of freshwater could be the most genuine snag to creating enough nourishment for a developing total populance lessening neediness and ensuring the earth. Henceforth the water shortage will be basic issue on the off chance that isn't dealt with most in its shell nut organize. Differentiating fig of H2O shortage in world between two course of events are appeared in the fig. a portion of the significant where water collecting has officially exacuted is delhi plan sixteen midel undertaking in delhi to setur water gathering structures in various settlements and Bangalore has declared a refund of for every penny on property impore for the individuals who have actualized the water collecting work in their home.

**Shital Rajendra Ingle**
T.Y.B.Pharm



# UNDERGROUND FLOOD CONTROL SYSTEM

**ABSTRACT :**

In india there is no flood control system. As we seen flood in august-2019 in Kolhapur. Region also in kerala in 2018. If there could be underground flood control system or any other flood control system, then it could be save city from flood underground flood control system (tuneel) is world's largest underground flood water diversion facility built to mitigate overflowing of the city's major waterways and rivers during rain season. This system can pump 2 lakh lit\sec of water into river or other sources and also can stored 1.5-1.6 time of water.

**INTRODUCTION :**

In india there is no any flood control system available as we seen flood 2019. In india floods affected over thirteen states in june to auctober due to heaviest rain. It was heaviest mansoon in last 25 years more than 1600 people died and about a million people were displaced.

Karnataka and Maharashtra are most severely affected states. We seen in Maharashtra the flood in aug-2019 in Kolhapur, sangli, satara, thane, palghar, region the flood in this five districts of western Maharashtra affected over 4,26 hundred thousand people about 4,00,000 people were evacuated and more than 30 people died.

India is seventh largest country by area and the second most populous country in the world. India has got freedom about 72 years ago. But til date in india there is no flood control system.

If there could be a underground flood control system or any other flood control system, then it could be save city from flood & saved those people whose died in flood.

**METHODOLOGY:-**

It consist of five concrete containment silos with height of 65m and of 32m connected by 63km of tunnels with a large water tank with height of 24.5m with a length177m with a width 78m. this large water tank is connected to 13,000 hp pumps that can pump to 2 lakh lit\sec of water into river. Or other large water source. It can be stored 1.5-1.6 tmc of water.

**Conclusion:-**

It is better to invest money one time in the solution than to let it be wasted by the flood problem every year.

**Reference:-**

www.wikipedia.com

**Sandip Nanasaheb Dake 1**
**Piyush Deelip Marathe 2**
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# RAINWATER HARVESTING – HOW LONG CAN INDIA AFFORD TO IGNORE IT?

India, which depends almost completely on the annual monsoons, currently faces the most severe water crisis in the annals of its known history. A recent report by NITI Aayog predicted that as many as 21 cities in the country will see the total depletion of their groundwater by as early as 2020.

**Cities that Rose to the Challenge :**

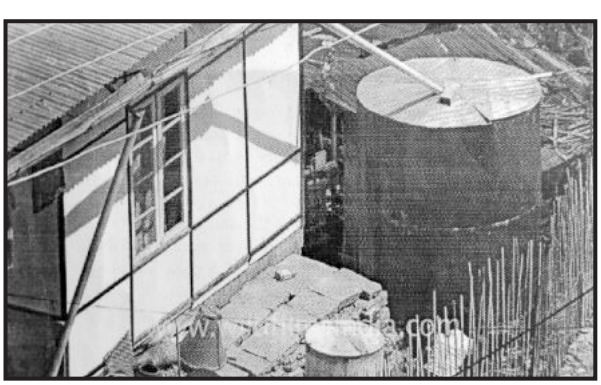
- In Bangalore, the Bangalore Water Supply and Sewerage Board(BWSSB) has mandated that every structure built on 30x40 sq ft and above and old buildings built on 40x60 sq ft above should install rainwater harvesting. In case anybody fails to do so, he/she must pay a penalty every month. Interestingly, despite its annual water woes, Bangalore gets ample rainfall.
- There even are some notable success stories. AR Shivakumar, also known as the city's 'rain man' has built a house that is completely dependent on rainwater harvested during the rains. His house 'sourabha' in Vijayanagar run on water collected in underground and overhead tanks. Shivakumar has spoken widely on the importance of rainwater harvesting and has played a big role in the establishment of the 'Sir M Visvesvaraya Rainwater Harvesting Theme Park' in Bangalore's Jayanagar area.
- (Even though Bangalore has taken strong steps to enforce rainwater harvesting, several studies still number it – right along with the notorious Cape Town –

among the 'hot zones' that may run out of water sooner rather than later.)

- **Chennai** in Tamil Nadu is among the leaders in rainwater harvesting and boasts of several successful example of water conservation.
- Rainwater harvesting is compulsory in the city, and fresh design for rainwater harvesting structures have been incorporated into the Tamil Nadu Combined Development and Building Rules, 2019. As a notable example, residents of 56 apartments of the Sabari Terrace Complex in Sholinganallur, Chennai planned, designed and implemented a rainwater harvesting structure to collect rainwater on their own terraces.
- **In Delhi,** the Ministry of Urban Development and Poverty Alleviation has made it mandatory for all new buildings on plots of 100 sq. meters and above to provides for water harvesting through storing of water runoff including rainwater.
- In rural **Maharashtra**, Shirpur – once an arid, drought – stricken area – has literally turned green due to the adoption of rainwater harvesting. Known as a green district today, Shirpur has – almost solely through the efforts of its residents – built rainwater harvesting systems and small dams to cultivate three to four crops a year.

**Getting It Done – State Level**

Major cities like Delhi, Mumbai, Bangalore, Hyderabad as well as tier 2 cities such as Chandigarh, Indore, Surat and Nagpur do have laws regarding rainwater harvesting. However, it is not good enough for such rules existing just on paper. If the concerned authorities fail to check regularly to ensure their on – ground implementation, rules for rainwater harvesting are obviously are toothless.



State government can popularise rainwater harvesting by launching awareness drives, not just in urban areas but in rural areas as well. They can promote rainwater harvesting by incentivizing housing societies that do comply, such as by offering a rebate on property tax for installing a rainwater harvesting system, severely penalize societies/ builders who don't comply.

**Getting it Done – Local Level**

As some of the above examples show, local initiative can fill the gap even if policy and legislature fail at the city and state level. Individual housing societies take up the challenge of sustaining themselves through the annual water shortage. To do this, they must gauge the average rainfall in their particular area, evaluate how much water the society typically uses and to what extent it can depend on rainwater harvesting to meet those needs, and get their own rainwater harvesting systems in place.

The size of an underground tank will depend on the following factors :

- Number of family members in the society
- Per capita water requirement
- Average annual rainfall
- Period of water scarcity to ensure even distribution of water throughout the year

**Rainwater Harvesting in Rural Areas**

Rooftop rainwater harvesting is among the most common solutions in rural areas as it is a basic, inexpensive method requiring minimum expertise for implementation. In this method, rainwater is collected on the roof and carried to a storage tank from where it goes to the point of consumption. This technique is ideal for supplementing existing water sources which may become brackish or polluted.

Other method of rainwater harvesting in rural areas include the gully plug and contour bund method, as well as Gabion structures and percolation tanks.

**Water Shortages WILL Get Worse**

It is said that World War III will not be fought for geographic dominance but solely on the basis of water. This may sound far – fetched to citizens of more developed countries. However, in india there are already daily battles being waged by areas, projects and individuals for access to this precious resource during summers. The conflict potential Is indubitably high.

In such a scenario, state government and local bodies must enforce rules on compulsory rainwater harvesting, and impose hefty penalties for non-compliance. This cannot happen too soon – it must happen now, or india will eventually lose its own Water Wars.

**Reference :**

https://www.moneylife.in/article/rainwater-harvesting-how-long-can-india-afford-to-ignore-it/57468.html

**Mrs. Kranti D. Patil**
Asst.Prof (Pharmacognosy)

# RAINWATER HARVESTING

A Concept to utilize the Rainwater And secure the Future

Rainwater harvesting is the simple collection or storing of water through scientific techniques from the areas where the rain falls. It involves utilization of rain water for domestic or agriculture purpose. It is not just a process of collecting, moving and stoaring of rainwater but also utilizing the soil which is wasted during soil erosion and for developing new techniques of generating electricity. The goal of this project is to utilize energy stored in rainwater to provide power to which are situated in regain affected by power outs. This can be achived by making use of structured disposal pipeline systems.

Rainwater harvesting has been practiced for more than 4000 years owing to temporal and spatial variability fast production demands fast utilization of resources. One of major resources is electricity. we are now largely dependant on the extraction of power from non-conventional, renewable sources of energy.

High rainfall region can also utilize the rain to generate the power on the basis of

Turbine :

It is a rotatary mechanical device that extracts energy from fluids flow and convertes it into useful work. The work produced by a turbine for generating electrical power when combine with generator. Turbines are mainly of two types. Reaction Turbine and Impulse Turbines. Impulse turbines is most commonly utilized at the Industrial level. The fluid flows smoothly on to the blades of Impulse turbines and hence it has high efficacy as compared to the Reaction Turbine.

Piezoelectric Generators :

The piezoelectric effect is discovered and studied by the scientist from CEA/Leti – Minoetc an R and D institute in Grenoble france, specializing in microelectronics have recently developed a system that recovers the vibration energy from a piezoelectric structure impacted by a falling Raindrop.

The raindrop which is falling from the sky is accelerated along the motion. At this time the Drag force offered by air increases as its velocity. At a certain point the drop experiences equillibrium and drop continues to fall with a constant speed called as terminal velocity. This is the kinetic energy of the drop which gets converted into electrical energy. The piezoelectric device which convert the vibratory energy to electrical energy are made up of PVDF (Poly vinyl dene difluride) and lead zirconate titanate. The ability to convert vibratory energy into electrical energy is depend on crystalline structure electrode embended in PVDF are used to recover the electrical charges generated by vibrations.

