



Annual Report 2020

SAVE THE ENVIRONMENT
KOLKATA | GURUGRAM

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Letter from President STE

Preface

The year 2020 has been totally different from any of the years in the past. The year was a bag of mixed feelings of morose for the loss, gratitude for being alive, introspection on our existence in this world and last but not the least on contemplation of our moral responsibilities towards nature. The task of STE is becoming more and more challenging with the changing environment and with this inadvertent pandemic.

The year commenced with a collaborative organization of science festival and workshop with Hindu College, University of Delhi on Environment and Society: Inter-linkages and Co-existence, in the month of February. The three days event illustrated role of multiple disciplines of science in holistic and sustainable development in the society. Due to pandemic most of the programmes during the year 2020 were organized in online mode. STE commenced webinar-series in which various eminent speakers were invited to give their talks on different environmental and other related issues. In all 12 webinars were organized during the year.

Nelson Mandela once said, "It always seems impossible until it is done." Previously it appeared difficult to organize this year's annual conference and annual meet due to Covid, but thanks to the technology that STE could organize International Conference on Environment, Water, Agriculture, Sustainability and Health (EWASH-2020): Expanding our vision post COVID-19 and Second Annual Meet in association with CSIR-NEERI, Royal Society of Chemistry (North India Section), Hindu College, University of Delhi and ESDA, Delhi, during 19th-20th December 2020. We were honoured to have Padma Shri Prof. Bimal Kumar as our Chief Guest and Shri Vijaypal Baghel, renowned environmentalist and social activist, popularly known as 'The Green Man of India' as the Honorable Guest of Honor in inaugural session. Dr. Sanjeev K. Varshney, Head of International Cooperation (Bilateral), Department of Science and Technology, Govt. of India graced the valedictory session as the Chief Guest. STE is indebted to its sponsor organizations like NABARD and Gaur Surgicals. The entire event was a great success.

This year STE was really fortunate to include many new annual and life members both nationally and internationally.

I sincerely thank STE members and other volunteers who have contributed unconditionally in various tasks of STE.

STE has also lost one of its eminent members due to COVID-19. My thoughts and prayers are there for the bereaved family.



(Dr. Kshipra Misra)

President STE &

Former Additional Director, DIPAS (DRDO)

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1. Abbreviations

AIIPH: All India Institute of Hygiene & Public Health

BVDU: Bharati Vidyapeeth University

CSIR: Council of Scientific & Industrial Research

DRDO: Defence Research and Development Organization

DST: Department of Science and Technology

ESDA: Environment and Social Development Association

EWASH: Environment, Water, Agriculture, Sustainability and Health

GCNC: Green Chemistry Network Center

GIEES: Global Institute for Energy, Environment and Sustainability

IBST: Biotechnology, Institute of Biosci. &Tech.

IGNOU: Indira Gandhi National Open University

IIM: Indian Institute of Management

ILBS: Institute of Liver and Biliary Sciences

INSA: Indian National Science Academy

JESS: Joshi's External Stabilization system

NABARD: National Bank of Agriculture and Rural Development

NEERI: National Environmental Engineering Research Institute

NGO: Non-Governmental Organization

RSC: Royal Society of Chemistry

SOITS: School of Inter-Disciplinary and Trans-Disciplinary Studies

SRMU: Shri Ramswaroop Memorial University

STE: Save The Environment

TADOX: TERI's Advanced Oxidation Technology

TERI: The Energy & Resources Institute

2. Introduction

Some people describe the year 2020 as a 'Revengeful Year' meaning by the year of nature's revenge to human beings. This year can never be forgotten and will be remembered as the most 'fateful event' of the century. The entire year was full of bad memories and painful events and the crisis continues to express itself in myriad ways. Life has come to a standstill and is asking all of us a simple yet difficult question to answer "When will you stop destructing the nature?" Covid-19 reminded human beings about the destruction they have caused to all ecosystems and various species dwelling in them. Although the cause behind the pandemic is not yet ascertained but it has come as a deterrent to the entire human race to constrain all those activities that cause harm to the environment and to other species of the world including microscopic. Swami Vivekananda once said, ***"It is not the law of nature to be always taking gifts with outstretched hands like beggars. To give and take is the law of nature."*** For decades, humans have been neglecting the issues related to environment for fulfilling their own selfish needs. As a result, in 2020, we observed that while humans were suffering, nature was healing itself.

We are crying for a better environment whereas the steps for environment protection are in our own hands. Indian culture and tradition have always emphasized on creating a friendly and healthy environment. Our Vedas which have been written thousands of years ago teach us to take steps for the protection of our clean environment. One of the Vedic prayers invokes divine intervention to bliss and protect the environment. To protect environment the *Rig Veda* says:

“madhuvātāḥṛitāyatemadhuḥṣarantisindhavaḥmādvihnaḥsantuṣadhi.

madhunaktamutusāsūmadhumatpārthiva rajah

madhuḥṣorastusuryahmādhirgābobhavantunaḥ"

(Rigveda,1/90/6,7,8)

(Environment provides bliss to people leading their life perfectly. Rivers bliss us with sacred water and provide us health, night, morning, vegetation. Sun bliss us with peaceful life. Our cows provide us milk).

It shows that even more than 3000 years ago people used to acknowledge the bond between nature and living. Living beings cannot imagine their lives outside environment. Therefore, environment protection becomes our sole duty.

For the conservation of environment, we require people to come together, communicate, work in partnership and disperse the seeds of their work to obtain greatest outcome. In a vast country like India, government machinery is not enough to fulfill this enormous goal. Now a days Non-Government Organizations (NGOs), play a crucial role to reach to the masses or common people for spreading awareness regarding environment protection. NGOs create awareness among people on current environmental issues, natural resources and their protection etc. They do so by conducting workshops, seminars and conferences, distributing newsletters and brochures and showcasing their work on the websites and at different frontiers of the society.

3. About STE

SAVE THE ENVIRONMENT (STE), an NGO, was founded and registered on 29th November 1990. It was started with following Vision and Mission:

3.1. Vision

To protect present and future generations from various Environmental hazards.

3.2. Mission

To raise awareness and motivation among rural communities

&

To provide cost effective, energy efficient & environment friendly technologies



4. Brief History of STE

In 1992, with the collaboration of World Wildlife Fund (WWF), India, the organization started working to combat arsenic poisoning problem of water in the arsenic prone areas of West Bengal. Since then, STE has been involved in various projects related to eliminate groundwater arsenic contamination, mostly from rural areas of India. Some of the main activities of the organization are as follows:

1994: STE in collaboration with AIIH&PH, Government of India undertook a project on arsenic removal from water.

1997: On 23rd January, 1997, STE installed first arsenic removal plant in Kolkata, West Bengal.

1998: State Bank of India sanctioned a fund to install the arsenic removal plant in rural Bengal in 1998.

