

Promoting Excellence in Chemistry Education

Association of Chemistry Teachers News Letter, September - December 2024

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Prof. Wasudeo Gurnule Editor Kamla Nehru Mahavidyalaya, Nagpur, Maharashtra.



Wishing you in advance the entire fraternity of ACT, a Merry Christmas, a very happy, healthy and prosperous New Year 2025. The present Editorial Board has put in its bit of efforts, to make the newsletter as attractive and informative as possible. We tried to direct the attention of our readers towards advanced research trends taking place across the globe so as to motivate them to take up initiative in re-orienting themselves towards advanced topics of research and innovative teaching and evaluation methods. We are bringing the issue of the newsletter with the activities of ACT of different zones, articles of current topic, scientific news and reports of international and National activities. We have also included the report of NCCT-2024 held at Mizoram University, Mizoram, Aizwal and brief profiles of ACT -2024 award winners. This issue also contains the details of ACT executive Council 2025-2027.

I take this opportunity to say many, many thanks to all my Editorial Board Members for their whole hearted co-operation extended to me.

With warm regards to one and all

Members of Editorial Board

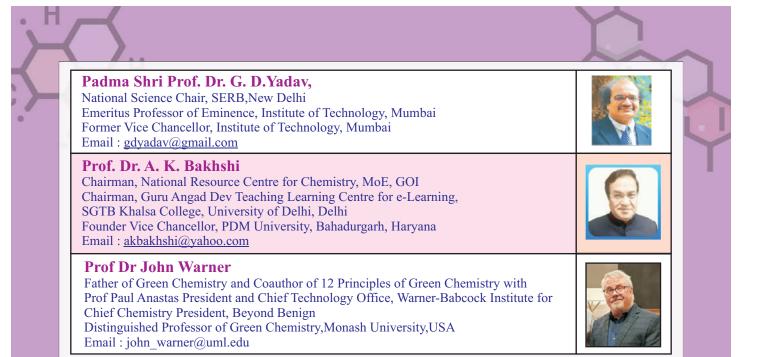
- ▶ Prof. Dr. Brijesh Pare, Govt.Madhav Science College, Ujjain
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- > Dr. Hemant Khanolkar, Fr. Conceicao Rodrigues College of Engg., Mumbai
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- Dr. Subhash P. Singh, A.N.College, Patna
- Dr. Hemant Pande, Formerly Hislop College, Nagpur
- ▶ Dr. Rakhi Gupta, IIS (deemed to be University) Jaipur
- > Dr. Umesh C. Jain, Academic Heights Public School, Morena
- ▶ Dr. Gitimoni Deka, Rangia College, Rangia
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- ▶ Dr. Mannam Krishnamurthy, Varsity Education Management Limited, Hyderabad
- Prof. Dr. Sudesh Ghoderao, RNC Arts, JDB Commerce and NSC Science College, Nashik Road, Nashik, Maharashtra

Honorary Members of ACT

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Bharat Ratna Prof. C.N.R. Rao, FRS National Research Professor : Linus Pauling Research Professor, Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur, Bengaluru - 560 064 E-mail : cnrrao@jncasr.ac.in	
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Prof. Mihir K. Chaudhuri Former Vice-Chancellor, Tezpur University, Tezpur. Advisor, Education Department of Government of Assam, Gawahati - 781 006 E-mail : chaudhurimihirk@gmail.com; mkc@tezu.ernet.in	



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- North-East : Prof. Purabi Sarmah, Nalbari College, Nalbari, Assam

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	Members	s (2 per zone)	1
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		2) Principal Dr. Amar Srivastava, Hari Sahai PG College, Kanpur	
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		Hoogly, West Bengal	
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	Central :	 Prof. Subramania Angaiah, Pondicherry University, Puducherry Prof. Viiandra Sinch, ISB, IBS Academy, Indexa, MB 	
	Central.	 Prof. Vijendra Singh, ISR, IPS Academy, Indore, MP Prof. Pradhyuman Singh Ranawat, Mohanlal Sukhadia University, Udaipur, 	
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		2) Prof. Diganta Bhuyan, Barnagar College, Sorbhog, Assam	
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	East Zon		
	South Zo	1 5 57 7	
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	Central Z	one : Prof. Arpan Bhardwaj, Vice Chancellor, Vikram University, Ujjain, MP	
	West Zon		
	NI (LE	Gujarat, Ahmedabad	
	North Ea	st Zone : Prof. N. Mohondas Singh, Head, University of Mizoram, Aizawl, Mizoram State	
	HBCSE	TIFR) : Dr. Ankush Gupta, Chemistry Cell, HBCSE(TIFR), Mumbai	
	Mumbai		
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		Advanced Scientific Research, Bengaluru	
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		Iha Jain, Formerly University of Lucknow, Lucknow	
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	Prof. S. D	D. Samant, Formerly ICT, Mumbai and Centre for Basic Sciences	
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		C. Deka, University of Mizoram, Aizawl, Mizoram	
T	Prof. Brij	jesh Pare, Madhav Science Government PG College, Ujjain, MP	7.
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Reports of Activities of ACT