Ideal Solution to water problem in areas having inadequate water resources. Improvement in quality of ground water. The water harvesting system can be considered as an alternative to power system in rainy outdoor environment where solar energy difficult to gathered. This is also the clean source of energy with zero pollutant emissions. The water gathered by rain water harvesting can be utilized for irrigation.

**Harsha Pawar**
**Ganesh Patil**
T.Y.B.Pharm

# RINWATER HARVESTING : STEP TO AVOID WASTAGE OF WATER

Water is a natural resource, fundamental to life, livelihood, needed for sustainable development and food security. The presence of absence of water clearly determines the culture and growth of community and healthy economy.

Rain is the only source of fresh water in india. Overall, the percentage of water recharges into ground is about only 5-20%. Therefore, we need to conserve and harvest this precious gift of nature.

The most important queries that play on the mind of people are, what is Rainwater harvesting? What are the benefits? How much does it cost?

RAINWATER HARVESTING is the collection of rain water into the man made resources or any natural resource like ponds, lakes etc. We can store it in tanks or can use it to recharge underground. It is productively used for:

- Irrigation
- Domestic and livestock consumption
- Groundwater recharge
- Helps in reducing the insecurity of households in rural areas.
- It helps in controlling urban flooding if people do rainwater harvesting from rooftops.
- Recharge of rainwater to ground prevents sea water immersion into the fresh water bodies in the coastal bodies.
- It helps in reducing the water supply bills

especially to the institutions.

RWH- yield copious amounts of water. For an average rainfall of 1000 mm, approximately four million litre of rain water can be collected in a year in an acre of land 4047m2 , post evaporation.

As RWH is neither energy intensive nor labour intensive and with the water table falling rapidly and concrete surface and landfills dumps taking the place of water bodies, RWH is the most reliable solution for augmenting groundwater level to attain self – sufficiency.

Rainwater Harvesting during DROUGHT : Several parts of country are witnessing serious droughts. The result is acute drinking water shortages in Gujarat, Rajasthan, western Madhya Pradesh, Orissa and Andhra Pradesh. According to newspaper reports, several towns in Saurashtra are getting an extremely irregular supply of water. Hence Rainwater harvesting is useful in such droughts.

THE JAL SHAKTI ABHIYAN : Govt's water conservation campaign to cover 256 districts across nation. Inspired by Hon'ble Prime Minister that will run in two phases i.e. July 1 - September 15 and phase 2 from October 1 – November 30.

The most important aspects of Abhiyan are – water conservation, rain water harvesting renovation and other water bodies reuse of water and recharging structure, water shed development, intensive deforestation.

Tamil Nadu is one of the first state of india where rain water harvesting is mandatory. Till now, approximately, 4000 of temples in the Tamil Nadu have rain tanks serving at various rituals in temples and in recharging the groundwater.

***"A drop of water is worth more than a sack of gold to a thirsty man."***

***"SAVE WATER, SAVE LIFE"***

**Salony Ghanshyam Agrawal**
F.Y.B.Pharm

## RAINWATER HARVESTING

Rain water harvesting is the collection of rainwater into the man made resources or any natural resources like pand lake two main techniq use of rainwater harvesting are storage for future use and rechang into ground. It can be used for crop harvesting. Gardening etc. following are the benefits of rain water harvesting at individual or city – wide level.

Rainwater recharged to the ground positively affects groundwater quality by ailuting fluorids. Nituates and its salinity.

It containe almost neutral ph and zero haraness which makes it more able to be used in homes. Industries. Institutions and other commericial establishments reduce the strees of public water supply sources.

Recharge of rainwater to the ground R prevents sea-water immersiation into the fresh water bodies in the coastal areas.

It helps in controlling urbon flooding if people do rainwater harvesting from rooftops.

Tamil Nadu is one of the states of india and now has first Indian state where rainwater harvesting has been mandatory tamil nadu has declared on 30th of may 2014 to establish around 50000 rainwater harvesting structure at various places in the Chennai 4000 temples in tamilnadu have rain water tanks serving at various rituals in temples and help in recharging the groundwater.

**Aishwarya Ganesh Patil**
F.Y.B.Pharm

## RAINWATER HARVESTING

O Rain! You're a wonder gift!
You give our lives a healthy lift.
You are so pure, free and soft,
You pour water to us who starve
Water is now very scarce,
Safe and clean is very rare.
So we collect rain and stare,
For use when we need more
Collecting rainwater is easy
And cheap, but not for the lazy!
We can just collect every drop
That falls on our rooftop.
Rainwater is safe and sound;
It improves water under the ground
Let us harvest it to end our sorrow
And save it for a better morrow

**Vaishnavi Ramkrishna Patil**
F.Y.B.Pharm

# RAINWATER HARVESTING

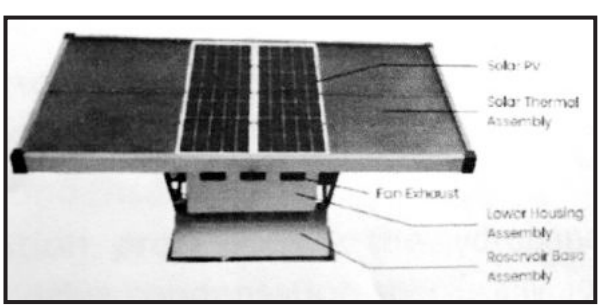
At the rate in which india population is increasing, its said that india will surely replace china from its number. I person position of densely populaleted contry of the world after 20-30. This will lead to the high rate of consumption of most valuable natural resource "Water" is resulting in augmentation of pressures on the permitted freshwater resources. In order conserve and meet our daily demand of water requirement, we need to think for alternation cost effective and relatively easier technology methods of the conversing water.

Rain water harvesting is the one of the best methods fulfilling those requirements. Rainwater harvesting is the acculmulation and deposition of the rainwater for reuse before it reaches the aquifer, uses includes water for garden water for livestock, water for irrigation et. In many places the water just collected is just radiated. To deep pit with percolation. The harvested water can be used as drinking water. As well as for storage for other purpose. Millions of people thoughout the world drinking water have basic necessity.

After decades of work by governments and organizations to bering potable water to the poorer. People of the world, the situation is still dire the reasons are many and varied but genrally speaking, the poor of the world cannot afford, the capital intensive and technically complex. Traditional water supply system which are widely promoted by governments and agencies throughout the world, Rainwater harvesting (RWH) is an option that has been adopted in many area of the world where conventional water supply systems have failed to meet people's needs. Its technique that has been used since antiquity.

Don't water go waste. Water ground raise ground level and reduce the soil erosion. Rainwater harvesting is the technique of the collection and storage of rainwater into the natural reservoirs or tanks, or the infilation of surface water into subsurface aquifers others use of rainwater harvesting for gdrdens and, livestock, irrigation.

# SOLAR ENERGY USED TO PULL DRINKING WATER FROM AIR




Water scarcity is a particular severe challenge in world. As per report addressed by WHO, millions people loss their life every year due to water related diseases. To resolves the water scarcity we need to focus on water conservation as well as water management techniques instead of traditional techniques. Day by day groundwater level decreased. The technology we can used to water management is completely eco-friendly and based on solar energy. Solar energy is used to pull drinking water from atmospheric air without consumption of electricity. Adequate moisture is available in the surrounding atmosphere. As per data estimated by lab of zero mass water company, the population of world's can get assess of pure water for nearly 15000 years. If asked, most of people will say that drinking water can come from reservoir, lakes, rain and in recent years through desalination even the secret. The latest tech innovations prove that now water can also come with thin air. The mechanism is involve to say the least solar is beyond photovoltaic and thermal it has now used into water production. Hydropanal works on solar photovoltaic cells, material science and other cutting edge technology, which can work out at ground level or altitude. The main concept of this idea is to pull drinkable water using sunlight and air without harm to nature by using hydropanal.

# HOW TECHNOLOGY WORKS?

- The hydropanel converts the sunlight into energy that heats sponge like material inside
- That creats condensation
- The conversation process inside the hydropanel raises the dew point to drive condensation specifically for water
- Next the water is flow through mineral block that adds calcium and magnesium this enhance the purity and it is perfect combination of electrolytes
- An integrated air filters keeps debris from finding their way into hydropanel
- Water store in your reservoir is protected by an integrated sterilization system keeping the environment inside the reservoir clean and your water quality pristine
- It is then directly pumped to water tap

**Bhagyashri Dileep Kankhare**
F. Y. B.Pharm

# RAINWATER HARVESTING

Rainwater Harvesting is one of the most commonly used methods to save water. It refers to storing of rainwater for various uses. The nation behind rainwater harvesting is to not waste the rainwater and prevent it from running off. In other words, it is done to collect rainwater using simple mechanisms. This method is very useful considering the water scarcity that is happening in india more over rainwater harvesting is so easy that almost anyone can do it we must encoulage this plactise to help people get access to clean water easily without any cost.

As we know by now, rainwater harvesting is very easy and economical following the water saracity in so many parts of the world, rainwater harvesting has become the need of the hour it must be practiced by people of all regions. This will also give them a sense of comfort in knowing that they won't have to face water scarcity furthermore, rainwater harvesting holds more importance than you actually think it does. As we know that surface water is not enough to meet the demands of the people, we can get additional help from rainwater also, most people now depend on ground water for their uses. Many house and even flats have submersible pumps in their place. The ground water is decreasing day by day because of excessive usage, deforestation, urbanization and more. Thus, when we practice rainwater harvesting, it can maintain the level of the groundwater. That way, we all can make use of ground water as it will keep on replenishing through rainwater harvesting moreover, rainwater harvesting prevents water from logging on roads. It also reduces the chance of soilerosion most importantly, rainwater harvesting improves the quality of water which we consume, as it is the purest form of water.