2000: In the year 2000, in collaboration with AIIH&PH and India Canada Environment Facility started a program on Community based project to mitigate arsenic pollution in West Bengal.

2001: In June 2001, organization had an opportunity to start a special clinic, which was first of its kind to provide free treatment to arsenic patients.

2003: STE was also first to deal with the conservation of rainwater and started working on Water Harvesting project in 2003 using ponds in rural areas.

A vocational training center was inaugurated for the arsenic patients in 2003.

STE is working very actively with DRDO, Ministry of Defence, Govt. of India to promote and implement a low-cost arsenic removal technology developed by DRDO.

STE has so far completed three projects from Dept. of Science & Technology, Govt of India to propagate and implement Arsenic/Iron removal technology in the affected areas.

Developed a model for sustainability of arsenic mitigation programme in the rural setup of India with the help of IIM, Ahmedabad.

Projects have been undertaken to mitigate arsenic/iron problem in 24 Parganas (N) & Nadia districts in West Bengal, Ballia district in Uttar Pradesh, Bhagalpur District in Bihar and Agartala in Tripura.

Since 1997 till date, Arsenic free drinking water has been provided to more than 1,00,000 people in India.

Already installed about 60 community type Arsenic Removal Plants and have distributed more than 5,000 domestic filters so far. STE is also conducting health camps in rural areas of West Bengal with the help of volunteers especially, doctors and healthcare personnel.

5. Activities of STE

For more than two decades STE has worked tremendously to reach to the local communities for creating environment awareness. STE has left no stone unturned in making people from all fronts of the society to amalgamate for this common cause.

Day by day environment is deteriorating. The qualities of our natural resources like land, water and air are depleting. Environmental pollution disturbs the balance of our ecosystems, affects normal life styles, cause stress and other related illnesses besides causing global warming. Government and other agencies are making so many policies on environment safety. But these policies come out to be successful to an extent only. This happens because a big chunk of our population remains ignorant of both the problem and its cause. Sometimes ludicrous situations arise when we talk of safety of environment but unknowingly contribute towards the opposite cause. With our busy schedules we tend to forget our responsibilities towards nature. Another verse of Srimad Bhagwat Geeta says

प्रकृतेः क्रियमाणानि गुणैः कर्माणि सिर्वशः।
अहङ्कारवमिहात्मा कर्त्ताऽहमिति मिन्यते॥३-२७॥

Every work is governed by the grace of the nature, but only the arrogant people deny it.

'This sloka signify the nature as the key controller of every work. On the other way it can be said that doing harm to the nature will affect its regular activities that may reflect on the human livings. The verse also puts warning to the arrogant people, who does not believe in the power of the nature.'

STE truly tries to follow this motto and works towards fulfilling it. STE organizes workshops, conferences and seminars etc. where people from different fields of interest like professors, scientists, doctors, teachers, politicians, entrepreneurs, research-scholars and school-students etc. participate and take notice of this crucial issue of environment safety.

5.1. STE Awards

STE not only encourage people for the cause but also motivate its' contributors by giving them awards under different categories. Annual Awards of STE are the tangible symbol to signify eminence of contributions made by a person or institution. This boosts the enthusiasm of the contributors that have contributed in different field of science and social service with their excellence, expertise and approach towards achieving certain goals for the society. Recognition of such extraordinary activities is eventually very important to boost their confidence and to honour them for what they have done for the science and society. STE confers following categories of awards and honours to such eminent personalities.

STE Dr. APJ Abdul Kalam Award

The award is in the memory of our former president of India late Dr. APJ Abdul Kalam. This award is conferred every year to the senior scientist of DRDO/ ISRO (working or retired) who has significantly contributed towards science and technology in India.

(Eligibility: Any Indian Citizen above the age of 55 years. Nominations will be from STE.)

STE Dr. Praloy O. Basu Life Time Achievement Award

The award is constituted in the memory of late Dr. Praloy O. Basu, Founder Secretary of STE. This award is conferred every year to any citizen of India, who has made a difference to the society by his/her contributions in terms of education/ policies/ S & T/ Social Service and others.

(Eligibility: Age above 45 years. Nomination from STE).

STE International Awards

(2 sub categories)

STE International Achiever Award

STE International Young Achiever Award

This award is to recognize NRIs who have brought fame to India by contributing towards Science & Technology / Environment / education/ Society.

(**Eligibility:** Anyone born in India but working abroad can apply. Age no bar).

STE Green Excellence Award

This award is constituted to honour those professionals who have excelled in safeguarding and protecting the environment.

(**Eligibility:** Any one above the age of 40 years can apply).

STE Fellowship Awards

STE Fellowship award is conferred to the Indian senior scientists /Academicians for their outstanding achievements in various fields of science & Technology and Education.

(**Eligibility:** Anyone above the Age of 50 can apply)

STE Meritorious Award

The award is conferred to the persons who have an exceptional/excellent contribution in the field of academics and research

STE Water Awards

The awards are conferred to the Indian nationals who have made the difference in the area of water by any means.

(**Eligibility:** Any one can apply in this category and age is no bar)

STE Young Researcher Awards

STE Young Researcher Faculty Awards

STE Young Researcher Awards

The awards are conferred to the young Indian researchers to encourage and boost their enthusiasm.

(**Eligibility:** Anyone in the Age between 25 to 40 years can apply.)

STE Best Ideas / Innovations / Technology for Environment Awards

The awards are for the Indian Nationals to generate / develop the innovation towards serving the environment.

(**Eligibility:** Anyone can apply. Age no bar)

STE Best School Principal Award

This award is constituted to recognize the Principal of Schools for his/her contributions in the field of science and environment.

(**Eligibility:** Any one above the age of 40 years can apply).

STE Best Teacher Award

This award is given to the teachers of Indian nationality for promoting science and technology among the school students.

(**Eligibility:** Teachers – teaching Science for Classes 9-12 can apply).

STE Women Awards

This award is constituted to recognize the Indian women scientists/ Academicians for their contributions in the field of science and environment.

(**Eligibility:** Any woman above the age of 40 years can apply).

STE Humanitarian Award for NGO

This award is given to an NGO who has significantly contributed for the cause of environment and general social well being of the society.