A Detailed Report of NCCT - 2024

The International Conference "Current Trends in Chemical Sciences Research and Education" (CACSRE-2024), was successfully held during November 06-08, 2024, at Mizoram University, Aizawl, in association with the Association of Chemistry Teachers (ACT), Mumbai. CACSRE- 2024 was Inaugurated along with the National Convention of Chemistry Teacher (NCCT) as NCCT-2024 at the Mizoram University Auditorium on November 06, 2024.

Prof. Ved Prakash Singh, Head, Industrial Chemistry, MZU, and Convener, CACSRE-2024 & NCCT-2024, delivered the Welcome address in inaugural session.Mr. Vanlalthlana, the Hon'ble Minister of Education, Information & Communication Technology, Public Relations, and Taxation, Govt. of Mizoram, graced the Inaugural session and delivered the Inaugural Address in CACSRE-2024 as well as (NCCT-2024). During the inaugural address, the Hon'ble Minister of Education, Mr. Vanlalthlana, emphasized the importance of Education in general, and Science Education in particular.

Prof. S.K. Mehta, Hon'ble Vice-chancellor of Ladhakh University, Ladhakh and Prof. R. C. Deka, Hon'ble Vice-chancellor of Cotton University, Guwahati, were the Guest of Honor in the Inaugural session of CACSRE-2024 & NCCT-2024.



Prof. Brijesh Pare, President of ACT addressing the gathering during inauguration of NCCT-2024



Prof. D. V. Prabhu, General Secretary of ACT addressing the gathering during inauguration of NCCT-2024



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Convener Speech by Prof. Ved Prakash Singh





Felicitation of the Guest during Inauguration Session

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Lightening of Lamp by Hon'ble guest of inauguration of NCCT-2024

The President, ACT, Prof. Brajesh Pare and The General Secretary, ACT, Dr. Damodhar V. Prabhu, Wilson College, Mumbai, were gracing for the Collaborating Organization, ACT, for CACSRE-2024 & NCCT-2024. Dr. Prabhu introduced the ACT awards and Mr. Vanlalthlana, the Hon'ble Minister of Education, honored the ACT Awardees under the Following categories:

- 1) ACT LifeTime Achievement AWARD 2024 Prof. (Dr.) Krishna Gopal Bhattacharyya Former Professor of Chemistry, Gauhati University, Guwahati, Assam Professor Emeritus, Department of Chemistry, Assam Don Bosco University, Guwahati. Assam ACT Shri Anupam Sinha Best Chemistry Teacher AWARD 2024 2) Prof. (Dr.) Pankaj Mittal, Anand Engineering College, Agra ACT Best Woman Chemistry Teacher AWARD 2024 (in absentia) 3) Prof. (Dr.) B B V Sailaja, Andhra University, Visakhapatnam, AP ACT Prof. P R Singh AWARD for Outstanding Contribution to Chemistry 4) Education 2024 Prof. (Dr.) Okram Mukherjee Singh, Manipur University, Manipur ACT Dr Uma Sai Prakash Chemistry Popularization AWARD 2024 5) Prof. (Dr.) Tapan Thakuria, Handique Girls College, Guwahati, Assam ACT Prof. Lallan Singh AWARD for Best Post-Graduate Chemistry Teacher **6**) (State Universities) 2024 Prof. (Dr.) Diganta Sarma, Dibrugarh University, Dibrugarh, Assam ACT Prof. (Dr.) Bhupendra Sahai Saxena AWARD For Best Post-Graduate 7) Chemistry Teacher-2024(in absentia) Prof. (Dr.) Anil Kumar, Sahibganj College, Sahibganj, Kanhu Murmu University,
 - Dhumka, Jharkhand