Rain water harvesting is very simple method that can be practiced by anyone there are primarily two type of rainwater harvesting methods. The first one is surface run off harvesting. In this method, the water that runs off the surface is focused on we see how the surface runoff causes a lot off loss of water how ever, if we make proper arrangements, we can see save that water to use for various purposes. In this method, we can collect the surface runoff water by making a path that directs to a storage space like a tank or pond this can help store water in large amount which can be used later for a lot of work. Everyone can design on efficient system which will collect large amounts of water from roads, gardens, parks and more. It will definitely be enough to sustain a community and even a city is designed on a larger level.

**Sakshi Dipak Patil**
F.Y.B.Pharm

## सुविचार

पर्यावरणाची निगा राखणे हे सध्याच्या काळात अतिशय महत्वाचे आहे. कारण पर्यावरणाचा तोल जर ढासळला तर मानवी जीवन धोक्यात येईल.

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कापडी पिशवी घरोघरी,
पर्यावरण चे रक्षण करी.

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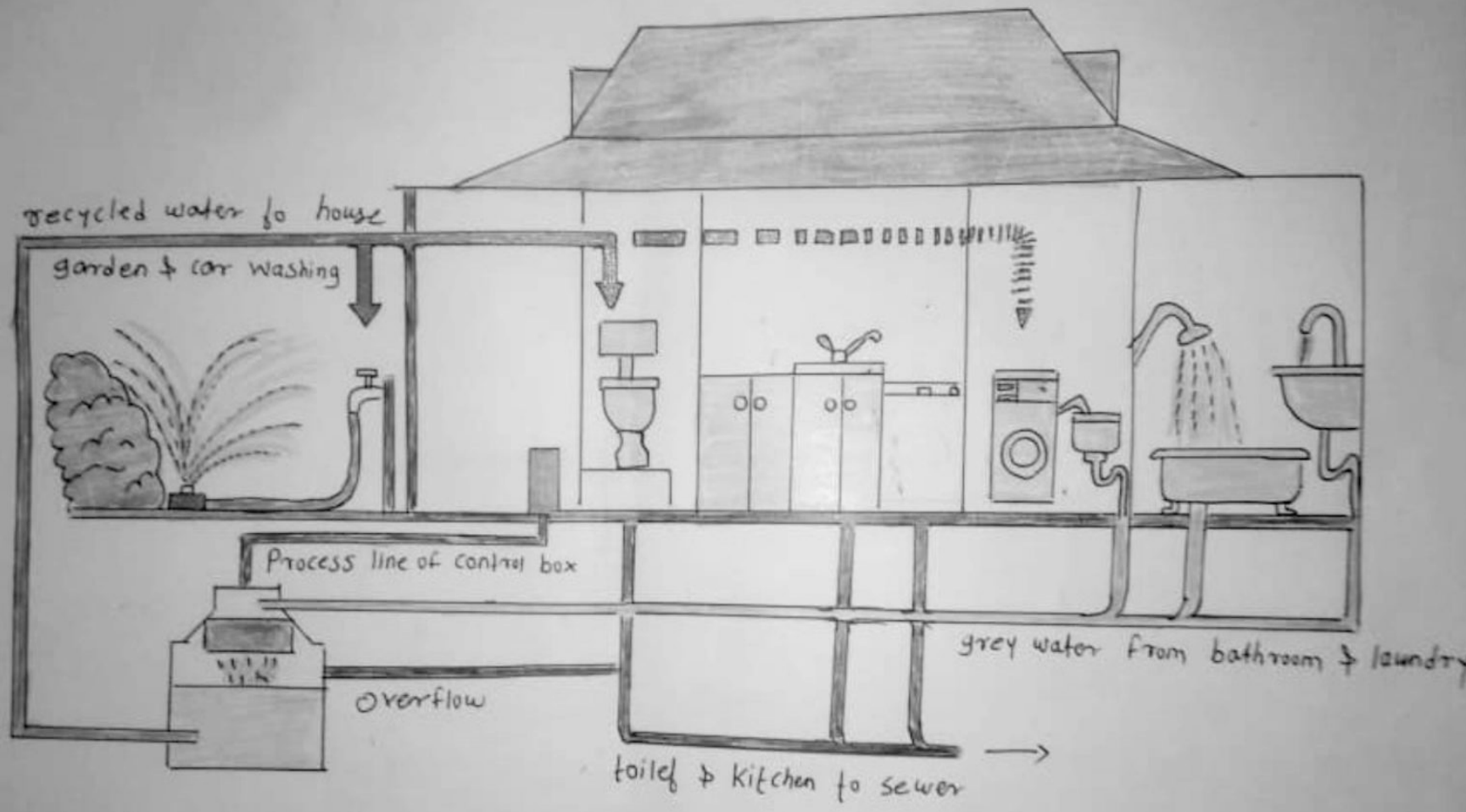
**पृथ्वी रक्षण: या वाचवू वसुंधरा...**
सतत टिपटिपणारे नळ बंद करून, गरज नसताना दिवे-पंखे बंद करून अनेक जण आपल्या परीने ऊर्जा-पाणी बचतीला हातभार लावत असतात. काही जण यापुढे जाऊन ओल्या कचऱ्यापासून

- सामाजिक बांधिलकी, निसर्गासाठी कटिबद्धता वृक्षारोपणाची चळवळ
- फक्त वृक्षारोपण नको, जतनही हवे!
  कचरा वर्गीकरणाचे धडे
- शून्य कचरा चळवळ
  काळ्या मातीला सोनेरी खत
  कापडी पिशव्यांचे वाटप
  प्लास्टिक संकलनाची गोष्ट
  कॅमेरातून टिपली जंगल अधिवासाची चिन्हे
- जैवविविधतेसाठी कॉलेजियन्सची साथ
- इंधनबचतीचा सायकल फॉर्म्युला

# GREY WATER SYSTEM




NAME PATIL ROHT SHIVCHARAN

# FUTURE OF WATER : FROM DRAIN TO DRINK

Our world's resources are not infinite. Water often seems to be abundant in nature, but humanity is actually putting a great pressure on the available surface and groundwater water supplies. Water is critical to human health, strength and security yet the solutions available to manage water and its availability and quality are often complex. Our failure to conserve our water supply is causing droughts, dust storms, and other environmental problems that hurt both humanity and nature.

According to UNESCO's World Water Assessment Programme report, 2020, the climate is changing and will continue to change, affecting societies mainly through water. Climate change will affect the availability, quality and quantity of water for basic human needs. Thus this situation warrants utilities and humanity to ensure optimal use of available water resources also addressing the social, economic and commercial considerations. Institutionalizing the reuse of treated wastewater can help utilities in addressing this challenge in an effective manner. This can be achieve by increasing the efficiency of water use and to expand the usefulness of alternative sources of water preciously considered unusable. Among these potential new sources of supply is grey water which is the slightly dirty water. Grey water gets its name from its cloudy appearance and from its status as being between fresh, potable water (known as "white water") and sewage water ("black water"). Grey water is wastewater from showers, baths, washbasins, washing machines and kitchen sinks.

Water recycling, also known as reuse or reclamation, is not a new concept to world, nonpotable (not for drinking) water recycling systems have been in place for decades. Reuse of reclaimed water is well established in many countries. Like inn Texas and Nevada, and rainy states, such as Florida and Virginia of United States of America, municipal wastewater is collected and treated to an extent that doesn't meet drinking water standards, but is approved for certain uses that don't involve human contact, such as agriculture, landscaping and golf course irrigation. In Windhoek, Namibia, reclaimed water is used as the main source of potable water. Globally, reclaimed water is primarily used for non-potable uses. Today developed countries, due to increasing drought conditions and groundwater depletion, nonpotable uses are expanding. Municipalities are figuring out more ways to treat sewage less like waste and more like a resource. The best examples are Singapore and Beijing.

Singapore's success in using treated wastewater (referred to as NEWater) for industrial supply is a good case in point and is relevant to this context. Singapore imports water from Malaysia, and has very limited sources of water within its boundaries,, Since 1958, the country has consistently sought to improve its water security by improving rainwater harvesting and through Reuse of treated wastewater. NEWater plants use an advanced treatment process. The quality of NEWater meets the standards of freshwater from the catchment lakes.

Beijing has actively invested in water reuse projects since from 2008 and as a result, reclaimed water accounted for approximately 22% of total water supplied in 2014. Beijing has developed a wastewater reuse network that includes many treatment plants with capacities ranging from 60 kilolitres per day (KLD) to 60 MLD. The larger plants are owned and operated by the local government.

**Experience in India**

India is not behind in doing recycling of water. Chennai petroleum Corporation Ltd (CPCL) built a wastewater reuse plant in 1991. However, the idea did not grow in mainstream for several reasons:

- There is no clear policy environment to encourage and support reuse projects.
- With low sewerage network coverage and insufficient Sewage Treatment Plant (STP) capacity, there hasn't been much Secondary Treated Water (STW) available for reuse.
- STW is being used for agriculture in many places. Redirecting STW for industrial reuse may face opposition from the public.
- Most cities apply a differential tariff for domestic and industrial water consumers, with the industrial tariff significantly higher than the domestic tariff. Revenue from industrial water supply, in such cases, is used to cross subsidies cost of supplying water to households. By switching to reclaimed water, utilities will have to forego some of this additional revenue
- Surplus freshwater availability in some smaller cities and towns has made utilities complacent and over dependent on freshwater sources.

These conditions that held back the development of reuse of reclaimed water are fast changing. The Government of India has emphasized reuse of reclaimed water in many urban development schemes such as

Atal Mission for Rejuvenation and Urban transformation (AMRUT), Swachh Bharat Mission, Smart Cities Mission and The Namami Gange programme.