6. Events/Programmes during the year

STE is not limited to environmental pollution rather it covers sustainable development and management of natural resources and flora and fauna. Day by day the need of environment protection at various levels is increasing thereby enhancing the responsibilities of the NGOs. Even after more than 70 years of independence, Indian population still lacks in awareness regarding environment safety. This has happened because still two-third of our population still lives in poverty. They are simply unaware regarding environment protection rather struggles to make ends meet. In this scenario the responsibility of NGOs like STE is further enhanced. STE is totally dedicated towards the cause of environmental safety and health. During the year 2020, STE has organized various events and programmes on environmental development issues that has come out to be beneficial to the different levels of the society. The details of all the events conducted during the year are given below:

6.1. Science Festival & National Workshop on Environment and Society: Inter-linkages and Co-existence

Date & Venue: 27-29 February at Hindu College, New Delhi, India

Organisers: Hindu College, University of Delhi and Save the Environment

Hindu College in association with STE together organized these three days event. The event was presided by renowned Scientists Dr. S.K. Goyal, Senior Principal Scientist and Head of CSIR–National Environmental Engineering Research Institute, Delhi Zonal Centre; Prof. Alok Dhawan, Indian Institute of Toxicology Research Lucknow, Sh. Sant Sangneria Ji, Founder and Chairman, Ultra International Limited; Dr. Ricky Kej, Grammy award Winning composer and billboard#1 Artist (USA); Dr. Anju Srivastava, Chairperson and Principal, Hindu College; Dr. Kshipra Mishra, Co-chair and President, STE and Dr. Reena Jain, Programme-Convenor.

The Science festival appropriately illustrated the role of multiple science disciplines in conservation and sustained development of the planet. Various activities were conducted during the span of two days like flash talks, poster-presentations etc. on riveting and pertinent topics. Workshops on various themes were organized on 29th February, with the aim of providing students an experience of hands-on learning. The entire programme was a great success with the huge participation and overwhelming response of scientists, faculties, researchers and over 1200 enthusiastic students from







6.2. Online events

Due to pandemic most of the programmes during the year 2020 were organized in online mode. STE commenced webinar-series in which various eminent speakers were invited to give their talks on different environmental issues. The webinars were organized mostly on the weekends or holidays to seek maximum participation of the audience. All the webinars witnessed a generous gathering of delegates including scientists, researchers, environmentalists, social workers and policymakers, who stayed connected with us and interacted fervently in the Q&A sessions that followed each webinar. It was indeed an enlightening occasion, and the support received by the audience has certainly motivated STE for undertaking future endeavors related to environment protection and related health aspects.

A webinar on the theme 'Environment amid Covid-19: Dynamics and Solutions' was organized by STE on June 6, 2020, on the occasion of World Environment Day. With this STE laid the foundation of its webinar-series. The weekly webinar series was started on 15th August. It was a great and convenient way to reach to the masses or common people for spreading awareness regarding environment protection during the time of pandemic. Eminent scientists and professors delivered interesting and informative lectures on topics pertinent to the environment, Covid-19 pandemic and other related issues.

List of webinars organized during the year:

| Webinar No. / Date Organizers | Speaker | Topic | Outcome |
|---|--|--|--|
| 01/06th June STE World Environment Day |  Prof. Arunabha Majumdar Patron, STE | Inaugural talk on Webinar theme: Environment amid Covid-19: Dynamics and Solutions | Changes in policies regarding environment protection should be adopted in a post-pandemic period. |
| |  Dr. S.K. Goyal Chief Scientist & Head NEERI-Delhi Zonal Center | Post pandemic lifestyle and environment | Improvement in air and water quality brought about due to lesser human interference in the lockdown period. Stress should be on long-term planning, involving use of local resources and sustainable industrial development in the lines of Atmanirbhar Bharat Abhiyan. |
| |  Dr. Susan Titus Scientist 'G' NMRL (DRDO) Ambernath, Maharashtra | Accelerated bioremediation of marine oil pollution | Usage of indigenously developed 'nutrimix' and biomix' where oil degrading bacteria are used for bioremediation, based on dispersion, degradation and dissolution phenomena for water-pollution caused due to oil spillage |
| |  Prof. Md. Hussain Deptt. of Biotechnology, Jamia Milia Islamia University | Emerging respiratory viral infections and strategies of treatment and prevention | Structure, etiology and treatment of viral strains causing various respiratory illnesses including Covid-19 pandemic and its causative agent, i.e., SARS-CoV-2, its prevention and management strategies. |
| |  Mrs. Sandhya Kaushik Faculty, JESS (Joshi's External Stabilization System) | Necessity is the mother of invention- An innovative technique to treat orthopedic problems | Explanation of Joshi External Stabilization System' that has successfully corrected orthopedic disproportions in hundreds of patients so far. |

| Webinar No. / Date Organizers | Speaker | Topic | Outcome |
|---|--|--|--|
| 02/15th June STE & Anchrom Enterprises (India) Pvt. Ltd., Mumbai (Company dedicated to the technique of TLC and HPTLC since 1978) | <p>Panelist 01: Dr. Anubhuti Pasrija Principal Scientist (DRDC-Analytical) at Dabur India, Pvt. Ltd.</p> <p>Panelist 02: Dr. Sayeed Ahmad Assistant Professor, Dept. of Pharmacognosy and Phytochemistry Faculty of Pharmacy, Jamia Hamdard University, New Delhi</p> <p>Ms. Sneha Singh (Speaker)</p> <p>Mr. Vishwajit Kale (Speaker) Application Chemists, Anchrom Enterprises (I) Pvt. Ltd.</p>   | | <p>HPTLC is a simple, cost-effective and flexible technology. It finds its novel application for screening of bio-autographic assays.</p> <p>The speakers introduced the world's first, new generation "HPTLC- PRO" installed in their lab in 2019.</p> |
| 03/15th August STE |  <p>Dr. Dinesh Rangappa Professor and Program Coordinator Deptt. of Nanotechnology Visvesvaraya Technological University, Karnataka.</p> | Nanotechnology as Potential Candidate To Tackle COVID-19 Virus. | Applications of nanomaterials including nano enzymes for prevention and treatment of COVID-19 infections. |
| 04/23rd August STE |  <p>Prof. Umesh Kulshrestha Dean & Professor School of Environmental Sciences Jawaharlal Nehru University New Delhi</p> | Holistic Environmental Approaches for Sustainable Society | Holistic approach can be actualized by assembling the knowledge of all the components, i.e., place and function; connecting capacity from micro to macro; by reviewing family budgeting and development of prototype be it weather, raw material or life and; estimate the consequences. |

| Webinar No. / Date Organizers | Speaker | Topic | Outcome |
|----------------------------------|---|---|--|
| 05/29th August STE |  <p>Prof. R. K. Sharma Coordinator, Green Chemistry Network Center (GCNC), Deptt. of Chemistry, University of Delhi; Fellow of Royal Society of Chemistry (RSC) & the Honorary Secretary of RSC London (North India Section).</p> | Green Chemistry: Designing Chemistry for Environment and Human Health. | Building of a Green Chemistry Network is important so that Green Chemistry material can be synthesized and disseminated; trainings must be conducted. Green Chemistry Research Project must be taken up by institutions and organizations. |
| 06/06th September STE |  <p>Dr. Nupur Bose Associate Professor and Head, Department of Geography, Research Faculty, Dept. of Environment & Water Management, A. N. College (Patliputra University), Patna</p> | Impact of Groundwater Arsenic Ingestion in the Human Environment: A Case Study of the Ganga Plains | Mitigation strategies like (capping of contaminated hand pumps and bore wells; rainwater harvesting unit; use of arsenic filters and tapping of treated surface water) have been adopted in agro-economy based regions like State of Bihar. |
| 07/12th September STE |  <p>Prof. Satinder Kaur Brar Professor and James and Joanne Love Chair in Environmental Engineering, Lassonde School of Engineering York University, Toronto, Ontario, Canada.</p> | Filter the Unknowns? A Low-cost Drinking Water Solution for Rural Communities. | Development of the technique of microcystin-LR using bioaugmented sand filter. This innovative technique focused on modifications like increasing porosity and removal efficiency of the filter while maintaining cost effectiveness as a major aspect. |