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8) ACT Prof Pinki B Punjabi AWARD For Outstanding Contributionto Researchin Chemical Sciences 2024

Prof. (Dr.) Ramesh C Deka, Tezpur University, Tezpur, Assam & Vice-Chancellor, Cotton University, Guwahati, Assam

9) ACT Best Chemsitry Young Teacher (Below 45 Yrs) 2024 (New Award instituted in 2024)

Prof. (Dr.) Ratiram Gomaji Chaudhary, Seth Kasarimal Porwal College of Arts, Science and Commerce, Nagpur



ACT Awards Ceremony during inauguration of NCCT - 2024



Participants in the workshops for schools organized by Prof. Brijesh Pare and Prof. Hemant Pande



Prof. Brijesh Pare conducting session for students

Then, esteemed Prof. Dibakar Chandra Deka, Hon'ble Vice-chancellor, Mizoram University, Delivered the Presidential address in the Inaugural session of CACSRE-2024 & NCCT-2024. Prof. Muthukumaran R., Department of Chemistry, Mizoram University, delivered the Vote of Thanks in the Inaugural Session. Major funding agencies, BRNS-DAE, CSIR, DBT, DRDO, SERB (DST), North-Eastern Council, Punjab National Bamk, Oil India, ONGC and the international agencies, the Royal Society of Chemistry, London (UK), and the American Chemical Society, (USA), respectively, were thanked by the CACSRE-2024



Invited Lecture at NCCT-2024

Prof. A. K. Bakshi Talk in NCCT-2024

Organizing committee members, for providing generous financial assistance for the CACSRE-2024international conference.

On November 06, 2024, the Keynote Address was delivered by Prof. S.K. Mehta, Hon'ble Vicechancellor of Ladhakh University, Ladhakh, while the plenary lectures were delivered by Prof. Konstantin Volcho, Novosibirsk Institute of Organic Chemistry, the Republic of Russia, Prof. Sanjay Sawant, Director, Regional Institute of Paramedical And Nursing Science, Zemabawk, Aizawl, Prof. T. Punniyamurthy, IIT-Guwahati, and Prof. Ramesh C. Deka, Hon'ble Vicechancellor of Cotton University, Guwahati. Subsequently, during the rapid-fire session that was held as parallel sessions, 12 short oral invited talks were presented by faculty member of different Universities and Colleges from various parts of the country. In addition, 33 posters were also presented by research scholars and college faculty members in poster session on November 06, 2024.

National Convention of Chemistry Teacher was held for the first time in Mizoram as NCCT- 2024, in collaboration with the Association of Chemistry Teachers (ACT), on November 07, 2024, at the Tanhril campus of Mizoram University. 08 Students and 02 Higher secondary Science teachers, each from Staines Memorial School, Chanmari, Aizawl, Dawrpui School of Science and Technology, Dawrpui, Aizawl, St. Joseph Higher Secondary School, Bawngkawn, Aizawl, and Kendriya Vidyalaya, Project Pushpak, Zemabawk, Aizawl, as well as Kendriya Vidyalaya, Mizoram University Campus, Tanhril, Aizawl, were participating in the One day program of NCCT-2024 on "Climate Change & Sustainable Development" at Mizoram University. As a part of NCCT-2024, Puzzle-solving while learning, and Quiz programme on Environmental aspects, were conducted. In addition, School students and teachers were briefed about discovery of Nano-pesticides, Plastic to Monomer, Nanozymes, Aerogels, as well as 20 practical Ways to eco-friendly sustainable living. The NCCT-2024 was concluded at on November 07, 2024

In parallel, on November 07, 2024, in CACSRE-2024, the Keynote address was





Oral Presentation Session in NCCT-2024

delivered by Prof. A K Bakhshi, Chairman, National Resource Centre of Chemistry, Ministry of Education, Government of India. The Plenary lectures were delivered by Prof. Rajeev Gupta, University of Delhi, New Delhi, Prof. V. K. Jain, University of Gujarat, Ahmedabad, Prof. Maya Shankar Singh, Institute of Science, Banaras Hindu University, Varanasi, Prof. Manmohan Kapur, Indian Institute of Science Education and Research-Bhopal, and Prof. G. Narahari Sastry, IITHyderabad. Besides, 07 short invited talks by faculty members of different insitutions were held. Notably in the invited talks, the talk by Dr. Nikolai Li-Zhulanov, Novosibirsk Institute of Organic Chemistry, the Republic of Russia, was appreciated. In addition, 30 oral presentations as well as 33 posters were presented by student participants.