**Water Recycling**

Water recycling refers to strategies to reuse water

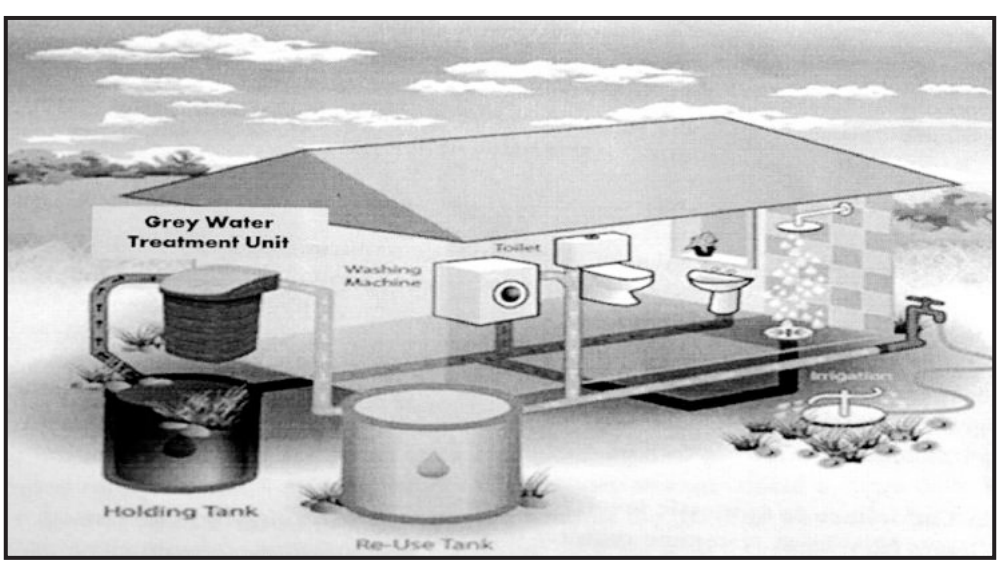
beneficially to reduce the use of available natural water resources. Every drop of water that we recycle is a drop that we don't have to take from our limited water resources. At the simplest level, water recycling can mean harvesting rainwater in a barrel. More complex systems collect grey water.

Right now, most people think of water recycling as an optional activity. People who care about the environment will do it but must other people are quite content to ignore the issue. That is likely to change in the future. The demand for water is directly connected to both the number of people in the world and the standard of living that they want to maintain. According to a survey, by the time in 2050, the world's population will have grown by an estimated 2 billion people and global water demand could be up to 30% higher than today. So the demand for water is not going to drop any time soon. The developing world is also getting richer, and the increased desire for luxury products will keep increasing the amount of water that gets diverted to industry and inefficient forms of agriculture. Our purification technology is also improving. That will make water recycling even easier in the future, both on a large scale and at a personal level. That makes it seem likely that water recycling will play a large role in most water management systems in the future, especially if more people get started with it now.

**Can Water be recycled at domestic level?**

Yes, water can be recycled at domestic level too. In cities many housing societies recycles water and uses that water for suitable cause. Recycling grey water not only reduces the consumption of water, it also reduces the volume of water discharged into the sewerage system. Consumers with water meters could therefore save money on both their water supply and wastewater bills.

There are many companies who professionally installs and sales grey or black water recycle plant. Even some companies offer customized, tailor made water recycle plant as per customer needs. At domestic level i.e. for single house grey water treatment plant can be design without any professional help. One need to be innovative and ready to do some pipe fitting. Some tips and guidlines for grey water treatment at domestic level are discussed below in this article.




**Picture showing Basic Grey Water Treatment Concept at domestic level**

**Benefits of Grey Water Treatment**

There are many benefits of grey water recycling could be summarized as follows:

**Lowering the fresh water use**

Grey water can replace fresh water in many instances, saving money and increasing the effective water supply in regions where irrigation is needed. Residential water use is almost evenly split between indoor and outdoor. All except toilet water could be recycled outdoors, achieving the same result with significantly less water diverted from nature.

**Less strain on septic tank or treatment plant**

Grey water use greatly extends the useful life and capacity of septic systems for municipal treatment system by decreasing the wastewater flow which in turn means higher treatment effectiveness and lower treatment cost.

**Less energy and chemical use**

Less energy and chemicals are used due to the reduced amount of both freshwater and wastewater that needs pumping and treatment. For those providing their own water or electricity, the advantage of a reduced burden on the infrastructure is felt directly. Also, treating your wastewater in the soil under your own fruit trees definitely encourages you to dump fewer toxic chemicals down the drain.

**Highly effective purification**

Grey water is purified to a spectacularly high degree in the upper, most biologically active region of the soil. This protects the quality of natural surface and ground waters.

**Groundwater recharge**

Grey water application in excess of plant needs recharges groundwater.

**Plant growth**

Grey water enables a landscape to flourish where water may not otherwise be available to support much plant growth.

**Reclamation of otherwise wasted nutrients**

Loss of nutrients through wastewater disposal in rivers or oceans is a subtle, but highly significant form of erosion. Reclaiming nutrients in grey water helps to maintain the fertility of the land.

**Grey Water recycling Health concerns**

Health risks are often cited by regulators as reasons for requiring high-tech expensive systems although there are no recorded instances of grey water transmitted illness. However, grey water may contain infectious organisms. Bear this in mind when designing and using a system. A poorly designed system could become a pathway for infecting people. There are two main principles considered for safety as follows:

1. Grey water must pass slowly through healthy topsoil for natural purification to occur.
2. Design your grey water system so no grey water-to-human contact occurs before purification (i.e. passing through the soil or mulch basin).

**Basic Greywater Guidelines at domestic level :**

Greywater is different from fresh water and requires different guidelines for it to be reused.

1. **Don't store greywater** (more than 24 hours). If you store greywater the nutrients in it will start to break down, creating bad odors.
2. **Minimize contact with greywater.** Greywater could potentially contain pathogen if an infected person's feces got into the water, so your system should be designed for the water to soak into the ground and not be available for people or animals to drink.
3. **Infiltrate greywater into the ground, don't allow it to pool up or run off** (knowing how well water drains into your soil(or the soil percolation rate of your soil) will help with proper design. Pooling greywater can provide mosquito breeding grounds, as well as a place for human contact with greywater.
4. **Keep your system as simple as possible, avoid pumps, avoid filters that need upkeep.** Simple systems last longer, require less maintenance, require less energy and cost less money.
5. **Install a 3-way valve** for easy switching between the greywater system and the sewer/septic.
6. **Match the amount** of greywater produced to your plants will receive.

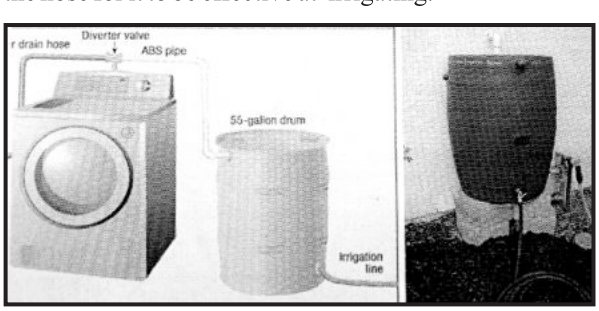
**Types of simple Systems:**

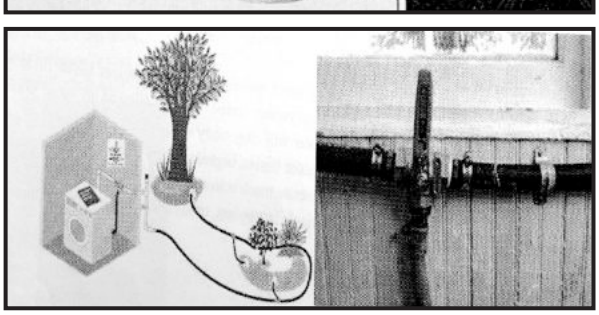
**From the Washing Machine**

Washing machine are typically the easiest source of greywater to reuse because greywater can be diverted without cutting into existing plumbing. Each machine has an internal pump that automatically pumps out the water-you can use that to your advantage to pump the greywater directly to your plants.

**Laundry Drum :**

A laundry drum system is recommend for people who don't want to invest much money in the system (suitable for rented homes), or have a lot of hardscape (concrete/patio) between house and the area to irrigate. Wash water is pumped into a "drum," a large barrel or temporary storage called a surge tank. At the bottom of the drum the water drains out into a hose that is moved around the yard to irrigate. This is the cheapest and easiest system to install, but requires constant moving of the hose for it to be effective at irrigating.



**Laundry-to-Landscape:**

System that gives flexibility in what plants going to irrigate and takes very little maintenance then laundry-to-landscape system is recommend. This system was invented by Art Ludwig.

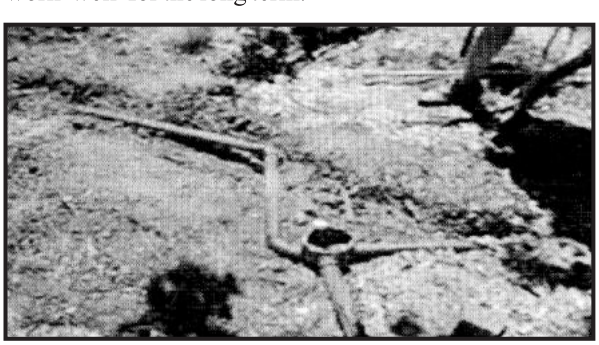
This greywater system doesn't alter the household plumbing : the washing machine drain hose is attached directly to a diverter valve that allow you to switch the flow of greywater between the sewer/septic and the greywater irrigation system. The greywater irrigation system directs water through 1 "tubing with ½" outlets directing water to specific plants. This system is low cost, easy to install, and gives flexibility for irrigation. In most situation this is the number one place to start when choosing a greywater system!

**From the Shower :**

Showers are great source of greywater. They usually produce a lot of relatively clean water. To have a simple, effective shower system, consider a gravity-based system (no pump). If yard is located uphill from the house, then only need to have a pumped system.