| Webinar No. / Date Organizers | Speaker | Topic | Outcome |
|--|--|--|---|
| 08/19th September STE World Ozone Day Theme: Ozone Layer & Climate Change: Human Efforts |  <p>Dr. Malti Goel Chief Executive Climate Change Research Institute & Former Adviser at Department of Science and Technology (DST), Government of India</p> | 32 Years and Healing-Our Planet, Our Life | Montreal protocol has completed its 32 years in 2019. It has been noted that ozone layer in the stratosphere is healing. In 2019 amendment to Montreal Protocol called Kigali Amendment has entered into force; suggesting phasing out HFCs with new materials. Natural balance of ozone and maintenance of the ozone layer is of greatest significance for sustainable development and a healthy life. |
| 09/06th September STE |  <p>Late Mr. M. Davangere Founder and MD Pramartha Analytics Pvt.Ltd.</p> | Climate Change and Risk Management- An Actuarial Perspective”. | In India, there are only 500 actuaries and worldwide the number is 50,000 only. Collaboration between actuarial and other professional bodies is essential in policy making and planning programs and models for deciphering the solutions to climate change and risks associated with it. |
| 10/26th September STE, Faculty of Biotechnology, Institute of Biosci. & Tech. (IBST) & Shri Ramswaroop Memorial University (SRMU), Lucknow, U.P. |  <p>Dr. Nupur Bahadur, Fellow & Senior Scientist in The Energy & Resources Institute (TERI), New Delhi.</p> | Adequate Treatment of Wastewater: A Necessity to Meet SDG-6 and Address Issues of Climate Change. | TADOX [TERI's Advanced Oxidation Technology], developed by TERI to manage the issues of waste water management. It uses highly oxidizing hydroxyl radicals for oxidative degradation and mineralization of targeted pollutants. |
| 11/02nd October STE |  <p>Prof. Boyina Rupini Professor School of Inter-Disciplinary and Trans-Disciplinary Studies (SOITS) Associate professor Environmental Studies at Indira Gandhi National Open University (IGNOU), New Delhi</p> | Interdisciplinary Science Research | Owing to the inherent complexity of real-world concerns which innately involve different sections and cultures of the society, interdisciplinary science research is important. This approach will resulting the generation of novel and innovative thought sencompassing different subjects with their origin from variable subjects or disciplines and hence, better technology for a sustainable development of our society. |

| Webinar No. / Date Organizers | Speaker | Topic | Outcome |
|---|--|---|--|
| 12/10th October STE |  <p>Prof. Sunil Kumar De, Head Dept. of Geography North Eastern Hill University, Shillong, India</p> | Impact of Human Activities on River Health & Vice Versa: A study on Haora River, Tripura | It is utmost important to organize awareness camps to educate people for stopping activities which might pollute the waterbodies, besides, providing them with sanitation facilities and making sure that the effluent from them is not discharged into the rivers or their tributaries. Sociologists, geologists, NGO and civic bodies must come forward and work together towards improving the river health and hence, humanhealth. |
| 13/17th October STE |  <p>Dr. Sushil Kumar Singh Scientist 'F' Solid State Physics Laboratory, DRDO, Delhi</p> | Sustainable Technology: An Inspiration from Nature | Eco-friendly natural sources can be utilized for the betterment of society in a sustainable manner, like Thermo regulation, thermoelectric and other major properties of a silkocoon can be harnessed to design a nitrogendoped graphene supercapacitor, natural solar cell, as a source for fluorophores. |
| 14/30th October STE |  <p>Dr. M. K. Sharma Scientist Incharge, Senior Administrative Officer & Finance Officer National Institute of Hydrology (NIH), Roorkee, Uttarakhand, India</p> | Water Quality Issues in Indian Perspective | Developing modern monitoring strategies and tools in order to check the level of water pollutants. Application of modern techniques to manage pollutants in water bodies of especially the urban areas. |
| 15/08th November STE & ISPOR, Bharati Vidyapeeth University (BVDU), Pune |  <p>Dr. Jaswinder Singh Maras Assistant Professor (InspireFaculty) ILBS, Delhi</p> | Platelet Activation Induces Ryanodine- Receptor-2 Mediated Inflammation, Stellate Cell Activation and Hepatic Fibrosis. | Administration of aspirin, which is an anti-platelet drug results in reduced risk of liver fibrosis progression. Microbes in liver environment undergo alterations and thus, they can be used as marker for differentiating a cirrhotic Liver and a healthy liver. |

6.3. STE Free Eye Check-Up Camp

Free Eye Testing Camp was organized on the occasion of birthday of our beloved Founder Secretary, Lt. Dr. Praloy O. Basu, at Banalata Shiksha Niketan, Gosaba, Ragabelia, South 24 Parganas, West Bengal. The camp was also organized in the memory of Ms. Gouri Bhattasali and Ms. Rita Bhattasali on 6th Dec.2020. Free spectacles were also distributed to about 50 beneficiaries, in the memory of Late Mr. Dhiraj Kumar Dutta. We are grateful to the physicians, Dr. Pijush Kumar Nayak and Dr. Sukrita Samanta who volunteered for the eye camp and enabled us to actualize the endeavor. There were about 80 beneficiaries who were tested for eye related medical complications. A sum of INR 5000/- was also donated to Banalata Shiksha Niketan. During the camp all requisite measures were taken considering the pandemic.



6.4. International Conference on Environment, Water, Agriculture, Sustainability and Health (EWASH-2020): Expanding our vision post COVID-19 & STE 2nd Annual Meet 19-20 December, 2020

Year 2020 witnessed all countries across the world, united in their battle against the worst pandemic of the century i.e., COVID-19. Staying in doors for several months has given us time to retrospect and realize the need to focus on our environment and ecosystem for creating a sustainable future.