On November 08, 2024, CACSRE-2024 was started with Plenary lectures that were delivered by Prof. Ravi P. Singh, IIT-Delhi, and Prof. Subharata Sen, Shiv Nadar University, Dadri. It was followed by parallel sessions where 12 short lectures were delivered by young chemistry faculty members from various Universities and colleges. In penultimate session of CACSRE-2024, 05 invited lectures, delivered by the members of Association of Chemistry Teachers (ACT), were held during the post-lunch sessions.

Finally, the CACSRE-2024 International conference was concluded with the Valedictory function. During the valedictory session, Prof. Ved Prakash Singh, Head, Department of Industrial Chemistry and Convenor, CACSRE-2024, provided a brief report on



The rich Cultural Heritage of Mizoram



The colours of Mizoram



Participants of NCCT-2024

The hard working Student Volunteers

the CACSRE- 2024 International conference. The participant certificates for the oral and poster presentations to the faculty members and students were distributed by Prof. Suman Rai, Dean (School of Physical Sciences) and Prof. N. Mohondas Singh, Head, Department of Chemistry, MZU, respectively. The valedictory function was also graced by esteemed Prof. Dibakar C. Deka, the Hon'ble Vicechancellor, Mizoram University, and the distinguished Prof. Lalnundanga, Registrar, Mizoram University.

Few young chemistry faculty member participants and student participants Participants, respectively, were provided the participant feedback that was followed by appreciation note by Prof. Brijesh Pare Madhav Science PG College, Ujjain, and the President, ACT. More importantly, 05 cash awards each (worth Rs. 5000/- sponsored by the Royal society of Chemistry, the United Kingdom) for the oral as well as poster presentations were announced and these awards were distributed by Dr. K. C. Lalmalsawmzauva, Department of Geography and Resource Management, MZU, and the Advisor to the Chief-Minister, Govt of Mizoram. Faculty members of the Departments of Chemistry and Industrial Chemistry, MZU, respectively were also participated in the valedictory function of CACSRE-2024. The vote of thanks for the valedictory function was given by Prof. Muthukumaran, Department of Chemistry, MZU, and Co-Convenor, CACSRE-2024 and the Financial assistance by the funding agencies, BRNSDAE, CSIR, DBT, DRDO, SERB (DST), North-Eastern Council,



ACT EC meeting at Mizorum University



AGM of ACT at Mizorum University



Valedictory Programme of NCCT-2024 at Mizorum University NCCT-CACSRE 2024

Oral presenters Awardees :-

Mr. Brilliant N. Marak Ms. Poonam Deka Mr. Vanhmingliana Mr. Suraj Kumar Ms. Gitashree Choudhury Ms. Tsathrongla Sangtam

Poster Presenters Awardees :-

Ms. Plabana Phukan Ms. Priyakshi Bora Ms. Collinica Camillie Syiemlieh Mr. Tarun Kumar Dinda Mr. Angarag Kashyap

Punjab National Bamk, Oil India, ONGC and the international agencies, the Royal Society of Chemistry, London (UK), and the American Chemical Society, (USA), respectively, were thanked again and appreciated. Thus, the International Conference CACSRE-2024 was successfully concluded, in the evening, on November 08, 2024 with the active participation of more than 200 participants from various Institutions (like IITs, NITs, IISERs, Universities, and Colleges) spread across the country and two international participants from the Republic of Russia. Almost all states of India participated actively in CACSRE 2024.

Report on

<u>NATIONAL CHEMISTRY DAY CELEBRATIONS - 2024</u> <u>Gayatri Vedavyas Education Campus, NTR Dist., A.P. State</u>

National Chemistry Day was celebrated at Gayatri Vedavyas Education Campus, NTR District of Andhra Pradesh on 10th December 2024. These celebrations were academically supported by Association of Chemistry Teachers (ACT, Mumbai) and arrangements were made by Sri Chaitanya Educational Institutions.

Dr. Mannam Krishna Murthy, Secretary, ACT South zone coordinated the celebrations on behalf of ACT.