**Branched drain :**

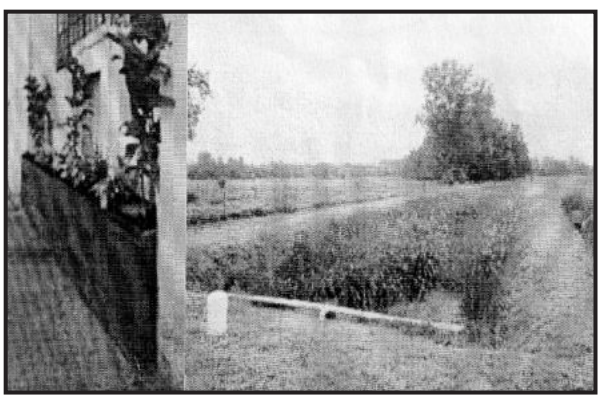
The branched drain system was also invented by Art Ludwig. Greywater in this system flows through standard (1 ½" size) drainage pipe, by gravity, always sloping downward at 2% slope, or ¼ inch drop for every foot traveled horizontally, and the water iss divided up into smaller and smaller quantities using a plumbing fitting that splits the flow. The final outlet of each branch flows into a mulched basin, usually to irrigate the root zone of trees or other large perennials. Branched drain systems are time consuming to install, but once finished require very little maintenance and work well for the long term.



**From the Sinks :**

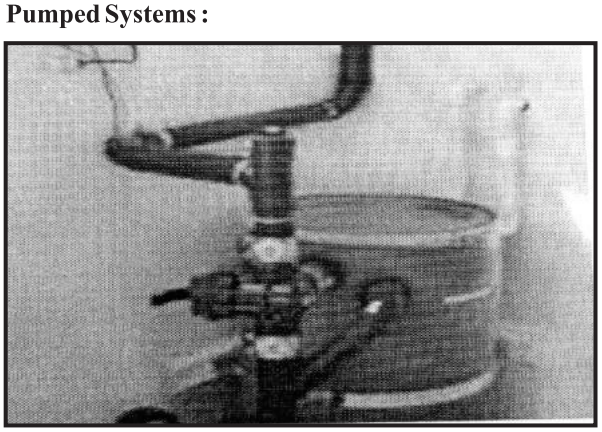
Kitchen sinks are the source of a fair amount of water, usually very high in organic matter (food, grease, etc.). kitchen sinks are not allowed under many greywater codes, but are allowed in some states, like Washington, Oregon, Arizona, and Montana. This water will clog many kind of systems. To avoid clogging, we recommend using a branched drain system with mulch basins, organic matter collects in the woodchips and decomposes. Since bathroom sinks don't typically generate much water, they can often combine flows with the shower water. Or, the sink water can be drained to a single large plant, or divided to irrigate two or three plant.

**Constructed Wetlands :**



Constructed wetlands are used to "ecologically dispose" of greywater. If you produce more greywarter than you need for irrigation, a constructed wetland can help use up some extra greywater. Wetlands absorb nutrients and filter particles from greywater, enabling it to be stored for longer or sent through a properly designed drip irrigation system (though more filtration and pumping is also required). Greywater is also a good source of irrigation for beautiful, water loving wetland plants. If you live near a natural waterway and don't have anywhere else to direct greywater, a wetland can safely clean and soak-up greywater, protecting the creek. If you live in an arid climate, or are trying to reduce your fresh water use, we don't recommend incorporating wetlands into greywater systems as they use up a lot of the water which could otherwise be used for irrigation.

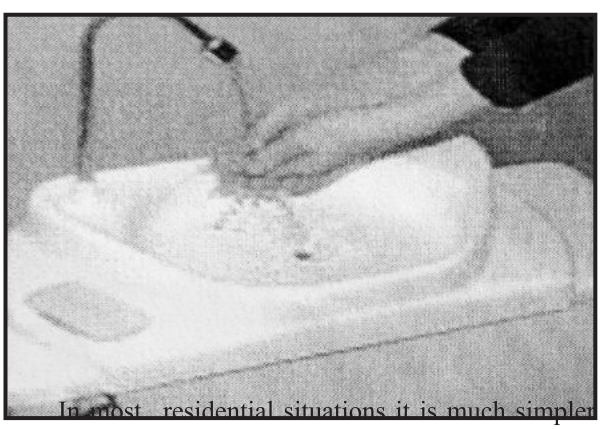
**Pumped Systems :**



If you can't use gravity to transport the greywater (your yard is sloped uphill, or it's flat and the plants are far away) you will need to pump greywater uphill. In a basic pumped system greywater flows into a large (usually 50 gallon) plastic barrel that is either buried or located at ground level. Inside the barrel an effluent pump pushes the water out through irrigation lines (no emitters) to the landscape. Pumps add cost, use electricity, and will break, so avoid this if you can.

**Indoor greywater Use**

**Sink Positive toilet lid**



In most residential situations it is much simpler and more economical to utilize greywater outside, and not create a system that treats the water for indoor use. The exceptions are in houses that have high water use and minimal outdoor irrigation, and for larger buildings like apartments.

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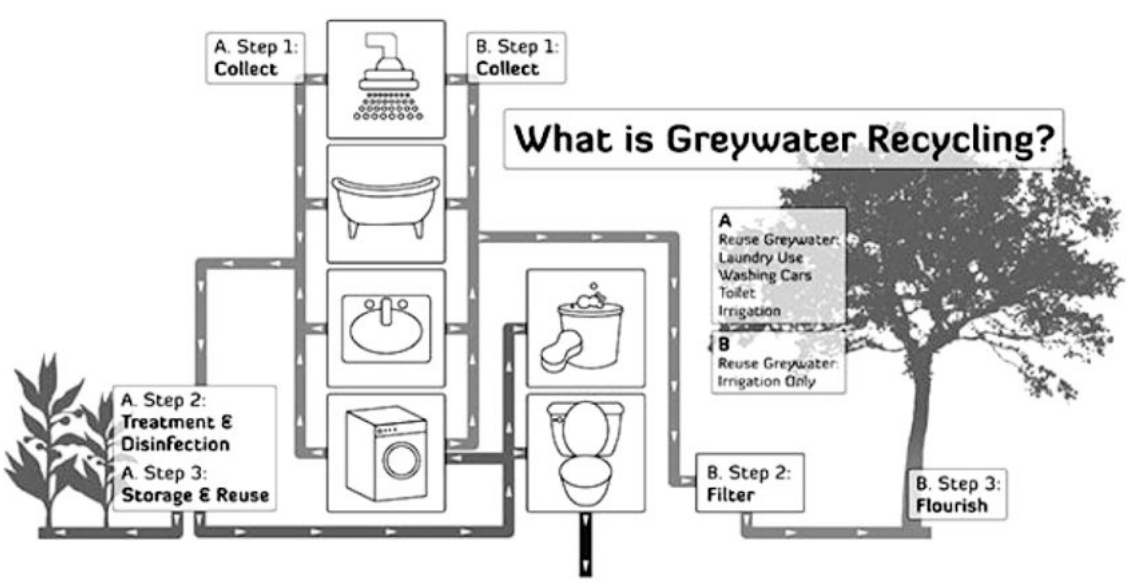

# GREY WATER

**Introduction:-** Grey water or sullage is all the wastewater generated in households or office buildings from streams without fecal contamination i.e. all streams except for the waste water from toilets. Sources includes sinks, showers, bath, washing machines or dishwashes. Grey water contains fever pathogens it is generally safer to handle and easier to treat and reuse.

- **Quality -** Grey water usually contains some traces of excreta and therefore not free of pathogens. Excreta comes from washing the anal area in the bath and shower or from the laundry.
- **Quantity –** In households with conventional flush toilets, grey water makes up about 65% of the total wastewater produced by that household. It may be good source.
- **Practical aspects -** Biological systems such as constructed wetlands or living walls and bioreactors or more wmpact system such as membrane bioreactors which are a variation of the activated sludge process and is also used to treat sewage.

Mechanical systems such as sand fill rahon, lava filter systems and systems based on UV radiations.

- **Reuse –** Global water resource supplies are worsening. According to a report from the United Nations, water shortages will affects 2.7 billion people by 2025, which means lout of every 3 people in the world will be affected by this problem.
- **Benefits -** Benefits of grey water recycling include

1) Reduced freshwater extraction from rivers and aquifers.
2) Less impact from septic tank and treatment plant infrastructure.
3) Reduced energy use and chemical pollution from treatment.
4) Groundwater recharge.
5) Reclamation of nutrients.

- **Important points –**

**1) United states –** Government regulation governing domestic grey water use for landscape irrigation is still adeveloping area and continues to gain wider support as the actual risks and benefits are considered and put into cleaver perspective.

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# TREATMENT OF GREY WATER

Greywater reuse methods can range From low cost methods such as the manual bucketing of greywater from the outlet of bathroom, to primary treatment methods that coarsely screen oils, greases and solids from the greywater before irrigation via small trench systems, to more expensive secondary treatment systems that treat and disinfect the greywater to a high standard before using for irrigation. The choice of system will depend on a number of factors including whether a new system is being installed or a disussed wastewater system is being converted because the household has been connected to sewer.

- Components of Greywater treatment system :-

A number of technologies have been applied for greywater treatment worldwide varying in both complexity and performance.

The following in general greywater system considered – a) primary treatment – pre - treatment to secondary treatment.