In relevance to this context, the **International Conference on Environment, Water, Agriculture, Sustainability and Health (EWASH-2020): Expanding our vision post COVID-19** was organized by **Save The Environment** in association with **CSIR-NEERI, Royal Society of Chemistry North India section, Hindu College, University of Delhi and ESDA, Delhi**, with gracious support from **NABARD** and **Gaur Surgicals**. The major objective of EWASH-2020 was to discuss the currently needed strategies and policies for environment protection, water management for agricultural and industrial purposes and overall health improvement, in a post COVID-19 scenario. The two-day virtual conference was an intellectual amalgamation of eminent scientists, academicians, policy makers, industrialists, social activists and budding young researchers who proficiently contemplated in one screen for strategizing a sustainable environment.

Padma Shri Prof. Bimal Kumar Roy graced the inaugural session of EWASH-2020 as The Honorable Chief Guest. **Shri Vijaypal Baghel**, renowned environmentalist and social activist, popularly known as 'The Green Man of India' was The Honorable Guest of Honor in inaugural session. This was followed by two days of extensively informative and enlightening keynote addresses and invited lectures by eminent scientists, professors and researchers. There were several innovative ideas shared by young researchers and students in the form of oral and poster presentations. STE-awards were also virtually presented to the awardees during various sessions of the conference. Later on, all the awards and certificates of the awardees, invited speakers and organizers were sent through post. The two-day program of EWASH-2020 was concluded with an august valedictory session, that **Shri Sanjeev K. Varshney**, Head, International Cooperation, DST, Govt. of India graced as the Chief Guest.

The major action points/ outcomes of **EWASH 2020**

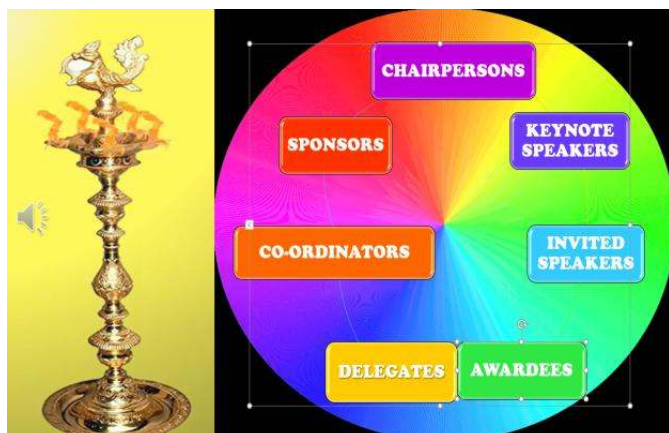
are listed below:

1. Amendments required in existing policies to ensure better environment management in the wake of pandemic were discussed.
2. Strategies for repurposing water sources to meet agricultural and industrial demands were proposed.
5. Extensive awareness programs in rural and semi urban regions for fast tracking social development

Glimpses of the conference



Glimpses of the conference



WASH Conference 2020 December 18, 2020

Souvenir & Abstracts

Organized by



SAVE THE ENVIRONMENT
(A SOCIETY FOR RESEARCH, AWARENESS & SOCIAL DEVELOPMENT)
KOLKATA, WEST BENGAL
www.stenvironment.org

Co-organized by



CSIR-National Environmental Engineering Research Institute
Delhi Zonal Centre (DZC)



The Royal Society of Chemistry
North India



Environment and Social Development Association (ESDA), Delhi



IQAC
Hindu College, University of Delhi
Delhi

Sponsored by



NABARD



GAUR SURGICALS

Glimpses of the conference

KEYNOTE SPEAKERS IN EWASH 2020



Prof. Arunabha Majumdar
Member, IIT, Chairman, Indian Water Pollutants Association (IWPA)
 Deythor Professor, School of Water Resources Engineering, Jadavpur University
 15, Bhadracharya Road, Department of Sanitary Engineering, 700032, Kolkata.



Dr. Manojanjan Patra
Consulting Scientist
 Scientist 'F' & Director, MWRI (ICRISAT), Hyderabad



Dr. Rakesh Kumar
Secretary, CWS (NBS)



Mrs. Manimozhi Theodor
Scientist 'F' & Director, WBSA (NBS)



Dr. Alok Adhikary
Senior Scientist, International Agriculture, IARI



Dr. Rakeshwar Bandichhor
Head, Chemistry - IIT - Patna (NBS)
 ex-Officio ICRISAT Chapter (South India)



Prof. Raghunath Bhattacharyya
Visiting Faculty, IIT, Kharagpur
 Executive Director (South), IWS, New Delhi



Prof. Rajinder Chaudhan
Dean (R&D & Consulting), Head
 Dept. of Biotechnology, Punjab Agricultural University, Ludhiana

KEYNOTE SPEAKERS INTERNATIONAL



Dr. Sureshbabu Y. Rao
President, ICI and Chief Technology Officer,
 Global Institute for Energy Environment and
 Sustainability, Bangalore, ICI and Director, Institute for
 Environmental Protection, Agency (IIEP)




Prof. Irena Cherna
Head, Dept. of Oceanography, Maritime
 Policy Centre, Polish Academy of Sciences, Poland



Prof. Suresh K. Bhat
Senior Scientist in Environmental Engineering,
 University School of Engineering,
 Anna University, Chennai, Tamil Nadu



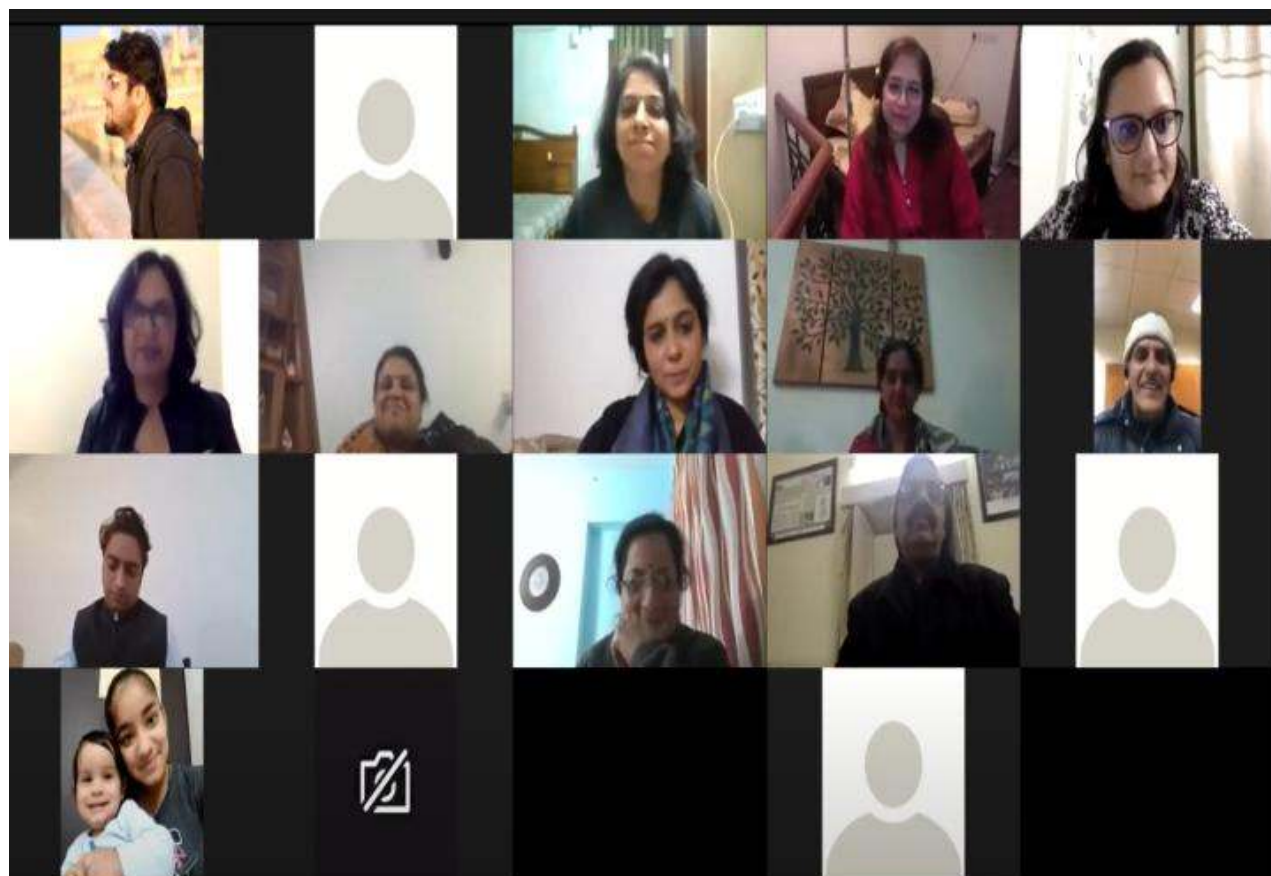
EWASH 2020 Conference Valedictory Session