A talent search online test was conducted for 50 min each in four time slots; 09.00 - 09.50; 10.00 - 10.50; 11.00 - 11.50 and 12.00 - 12.50, supported and evaluated by Infinity Learn. About 400 students of Class XI participated in the online test.

In the afternoon sessions, from 14.00 to 16.30 hrs. there were two guest academic presentations. *Mr. K. Ravindra Kumar,* Academic Dean, SKCM Education Trust, Vijayawada gave a presentation on Macro, Micro and Nano understanding of chemical materials. *Dr. M. Krishna Murthy,* Chief Executive Dean, Varsity Education Management Ltd., Hyderabad gave a power point presentation on Concepts of Chemistry Learning.

A meeting was organized only to 65 students, due to space limitation, on the basis of merit of the talent search test. *Mr. Rajendra Kumar*, Principal of the Education Campus chaired the session and motivated the students.

Merit certificates and useful books on concepts were presented to two toppers of the test: Ms Namala Prerana of Sri Chaitanya Girls College, M G Road and Mr Dhanumjaya Reddy of Gayatri Vedavyas Education campus, Venkateswara Nagar. Student participants interacted with the two guest speakers. The celebrations were concluded with a happy note of useful academics.



NCD 1: Resource persons of the celebrations Dr Mannam Krisgna Murthy, Mr Rajendra Kumar and Mr Ravindra Kumar



NCD 2: A part of the student participants of NCD Celebrations

NCD 3: Ms.N Prerana receiving Certificate of merit and books for her best performance in talent search test



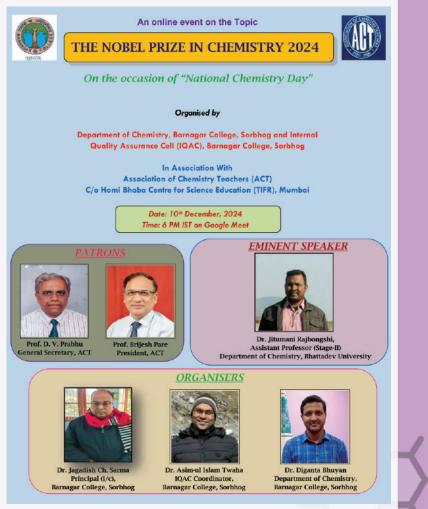
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<u>Report on the Celebration of</u> "National Chemistry Day" <u>Theme of the Event</u>: THE NOBEL PRIZE IN CHEMISTRY 2024 Date: 10/12/2024 <u>Venue</u>: Barnagar College, Sorbhog-781317, Assam, India <u>Platform</u>: Google meet

The "National Chemistry Day" is an event that happens on 10th December every year to give honor to the Scientists who got Nobel Prize in Chemistry. The aim of this event is to celebrate the contribution of Chemist and to inspire the the young students to choose carrer in Chemistry. In 2024, The Department of Chemistry, Barnagar College, Sorbhog in collaboration with Association of Chemistry Teachers (ACT), Mumbai, India had organised an online event on virtual platform Google meet. The theme of the event is "The Nobel Prize

in Chemistry 2024". The resource persons invited for this event is Dr. Jitumani Rajbongshi, Assistant Professor, Dept. of Chemistry, Bhattadev University, Assam, India. The welcome address is delivered by the organiser Dr. Diganta Bhuyan, Assistant Professor, Organiser and Head, Dept. of Chemistry, Barnagar College. After that, our respected principal Dr. Jagadish Chandra Sarma and IQAC, Coordinator Dr. Asim I. Twaha addressed the participants of the event. The vote of thanks was given by Dr. Shahnaz Ahmed, Assistant Professor, Dept. of Chemistry, Barnagar College. More than 90 students and faculties from Barnagar College have participated in the event thereby making it sucessful. We believe that this event will motivate the students to pursue their career in Chemistry



National Seminar Report

National Seminar on Safety in Chemistry and its diverse Activities

On 26th November 2024, the Department of Chemistry, RR Green University, in collaboration with the Association of Chemistry Teachers (ACT), Mumbai, successfully organized a National Seminar titled "Safety in Chemistry and IUPAC and its Diverse Activities." The event was generously supported by the International Union of Pure and Applied Chemistry (IUPAC), reflecting its commitment to fostering global chemical education and research.