1. Screening, 2. Equalization

b] secondary treatment :-

1. Gravel filtration, 2. Sand filtration, 3. Chlorination

## Treatment Options

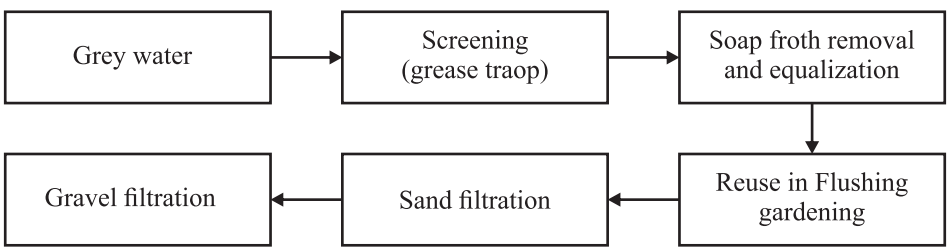
- **Anaerobic**
  - 1. Upflow anaerobic sludge blanket reactor
  - 2. Anaerobic filter
  - 3. Septic tank
  - 4. Anaerobic ponds
- **Aerobic**
  - 1. Filters
  - 2. Oxidation pands
- **Anaerobic Aerobic**
  - 1. Septic tank + oxidation ponds

**Household level Greywater Treatment and Reuse system :-**

In water scarce areas, with specific treatment can be cleaned and reused not only for gardening but for other use also

- **Technological process –**

Greywater treatment process at the household level mainly involving screening (grease and silt removal), soap Froth removal. Equalization and filtration flow diagram of household based greywater treatment system.




**Advantages –**

- Reduse fresh water requirement
- Prevents greywater stagnation
- Prevents vector breeding
- Use of greywater in gardening
- Use in flushing toilets to make toilets functional
- Minimal risk to users of greywater as it incorporates of water safety.

**Application – household**

**Action –**

Individual household may construct and operate this system.

**Description :-**

A three stage greywater filtration system at household level having following components may be constructed
Inlet pipe - 63mm (2 inch) PVC pipe inlet
Chamber : 30 cmx30 cmx10 cm

**Conclusion –**

The benefits of greywater recycling include : reduced use of freshwater, less strain on septic tank or treatment plants, more effective purification, Feasibility for sites unsuitable for a septic tank, reduced use of energy and chemicals, Goundwater recharge, plant growth, reclamation of nutrients, increased awareness of and sensitivity, to natural cycles. Saving water per day in residential school (ashrams)/hostel of so children. Saving of drinking water by reuse of grey water. Grey water reuse for toilet flushing and gardening.

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# TREATMENT ON GREYWATER

Grey water or sullage is all wastewater generated in household or office buildings from streams without fecal contamination, i.e. all streams except for the wastewater from toilets.

**Sources -**

Sources of greywater include Sinks, Shower, baths, clothes washing machines or dish washers. As greywater contains fewer pathogens than domestic wastewater, it is generally safer to handle and easier to treat and reuse onsite for toilet flushing, landscape or crop irrigation and other non-potable uses.

**Application -**

1) The greywater reuse in urban water systems provides substantial benefits for both the water supply subsystem as well as the waste water subsystems.
2) Treated greywater has many was uses, ffor eg. Toilet flushing or irrigation.
3) It may be a good sources of water for reuse, because there is a close relationship between the production of greywater and the potential demand for toilet flushing water.

**Treatment Processes –**

The separate treatment of greywater falls under the concept of source separation which is one principle commonly applied in ecological sanitation approaches.

The main advantage of keeping greywater separate from toilet wastewater is that the pathogen load iis much reduced and the greywater is therefore easier to treat and reuse.

When greywater is mixed with toilet wastewater, it is called sewage or black water and should be treated in sewage treatment plants, which often is a septic system.

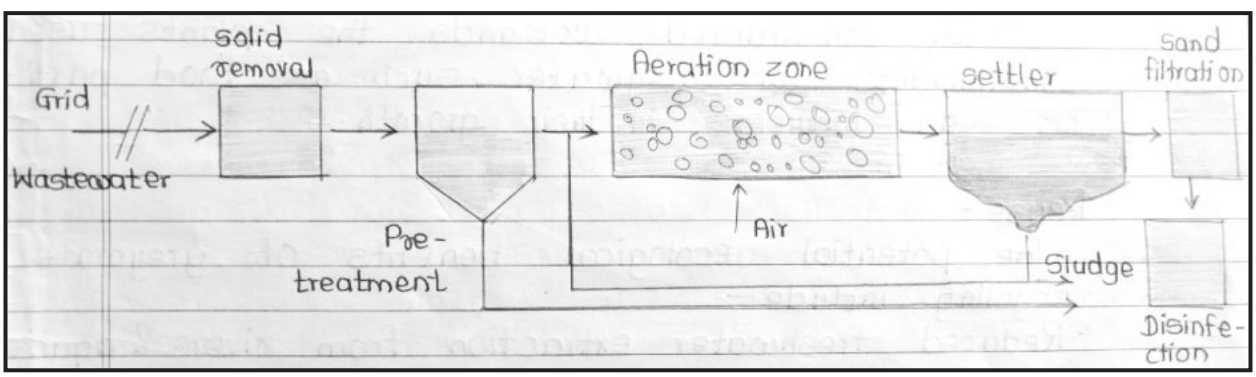
Greywater from kitchen sinks contains fats, oils and grease and high loads of organic matter. It should undergo preliminary treatment to remove these substances before discharge into a grey water tank.

Most greywater is easier to treat and recycle than sewage because of lower levels of contaminants. By using a separate plumbling system from greywater can be recycled directly within the home, garden or company and used either immediately or processed and stored.

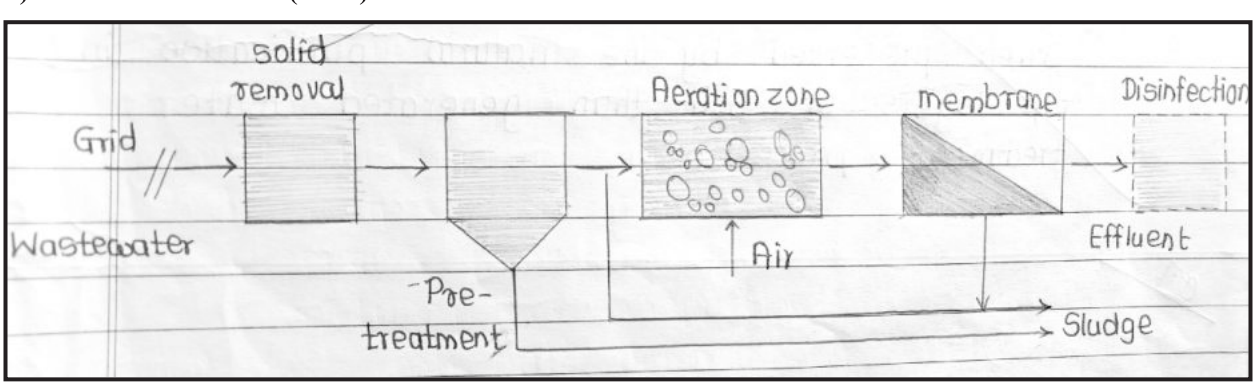
Recycled greywater of this kind is never safe to drink, but a number of treatment steps can be used to provide water for washing or flushing toilets.

The treatment processes that can be used are in principle the same as those used for the sewage treatment, except that they are usually installed on smaller scale often at household or building level :

**a) Activated sludge Treatment (AST) Process –**




**b)Membrane Bioreactor (MBR) Process –**




- Biological systems such as living walls and bioreactors or more compact systems such as membrane bioreactors which are a variation of activated sludge process and is also used to treat sewage.
- Mechanical systems (sand filtration, lava filter systems are based on UV radiation).

In constructed wetlands, the plants use contaminants of greywater, such as food particles as nutrients in their growth.

**Reuse –**

The potential ecological benefits of greywater recycling include –

- Reduced freshwater extraction from rivers & aquifers
- Reduced energy use and chemical pollution from treatment.
- Groundwater recharge.
- Reclamation of nutrients.
- Greater quality of surface and ground water when preserved by the natural purification in top layers of soil than generated water treatment processes.

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# PARTS OF GREY WATER TREATMENT

- **Collection point**

It is the starting point of the treatment system where water gets collected from the property. It is important that the collection points are properly maintained.

- **Aerobic screening**

It is the process of removing insoluble material from the wastewater. The process efficiently reduces the material into almost negligible residue which is discharged into the public sewerage system. Remaining greywater flows to the second stage.

- **Biological treatment plant**

In tthis process, air is flown into the water so that bacteria can consume impurities up to a large extent. To achieve the maximum metabolizing levels, a sustainable concentration of biomass is maintained in the chamber. As a result, almost all of the incoming waste gets cleaned, and the amount of residue is the minimum. Typically, 99.9% of the water can be reused which is a pretty high level of efficiency.

- **Ultrafiltration**

Special membranes with microscopic pores prevent bacteria, virus, and particles. It is called ultafiltration process. Membranes should be cleaned regularly by air scouring so that maximum cleaning is assured.

- **Disinfection using UV method**

Ultraviolet lamps are used for additional protection against the pathogen. It acts as an additional barrier

- **Chlorination**

Chlorine is added to the water in reticulation and storage system. It removes impurities by ionizing water molecules.

- **Storage of treated water**

Treated clean water is kept in the storage unit so that it can be used in several applications. Toilet flushing, surface irrigation and public washing machines are a few examples.

**Why Grey Water Recycling plant?**

- Since the treated water can be used in several applications, it reduces the consumption of fresh water. Thus, it saves public resources.
- It reduces the burden on septic tanks or public sewage. It extends the lifespan of septic tanks. Decreased water flow in the drainage system assures better system effectiveness. It also reduces the cost of production.
- Reduced flow of water puts reduced burden on the pumping network and treatment plants of municipal corporations.
- When there is a reduced flow of polluted water in the system, there is a reduced environmental impact.
- Due to high efficiency , these systems offer a payback in three to five years, making it a cost-friendly choice.