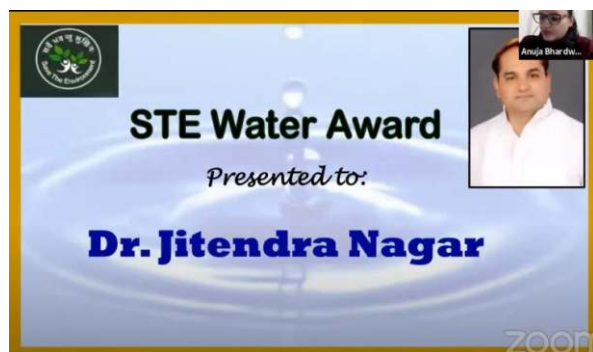
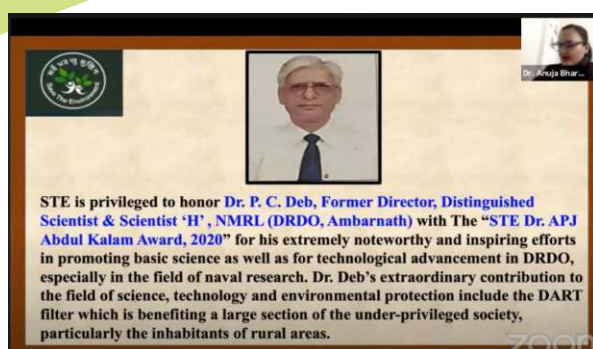
VALEDICTORY SESSION

**Welcome
Chief Guest**

Honourable Shri SANJEEV KUMAR VARSHNEY

Glimpses of the conference



6.5. List of Awardees-2020

Few awards constituted by STE in order to honor personages who have contributed to society in fields of environment protection, water conservation and allied aspects were conferred. The two coveted honors, i.e. STE Dr. APJ Abdul Kalam award and STE Dr. Praloy O. Basu lifetime achievement award aim to recognize exemplary contribution to science and environment. STE, being devoted to environmental protection has defined the Green Excellence awards to endorse distinguished work in arenas of environmental science. STE believes that women researchers have great conviction in bringing about solutions and changes to societal problems and achieves to fortify this by presenting STE Women Excellence Awards. More than 40 eminent persons were conferred the awards in different categories during EWASH-2020.

| Sl.No | Name of Award | Recipient Name | Designation and Affiliation |
|-------|---|----------------------------|--|
| 1. | STE Dr. APJ Abdul Kalam Award | Dr. P. C. Deb | Former Director, Distinguished Scientist & Scientist 'H' Naval Materials Research Laboratory, DRDO, Ambarnath, Maharashtra. |
| 2. | STE Dr. Praloy O.Basu Life Time Achievement Award | Dr. Arunabha Majumdar | Emeritus Professor, Jadavpur University, Kolkata and Former Director, AIIPH, Kolkata. |
| 3. | STE International Achiever Awards | 1) Prof. Surampalli Y. Rao | President, CEO and Chief Technology Officer, Global Institute for Energy, Environment and Sustainability (GIEES). |
| | | 2) Dr. Basudeb Saha | Tenured Faculty, University of Delhi, Present Associate Director, Delaware Energy Institute. University of Delaware Present Adjunct Faculty, University of Delaware Present President, Ri Karbon, Inc. |
| | | 3) Prof. D. Sakthi Kumar | Deputy Director, Bio Nano Electronics Research Center & Professor, Graduate School of Interdisciplinary New Science, Toyo University, Kawagoe, Saitama, JAPAN. |
| | | 4) Dr. Gausal Khan | Department of Physiology, Fiji School of Medicine, Suva, Fiji. & Visiting faculty, University of Sciences and Technology, Meghalaya, Ribhoi, Baridua, Meghalaya, India. |
| 4. | STE International Young Achiever Awards | Dr. Manjulata Singh | Post-doctoral Research Associate Landry Lab, Department of Human and Molecular Genetics Virginia Commonwealth University, Richmond, VA, United States. |
| 5. | STE Fellowship Awards | 1) Dr. Manoranjan Patri | Scientist "H" & Director, NMRL, Ambarnath, India. |
| | | 2) Dr. P. G. Dastidar | Scientist "G" & Adviser, Ministry of Earth Sciences, GoI, Lodhi Colony, New Delhi, India |