The seminar brought together academicians, researchers, and students from across the state of the West Bengal to explore two significant dimensions of chemistry: **safety practices in chemical sciences** and **IUPAC's impactful global activities**.

We were privileged to have **Dr. Bipul Saha**, a distinguished member of the **Executive Board of IUPAC** and the former President of **Vinati Organics**, as the **Keynote Speaker** for the seminar. With his vast experience in academia, industry, and international collaborations, Dr. Saha delivered two insightful talks that captivated the audience:

1. "Safety in Chemistry" – This session emphasized the importance of adopting stringent safety protocols in chemical research and industrial practices. Dr. Saha underscored the need for cultivating a safety-first culture among chemists and provided practical guidelines for minimizing risks in laboratories and industrial setups.

2. "**IUPAC and its Diverse Activities**" – In this engaging presentation, Dr. Saha elaborated on IUPAC's multifaceted contributions to the advancement of chemical sciences. He highlighted the organization's pivotal role in standardizing chemical nomenclature, fostering international collaborations, and supporting educational initiatives globally.

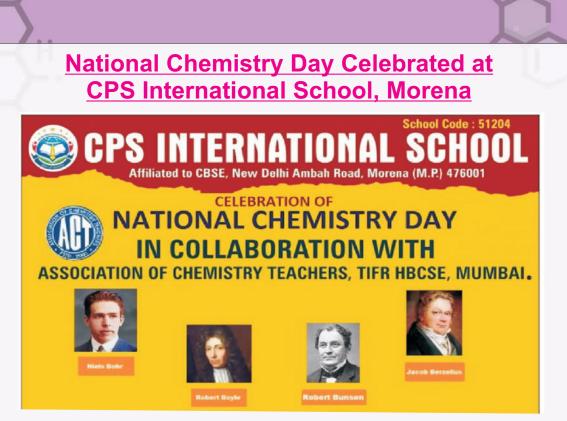
The seminar witnessed an overwhelming response, with participants actively engaging in the discussions and expressing their appreciation for the comprehensive and thoughtprovoking sessions. Dr. Saha's ability to bridge the gap between theoretical insights and practical applications was particularly well-received.

The success of the seminar was made possible by the unwavering support of our esteemed collaborators and sponsors, especially IUPAC, for their generous endorsement of this initiative. We extend our heartfelt gratitude to **Dr. Bipul Saha** for gracing the occasion and sharing his invaluable expertise.

On behalf of the organizing team, I express sincere thanks to the Honourable Vice Chancellor Sir, respected Registrar and Finance Officer, faculty, staff, and students of the **Department of Chemistry**, RR Green University, for their dedication and effort in making this event a grand success. I would also like to thank respected President and General Secretary, ACT-Mumbai, for their support and encouragement. We also thank the participants, whose enthusiastic involvement enriched the discussions.

This seminar marks another milestone in our journey of promoting excellence in chemistry and contributing to a safer, sustainable, and interconnected global community of chemists.





National Chemistry Day 2024 was celebrated on 10th December at CPS International School, Morena, in collaboration with the Association of Chemistry Teachers, HBCSE, TIFR, Mumbai. Hands-on activities were demonstrated by Chemistry Teacher Mr. Shiv Shesh Sharma, while Principal Dr. U. C. Jain delivered an insightful lecture on Chemistry in Our Everyday Life. Director Mr. Manav Tomar, blessed the students, encouraging their scientific pursuits.





Annual science fest "NIRANTAR 2023" at Isabella thoburn College, Lucknow

CCITC Annual Science Fest 'Nirantar - A Quest Never at Rest" was organized by the department of chemistry Isabella Thoburn college on Tuesday 1st October 2024 in collaboration with Association of Chemistry Teachers (ACT) and Uttar Pradesh academy of sciences . Prof Alok Dhawan Director CBMR , President UPAS, Dr. Farhat Nigar Jaffery, our alumna of 1964 batch and well known scientist retd from CSIR-IITR , Prof Abha Chandra, our alumna of 1978 batch and at present , Dean Faculty of medicine, Integral university , Dr E S Charles president IT College and Dr.P Singh off. Principal IT College, Prof Seema Joshi Head

Department of Chemistry I.T. College inaugurated the festival by ceremonial lighting of the lamp. Distinguished guests and good number of alumnae joined the festival as judge and as special guests.