**Is it safe to use treated Grey Water?**

Millions of Grey water cleaning systems has been installed worldwide. They are quite safe for human life and pets. However, a few things should be kept in mind while installing a system :

- Treated water looks clean and pure, but is it surely unsafe for drinking. Hence, humans and pets should refrain from consuming it internally.
- Treated grey water should not be used in kitchen gardens or sprinkler systems. However, it can be used for surface irrigation.
- Storage of grey water for more than 24 hours is not recommended at all. Tank filters should be kept lint free. Holding tanks require regular cleaning to avoid the build-up of sludge.

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# SEWAGE TREATMENT PLANT PROCESS

Sewage treatment plant process incorporate sewage treatment on primary, secondary or biological and tertiary treatment procedure to improve the quality of wastewater for reuse.

With expanding infrastructural advancement and water use for different purposes, for example, local and business, there is a generation of wastewater.

Sewage treatment alludes to the process of evacuating contaminants, microorganisms and different kinds of toxins from wastewater. The water that channels from toilets, sinks, showers, sinks, dishwashers, washing machine and liquid industrial waste are categorized as wastewater or crude sewage and this wastewater with contaminants is further dealt with in a multi-stage process.

**Types of Sewage Treatment Plant :**

- SBR Based Sewage Treatment Plant
- MBBR Sewage Treatment Plant

- MBR Sewage Treatment Plant

**Sewage water Treatment Plants manufacturers Types :**

With the increasing awareness of pollution control and preservation of ecology, sewage treatment plant has become immensely important. Civil authorities and Municipal Corporation encourage localized sewage treatment plants to reduce the burden on public service systems. In view of the "Swachh Bharat" mission, it becomes further critical to install efficient sewage treatment plant.

**The Difference between SBR,MBR and MBBR Sewage Treatment plants**

Sewage treatment plant is a process which separates contaminants or unwanted dissolved materials from waste-water. There are various sewage treatment plants for different purposes. Each has their own process to treat wastewater.

**SBR Sewage Water Treatment Plant (SBR – sequencing batch reactor) –**

Is an activated Sludge process used for waste-water treatment. To reduce the organic matters, oxygen is bubbled through the mixture of waste-water and activated sludge.

**MBR Sewage Water Treatment plant (MBR – membrane bio reactor) –**

Is the combination Of the membrane process and a biological waste-water treatment process. It is one of the most widely used processes.

**MBBR Sewage Water Treatment plant (MBBR – moving bed biofilm reactor) –**

Is a biofilm process which requires less space than activated sludge systems. This process was invented in the late 1980s.

MBR and SBR sewage water treatment systems are type of activated sludge process. But when we talk about differences – the method used in both the processes to separate to separate the liquid from the treated waste-water is different. The technology used by SBR is phase separation that is gravity setting method, while MBR uses the membrane – and the use of a physical barrier for separation gives more importance to this process as it increases the advantages.

The other difference is the ability of the sewage treatment plants to operate at high biomass concentration (MLSS). The MBR treatment plant is considered to overpower others here as it operates at an MLSS of around 12000 mg/l. on the other hand, the SBR treatment plan works at 3000 mg/l. advantages that MBR provides because of this is it takes smaller process basins as compared to others - overall resulting in smaller plant footprint (around 50-70%) as compared to SBR process

**Less turbidity**

Less turbidity is a sign of clean water. MBR has less than 0.2 NTU effluent turbidity – another benefit that MBR provides. It reduces the burden on the ultimate disinfection system. At the time of operation, the membrane opening is less than 0.1 um – and without dis-infection it has the capacity to achieve 6-log dismissal of bacteria and 3-log off virus. SBR system cannot get values this low. Here, the usual membrane opening is 10 um which is quite large.

**Easy Operation Process**

MBR requires less involvement of the operators as the process is quite easy. Many of the plants require operators to keep an eye on the task of settling characteristics of the sludge-keeping in mind all the factors involved here. Along with the analysis, adjustments have to be made to keep it settled. Lack in this process can affect the effluent quality.

**Less Water Sludge**

Other difference is the amount off waste sludge produced by the plants. Again, because of the ability to operate at much higher sludge retention time, the MBR system tops the chart with lesser waste sludge than SBR. When we talk about the MBBR process-it requires less space than the activated sludge systems because of the concentrated biomass. Moreover, the efficiency of the system is less dependent on the final sludge separation. Unlike activated sludge systems, MBBR does not require recycling of the sludge. Other advantage include-high effective sludge retention time and lower sludge production.

We see some difference in the treatment plants. However, if there are no restrictions on the footprints and aa project doesn't require any reuse-SBR is a good system. It is cost-effective and takes care of the process required. On the other hand, for reduced footprint and higher quality effluent, MBR is considered the better choice. While MBBR Is also a consideration for many municipal and industrial waste-water treatment processes.

**Tejal Chaudhari &**
**Shabnam Tadvi**
(T.Y.B.Pharm)

# GREY WATER TREATMENT

**What is greywater ?**

Greywaterr is all wastewater that is discharged from a house, excluding black water (toilet water). This includes water from showers, bathtubs, sinks, kitchen, dishwashers, laundry tubs, and washing machines (figure 1). It commonly contains soap, shampoo, toothpaste, food scraps, cooking oils, detergents and hair. Greywater makes up the largest proportion of the total wastewater flow from households in terms of volume. Typically, 50-80% of the household wastewater is greywater. If a composting toilet is also used, then 100% of the household wastewater is greywater.

Not all greywater is equally ''grey''. Kitchen sink water laden with food solids and laundry water that has been used to wash diapers are more heavily contaminated than greywater from shoers and bathroom sinks. Therefore, different greywater flows may require different treatment methods that would render the water suitable for reuse.

**Why greywater recycling ?**

The main purpose of greywater recycling is to substitute the precious drinking water in application which do not require drinking water quality. Non-potable reuse applications include industrial, irrigation, toilet flushing and laundry washing dependent on the technologies utilised in the treatment process. With greywater recycling, it is possible to reduce the amounts of fresh water consumption as well as wastewater production, in addition to reducing the water bills. If greywater is regarded as an additional water source, an increased supply for irrigation water can be ensured which will in turn lead to an increase in agricultural productivity.

**Advantage**

- Reduction of overall water demand
- Reduction of Organic and hydraulic loadings on the municipal wastewater system
- Reduction of water bills
- Replenishment of ground water which contributes to a healthy water cycle
- Protection of aquatic ecosystems due to decreased diversions of Freshwater

**Disadvantages**

- Cannot be stored for more than 24 hrs (since nutrients break down and cause bad odor)
- Biodegradable soaps and detergents can also present a problem over a period of time when greywater is used for irrigation
- Health standards of the water and quality concerns
- Contain fats, oils, grease, hair, lint, soaps, cleansers, fabric softeners, and other chemicals that are harmful to plants

**How is greywater reused ?**

Greywater from baths, showers, washbasins and washing machines has to be collected separately from blackwater, treated and eventually disinfected for reuse as a non-potable water source.

Reusing greywater can be as cheap and easy (but labour intensive) as bucketing water outside, or as complex and costly (but convenient to use) as installing automatic greywater diversion, treatment, distribution and/or irrigation systems.

Garden irrigation is most commonly applied, whereby greywater can be bucketed or diverted to the garden for immediate use. Advanced systems are also available that collect, filter and treat greywater for indoor use such as toilet flushing or laundry washing.

Laundry washing accounts for 10-30% of the average household water use. Greywater from laundry is easy to capture and, with the right choice of laundry products, the treated greywater can be reused for garden watering or irrigation.

**Greywater reuse concepts and treatment technologies :**

Greywater treatment approaches range from simple, low-cost devices that route gryawater directly to applications such as toilet flushing and garden irrigation, to highly complex and costly advanced treatment processes incorporating sedimentation tanks, bioreactors, filters, pumps and disinfections units.

There are several ways to treat greywater to yield a hygienically safe water for reuse. The most commonly used greywater is that originating from baths, showers and hand washbasin which is usually less polluted than greywater from kitchens and washing machines. Separate greywater plumbing is a prerequisite for all systems.

The choice of technology for greywater recycling is dependent on several factors :

- Planned site
- Available space
- User needs
- Investment and maintenance costs

An efficient and functional treatment scheme for greywater recycling comprises:

- A primary treatment tank
- A secondary biological treatment
- UV-disinfection
- Storage tank
- Booster pump

**Reference :**

1. Fbr-information Sheet H 201.2005. greywater recycling : planning fundamentals and operation information. Association for Rainwater Harvesting and Water utilisation (fbr).
2. World Health Organisation (WHO).2006. Guidelines for the safe Use of Wastewater, Excreta and Greywater. Volume 4 : Excreta and Greywater Use in Agriculture. World Health organisation , 3rd Edition,2006,WHO,geneva.