6.5. List of Awardees-2020

| Sl.No | Name of Award | Recipient Name | Designation and Affiliation |
|-------|---|--------------------------------------|--|
| 6. | STE Green Excellence Award | 1.) Dr. S. K. Mehta | Professor, Dept. of Chemistry and CAS Coordinator Coordinator CRIKC, Local Coordinator GIAN, Ex-Honorary Director, SAIF, PU Ex-Chairman, Dept. of Chemistry PU, Adjunct Professor, Shoolini University, Solan (H.P.) |
| | | 2) Prof. (Dr.) R. K. Sharma | Coordinator, Green Chemistry Network Center (GCNC), Department of Chemistry, University of Delhi & Fellow, Royal Society of Chemistry (RSC) & Honorary Secretary, RSC London (North India Section). |
| 7. | STE Meritorious Award (For academics and research) | 1) Mr. Mahidhara Davangere V. | Founder & Managing Director, Pramartha Analytics Pvt. Ltd. |
| | | 2) Prof. (Dr.) Boyina Rupini | Former Director (SOITS) IGNOU, Professor, Environmental Studies, Indira Gandhi National Open University, New Delhi. |
| | | 3) Dr. Navin Kumar Bajpai | Professor & HOD, Department of Biotechnology, Graphic Era Deemed to be University, DEHRADUN, India. |
| | | 4) Dr. Nupur Bahadur | Fellow & Senior Scientist, The Energy and Resources Institute (TERI), New Delhi. |
| | | 5) Dr. Saurabh Jyoti Sarma | Assistant Professor, School of Engineering & Applied Sciences, Department of Biotechnology, Bennett University, UP. |
| 8. | STE Water Awards | 1) Dr. Rama Dubey | Scientist E, DRL, Tezpur, DRDO |
| | | 2) Dr. Jitender Nagar | General Secretary, ESDA, New Delhi. |
| 9. | STE Women Excellence Awards | 1) Dr. Sonali Paul Mazumdar | Senior Scientist, ICAR-CRIJAF, Barrackpore, Kolkata. |
| | | 2) Dr. Reena Jain | Associate Professor, Department of Chemistry, Hindu College, University of Delhi, Delhi. |
| | | 3) Dr. Sandhya Mishra | Associate Professor, CCS University, Meerut/ NREC College, Khurja, UP, India. |
| | | 4) Dr. Rakhi Dey | Assistant Professor, Dept. of Physiology, Belda College, Vidyasagar University. |

6.5. List of Awardees-2020

| Sl.No | Name of Award | Recipient Name | Designation and Affiliation |
|-------|---|-----------------------------------|---|
| 10. | STE Best Ideas/ Innovations/ Technology for Environment Awards | 1) Ms. Adit Bedi | PGT (Chemistry), Saint Marks Sr. Sec. Public School Meera Bagh, New Delhi. |
| | | 2) Mr. Niranjan Karagi | Founder, Nir Nal, Vardappa Galli, Khasbag, Vadagoan, Belgaum, Karnataka. |
| | | 3) Dr. Kaushik Pal | Department of Mechanical and Industrial Engineering Associate Faculty, Centre of Nanotechnology Indian Institute of Technology, Roorkee |
| 11. | STE Young Researcher (Faculty) Awards | 1) Dr. Devanshi Magoo | Assistant Professor, Department of Chemistry, University of Delhi. |
| | | 2) Dr. Geetanjali Sageena | Assistant Professor, Keshav Mahavidyalaya, University of Delhi, New Delhi, India. |
| 12. | STE Young Researcher Awards | 1) Er. Mehebab Alam | Executive Engineer (E), Damodar Valley Corporation (DVC). |
| | | 2) Ms. Madhulika Esther Prasad | DST Woman Scientist-A (WOS-A) Project Principal Investigator (PI) |
| | | 3) Ms. Aola Supong | Research Scholar, Dept. of Chemistry, Nagaland University. |
| | | 4) Ms. Pallabi Banerjee | Researcher Scholar, Laboratory of Hormone Biology & Cancer Genetics, School of Biotechnology, Gautam Buddha University, Greater Noida, U.P., India-201312. |
| | | 5) Mr. Anuj Kumar | Senior Research Fellow, Dept. of Chemistry, Univ. of Delhi |
| | | 6) Dr. Ankita Verma | Research Associate, IARI, New Delhi. |
| | | 7) Mr. Sumit Sharma | Ph.D. Scholar, Dept. of Biotechnology, Bennett University (Times of India Group), Greater Noida, India. |
| | | 8) Ms Swati Singh | PhD Scholar Dept. of Environmental Science Graphic Era Deemed to be University |
| 13. | STE Best School Principal Award | Ms. Archana Adhikary | Principal, St. Peter's School Durgapur, West Bengal. |

6.5. List of Awardees-2020

| Sl.No | Name of Award | Recipient Name | Designation and Affiliation |
|-------|---------------------------------|---|---|
| 14. | STE Best Teacher Award | 1) Sister. Kiran AC | Teacher, Maryhill Convent, Near Mt. Carmel School, Mary Hill, Konchady Post, Mangalore, Karnataka-575008. |
| | | 2) Ms. Harit Bagga | Formely, PGT (Sr) Biology, S. S. Mota Singh Sr. Sec. School, Janakpuri. |
| | | 3) Ms. Ashita Puri | PGT Biotechnology, Vasant Valley School, Vasant Kunj, New Delhi. |
| 15. | STE Humanitarian Award for NGOs | 1) Centre for Development Research Sustainability and Technical Advancement (C-DRASTA), A/2/5 Pearl Apartment, 50 B, Kailash Bose Street, Kolkata, West Bengal-700006, India. | C/o Dr. Rajlakshmi Mallik, Research Professional & Director, Research & Training, Managing & Editor, Drasta-Avalokan, C-DRASTA. |

7. Members of STE

7.1 Life Members (LM)

| Sl. No | Name | Designation | Email |
|--------|---|--|------------------------------------|
| 1 | Prof. Sunil Kumar De | Professor & Head, Dept. of Geography | desunil@gmail.com |
| 2 | Dr. (Mrs.) Kshipra Mishra | President, Former Director DRDO | kmisra99@gmail.com |
| 3 | Mrs. Chhanda Basu | General Secretary & Social Worker | save1990env@yahoo.co.in |
| 4 | Mr. Sanjit Mitra | Treasurer, STE | mitra_sanjit@yahoo.com |
| 5 | Mrs. Shubhra Misra | Vice President, Self Employed | s.misra1952@gmail.com |
| 6 | Mr. Dipankar Chakraborty | JT. Secretary, Businessman | dipankarchakraborty.7119@gmail.com |
| 7 | Dr. Sucheta Chakraborti | Scientist, DRDO | suchetachake61@gmail.com |
| 8 | Ms. Rajyasree Ghosh | Oncologist | rgghosh2011@sbcglobal.net |
| 9 | Mrs. RupasreeShome | House Wife | rgghosh2011@sbcglobal.net |
| 10 | Dr. Jayshree Bhattacharji | Former Director Professor & HOD | – |
| 11 | Mr. Om Prakash Vishwakarma | Former General Manager- SAIL | vishwakarmaop12@gmail.com |
| 12 | Mrs. Ruma Paramanik | Social Worker | – |
| 13 | Mr. Debashis Gupta | Social Worker | deb.dgp@gmail.com |
| 14 | Dr. Vaishali Mishra | Teacher | drvaishalimishra2019@gmail.com |
| 15 | Mrs. Suparna Kundu | CI | Mouny477@gmail.com |
| 16 | Dr. Amit Ganguly | Corporate Trainer (Business Excellence) | aganguly1946@gmail.com |
| 17 | Dr. Priyanka Sharma | SC 'B' | ps24july@yahoo.com |
| 18 | Dr. Kalpana Bhargava | Scientist F | Kalpanab2006@gmail.com |
| 19 | Dr. Shoma Paul Nandi Head, Cellular and Molecular Biotechnology | Professor and Centre | shoma.amity@gmail.com |
| 20 | Ms. Priti Kataria | Vice President and Global HR Head-BFSI Business Unit | PRITI@KATARIAS.IN |
| 21 | Ms. Aarushi Kataria | Student | aarushikataria10@gmail.com |
| 22 | Dr. Mrs. Susan Titus | SCIENTIST 'G' | stitus@rediffmail.com |