Chief Guest, Prof. Alok Dhawan especially spoke at length about the importance of developing a scientific mindset in one's daily life. He advised participants and spectators to take advantage of opportunities whenever they present themselves.Dr. F. N. Jaffery said "Science and technology are omnipresent and students should understand its importance." She also talked about the reticence of Indian scientists in looking at relatively cheap but effective innovations. She called the fest as concourse of creativity and science.



ProfAbha Chandra emphasized the importance of science and technology

More than 300 students from 15 school and colleges across the city participated in the festival. Prof Seema Joshi, Head department of chemistry explained importance of this festival as to present different strategies in combination with different groups of students to improve



their learning outcome. The festival provided interaction between teachers, students, learning environment and learning tasks. To reignite a passion for the sciences 8 events were organized Debate and science thespian gave opportunity to the students to develop critical thinking, explore their artistic skills, and challenging scenarios. Mnemonics was well appreciated by all the participants. Chief guest GP captain Rachana Joshi Director University education Air headquarters South Block New Delhi, gave away prizes to the winners.

The event concluded with the valedictory ceremony with Isabella Thoburn College being declared the overall Champion while the Army public school, Sardar Patel Marg, Lucknow walked away with the First Runner-Ups.







Academic Participation of ACT Members

- 1. **Prof Dr. Sudesh Ghoderao**, Member of ACT West Zone has delivered a lecture on 'Miraculous Chemistry demonstrations and Development of Scientific Temper' at Arts, Commerce and Science College, Deola, Dist. Nashik on 10 Sep 2024.
- 2. Prof. M. Swaminathan, Member of ACT South Zone, Delivered Invited Talk on the topic Innovate Technologies to Sustainable Development Goals (SDG)in an International E-Conference organized by Maharishi University of IT, Lucknow and IUNC on 10 th October 2024.
- **3. Prof. D. V. Prabhu**, President of ACT, as an Editor for the edited book titled Futuristic Trends in Chemical Material Science and Nano Technology, published by Interative International Publishers, 2024.
- 4. **Prof. Wasudeo Gurnule**, Secretary of ACT West Zone, as an Editor for the edited book titled Futuristic Trends in Chemical Material Science and Nano Technology, published by Interative International Publishers, 2024.
- **5. Prof. Wasudeo Gurnule**, Secretary of ACT West Zone, as Chairperson at the National Conference on Recent Advancements in Chemistry and Environmental Sciences, organized by the Department of Chemistry, SRM Insitute of Science and Technology, Ramapuram, Chennai, in association with ACT, Mumbai, on 27th September 2024.
- 6. Prof. Wasudeo Gurnule, Secretary of ACT West Zone, Delivered a Invited Talk at the National Conference on Recent Advances in Chemical Sciences for Sustainable Development: Lab to Land sponsosred by PM-USHA in collaboration with ACT Mumbai, organized by the School of Chemical Sciences, Swami Ramanand Teerth Marathwada University, Nanded, Maharashtra on 8th October 2024.
- 7. **Prof. Wasudeo Gurnule**, Secretary of ACT West Zone, Received Best Teacher Award by the hands of Dr. Arun Pawar, President of the Society, Mahatma Phule Education Society, Nagpur, 20th October 2024.
- 8. Prof. Wasudeo Gurnule, Secretary of ACT West Zone, delivered Invited Talk at the Six Days Faculty Development Programme on Rare Earth based Nanomaterials for various applications organized by the Department of School of Humanities and Sciences, Ramdeobaba University Nagpur sponsosred by AICTE-ATAL on 14th December 2024.
- **9. Prof. Wasudeo Gurnule**, Secretary of ACT West Zone, Delivered an Invited Talk on An Overview of Elastomers: Mechanical, Thermal and Rheological Properties of SBR Nanocomposites with Carbon Black Nanofiller at the 5th International Conference organized by Kathmanu Symposia on Advanced Materials at Tribhuvan University, Kathmandu, Nepal on 22nd October 2024.