**Yogeshwari M. Patil**
**Neha Jogi**
**Ashvini L. Jadhav**

# Poem

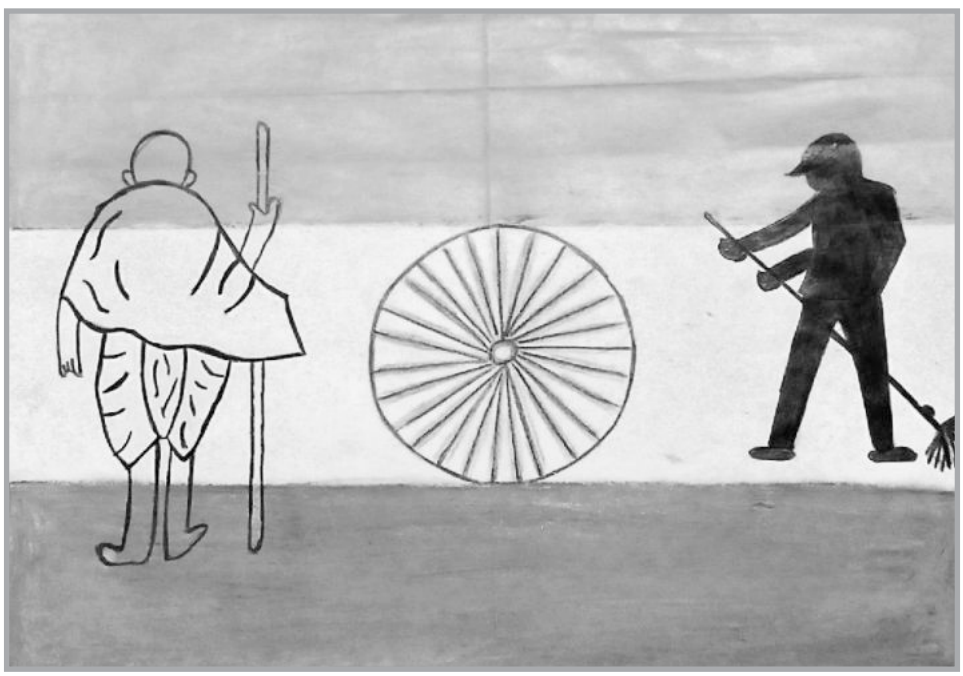
Catch the falling raindrop in tanks and buckets
don't let them go down the drain
Catch the falling raindrop in trank and buckets
harvest them for a cloudless day
For when the sun gets hotter and hatter
and the ground goes dry
and then the tree & plant in your garden
will have a bucket full of water
Catch the falling raindrop in trank and buckets
don't let them go down the drain
Catch the falling raindrop in trank & buckets
harvest them for a cloudless day
For all the plant and animal on Earth
need water to survive
We need to save our ponds and Lakes future
So, let use the harvested rainwater !
Catch the falling raindrop in trank & busckets
don't let them go down the drain

**Yukta S. Choudhari**
Second Year B. Pharm

पानी रे, पानी रे
तेरी महिमा न्यारी रे ।
तुझ बिन जीवन कहाँ यहाँ
ये बात सभी ने जानी रे ।
फिर भी क्यो नादानी रे,
मानव करता मनमानी रे ।
बिन इसके कोई रह न पाए,
पौधे, पंच्छी, जीव और मानव
सभी इसी से जीवन पाँए ।
फिर क्यो इसको व्यर्थ बहाएँ
पानी को हम सभी बचांए ।

**युक्ता चौधरी**
द्वितीय वर्ष बी.फार्म

# Artistic Section



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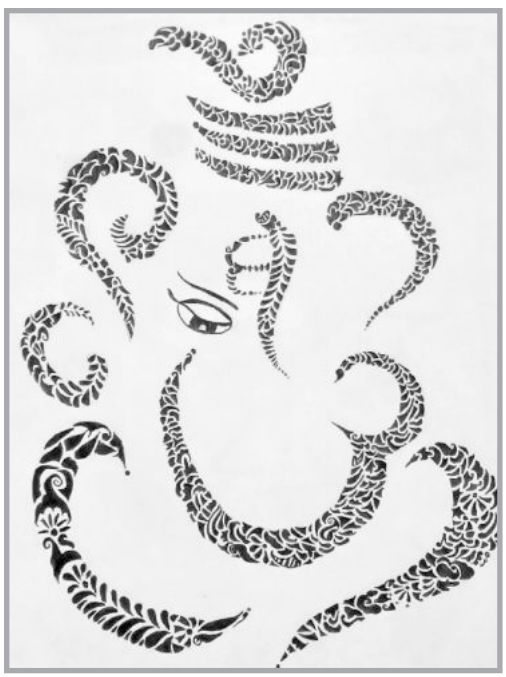

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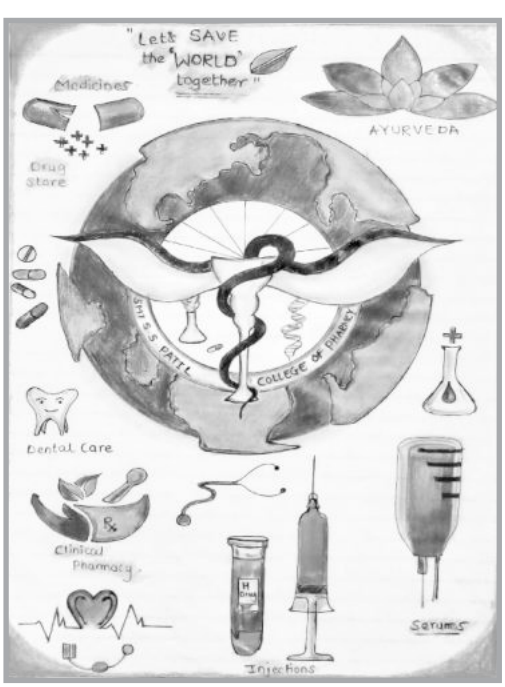


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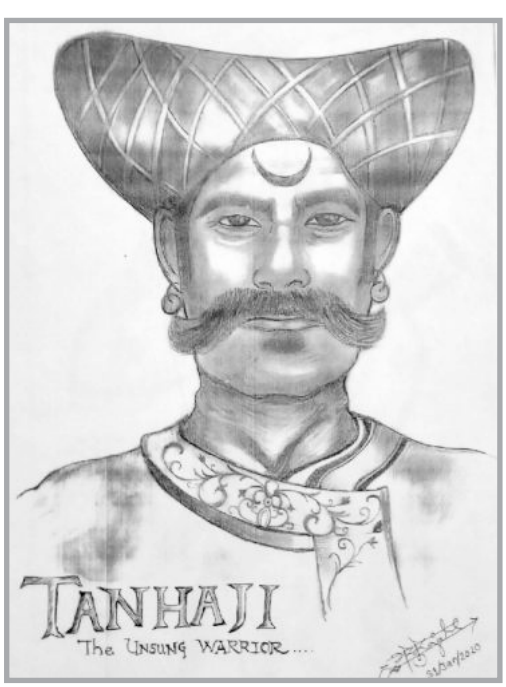


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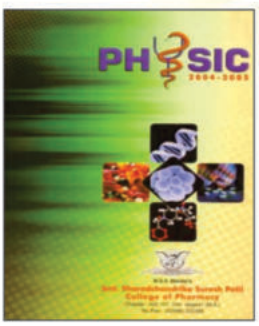
Chavan Shubhangi
S.Y. B.Pharm

# A journey of Physic

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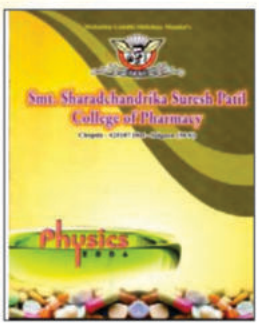


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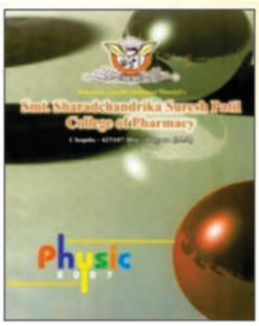


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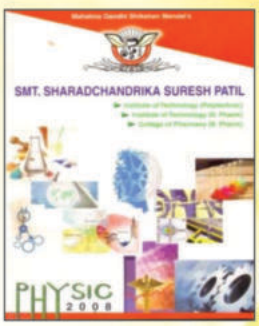


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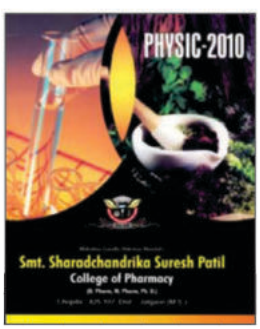


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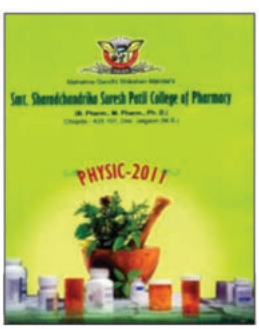


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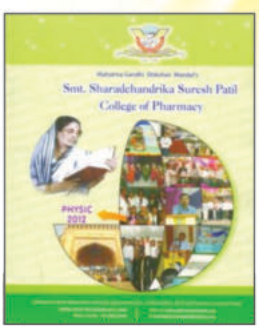


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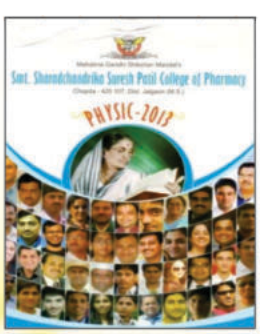


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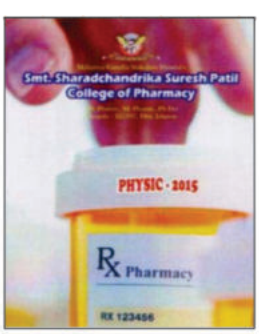


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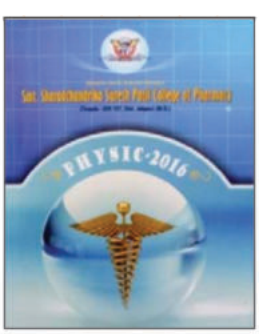


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Varshgrantha-2017

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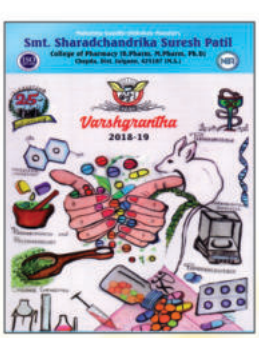


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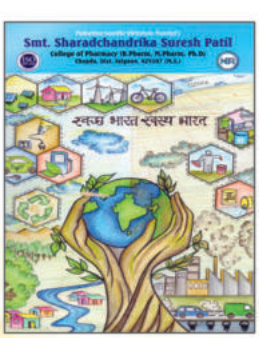


Varshgrantha-2020

**The Best and Most Efficient Pharmacy is within your own system...**