| Sl. No | Name | Designation | Email |
|--------|--------------------------|---|--|
| 23 | Miss. Shachi Atreya | Principal, Adarsh Vidyalaya, Haridwar | |
| 24 | Dr. Sujata Kelkar | Private Practitioner | kelar.sujata@gmail.com |
| 25 | Dr. Murlidhar J. Mendki | Scientist 'F' | murlidhar@mendki.com |
| 26 | Dr. Anuja Bhardwaj | Research Associate, IARI | anujabhardwaj75@gmail.com |
| 27 | Dr. Sriparna Dutta | Assistant Professor, Dept. of Chemistry, Delhi University | sriparna.duttagcncnew@gmail.com |
| 28 | Dr. Jigni Mishra | Research Associate, STE | jignimishra@gmail.com |
| 29 | Miss. Shereen Bajaj | Research Scholar, STE | shereen.bajaj17@gmail.com |
| 30 | Dr. Mamta | Associate Professor, Galgotias University, Greater NOIDA | mamataforensic@gmail.com |
| 31 | Dr. Lakhi Ram Chauhan | Scientist 'F' | lakhiramchauhan@yahoo.com |
| 32 | Prof. Gausal A. Khan | Professor | gausalk@gmail.com |
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| 34 | Dr. Nupur Bahadur | Fellow & Senior Scientist | nupur.bahadur@teri.res.in |
| 35 | Ms. Aola Supong | Research Scholar | aolas@rediffmail.com |
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| 37 | Ms. Harit Bagga | PGT (Sr.) Biology | haritbagga2577@gmail.com |
| 38 | Ms. Adit Bedi | PGT (Sr.) Chemistry | aditbedi@hotmail.com |
| 39 | Dr. Rama Dubey | Scientist 'E' | r_dubey172@rediffmail.com |
| 40 | Prof. Navin Kumar | Professor & Head | navinbajpai@gmail.com |
| 41 | Dr. Sonali Paul Mazumdar | Senior Scientist | sonalimazumdar110@gmail.com |
| 42 | Mr. Mahidhara Davangere | Managing Director and Qualified Actuary | mahidhara@pramartha.com |
| 43 | Dr. Sandhya Mishra | Associate Professor | dr.sandhya.mishra@gmail.com |
| 44 | Dr. Devanshi Magoo | Assistant Professor | devanshimagoo@hinducollege.ac.in |
| 45 | Dr. Saurabh J. Sharma | Associate Professor | saurabh.sarma@bennett.edu.in |
| 46 | Dr. Geetanjali Sageena | Associate Professor | geetanjalisageena@gmail.com |
| 47 | Dr. Ankita Verma | Research Associate | ankitavermag@gmail.com |
| 48 | Dr. Parimal Bhomick | Assistant Professor | paribhomick15589@gmail.com |
| 49 | Dr. Usha Panjwani | Scientist 'G' | ushapanjwani6@gmail.com |
| 50 | Dr. Kavita Khatana | Assistant Professor | kavita.khatana_2015@ galgotiasuniversity.edu.in |
| 51 | Prof. Kaushik Pal | Professor | kaushik@me.iitr.ac.in |
| 52 | Ms Tanvi Sharma | Student | tanvi.ssharma12@gmail.com |

| Sl. No | Name | Designation | Email |
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| 54 | Dr. Rajlakshmi Mallik | Director | rajlakshmi.mallik@gmail.com |
| 55 | Dr. Archana Kumar | Associate Professor | akumar21@amity.edu |
| 56 | Mrs. Monika Rani | PGT, Hindi | mrani0083@gmail.com |
| 57 | Mr. Om Prakash Singh | Retired Bank Manager | opsingh.cbi09@yahoo.in |
| 58 | Dr. Girija Bharat | Director | gbharat@mugammaconsultants.com |
| 59 | Prof. Upasana Bora Sinha | Professor | upasanaborasinha@gmail.com |
| 60 | Ms. Babita Kumari | TO 'B' | babitkmr1978@gmail.com |
| 61 | Ms. Sudipta Chanda | TO 'D' | sudiptachanda2017@gmail.com |
| 62 | Mrs. Deepti Mishra | MBA (Mktg. & HR) | deeptimisra786@gmail.com |
| 63 | Ms. Arpita Banerjee | Self-employed | arpitasbanerjee@gmail.com |
| 64. | Dr. Rakhi Dey Sharma | Assistant Professor | rakhidey70@gmail.com |
| 65. | Ms. Angelina E. Titus | Student of Doctor of Pharmacy (5th yr.) | angelina23ash@gmail.com |
| 66. | Ms. Madiha Khan | Student | mk8078071@gmail.com |
| 67. | Mr. Rajamani Mohanram | Technical Officer 'B' | mohanr@nmrl.drdo.in |
| 68. | Mrs. Chitra Pawar | Technical Officer 'B' | deshmukh.chitra29@gmail.com |
| 69. | Dr. Neelam Bhalla | Retired Senior Scientist DRDO, MoD | drbhallaneelam@gmail.com |

7.2 Annual Members (AM)

| AM No. | Name | Designation | Email |
|--------|----------------------|-------------------------------------|--------------------------|
| 1. | Ms. Pallabi Banerjee | Research Scholar | pallabi.poly24@gmail.com |
| 2. | Ms. Madhulika Prasad | PhD scholar & DST Woman Scientist-A | esthermadhu@gmail.com |
| 3. | Ms. Swati Singh | Research Scholar | ss86302727@gmail.com |
| 4. | Ms. Maneeza Khan | Student | maneezakhan786@gmail.com |

7.3 International Member

| IM No. | Name | Designation | State | Email |
|--------|------------------------|--|--------|---------------------------------|
| 1. | Dr. Satinder Kaur Brar | Professor and James and Joanne Love Chair in Environmental Engineering | CANADA | satinder.brar@lassonde.yorku.ca |
| 2. | Dr. Manjulata Singh | Postdoctoral Research Associate | USA | Manjulata.Singh@vcuhealth.org |





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