<u>Report of visit to Department of Chemistry, Lancaster University, UK</u> by Prof. Dr. Sudesh Ghoderao, Member, EC, ACT

Prof. Dr. Sudesh Ghoderao, Member of Executive Council, Association of Chemistry Teachers (ACT) has actively participated in an international conference organized by Lancaster University, UK on 19-20 Sep 2024. He has used the time available to visit Chemistry Department of the university. Dr Nicholas Evans, Senior lecturer and Head of Department had kindly permitted for the short visit of Dr. Sudesh Ghoderao and explained him about the availability of infrastructure, various laboratories, research groups, research themes, research facilities like BatLab, Elemental analysis, Magnetic resonance, Mass Spectrometry, X ray etc. Dr. Sudesh Ghoderao had discussed with Prof Dr Nicholas Evans about the research activities at Lancaster University and also briefed him about the activities of Association of Chemistry Teachers (ACT).



Dr. Nicholas Evans, Head, Dept of Chemistry, Lancaster University, UK introducing about department and laboratories to Prof. Dr. Sudesh Ghoderao (PC: AJ, London, UK)



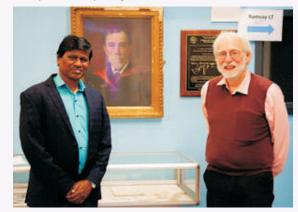
Prof. Dr. Sudesh Ghoderao viewing the thermocouples and a display of research activities with Dr. Nicholas Evans, Head, Dept of Chemistry, Lancaster University, UK (PC: AJ, London, UK)

Report of visit to University College of London (UCL), London, UK by Prof. Dr. Sudesh Ghoderao, Member, EC, ACT

Prof. N. Sathyamurthy, Founder President of ACT noticed that Dr. Sudesh Ghoderao, Member, EC, ACT is in London, UK in Sept 2024. So, he asked him to visit the University College of London, UK and meet his research colleague, Prof Jonathan Tennyson, Massey Professor of Physics and fellow of The Royal Society, Dept of Physics and Astronomy, UCL. After contact through email, Prof. Jonathan invited Dr. Sudesh Ghoderao for a short meeting. Dr. Sudesh Ghoderao had discussed with Prof. Jonathan Tennyson and other faculty members of the department about the research activities at UCL and also briefed them about the activities of ACT and presented to them the current copies of NEWSLETTER of ACT which has an article of Prof. N. Sathyamurthy. They found the NEWSLETTER of ACT informative and praised the activities of Association of Chemistry Teachers (ACT). Prof. Jonathan have also arranged and guided Dr. Sudesh Ghoderao during the short visit of Dept of Chemistry of UCL too.



Dr. Sudesh Ghoderao presented the copies of NEWSLETTER of ACT to Prof. Jonathan Tennyson, Massey Professor of Physics and fellow of The Royal Society, Dept of Physics and Astronomy, University College of London and had discussion with his colleague on 26 Sept 2024 (PC: AJ, London, UK)



Dr. Sudesh Ghoderao with Prof Jonathan Tennyson at Dept of Chemistry, UCL, London. (PC: AJ, London, UK)



Dr. Sudesh Ghoderao at Royal Society of Chemistry (RSC) office, Burlington, Piccadilly, London, UK

News/Views and More

<u>Researchers have introduced Aurora, a powerful AI model</u> promising faster, more accurate climate and weather forecasts.

As climate-related disasters become more intense and frequent, a team of international researchers has unveiled Aurora, a powerful new AI model built to transform how we forecast the environment. Aurora delivers faster, more accurate, and more affordable predictions for critical areas like air quality, ocean waves, and extreme weather events. Trained on over a million hours of Earth system data, Aurora represents a major leap forward. Scientists believe it could reshape the way we prepare for natural disasters and tackle the challenges of climate change.

From devastating floods in Europe to the growing strength of tropical cyclones around the globe, the climate crisis has made reliable forecasting more important than ever. Traditional methods depend on highly complex numerical models developed over decades, which require massive supercomputers and large expert teams. Aurora offers a smarter and more efficient solution by harnessing the power of artificial intelligence.

Machine learning at the core

"Aurora uses state-of-the-art machine learning techniques to deliver superior forecasts for key environmental systems—air quality, weather, ocean waves, and tropical cyclones," explains Max Welling, machine learning expert at the University of Amsterdam and one of the researchers behind the model.

Unlike conventional methods, Aurora requires far less computational power, making high-quality forecasting more accessible and scalable—especially in regions that lack expensive infrastructure.



Trained on a million hours of earth data

Aurora is built on a 1.3 billion parameter foundation model, trained on more than one million hours of Earth system data. It has been fine-tuned to excel in a range of forecasting tasks:

- Air quality: Outperforms traditional models in 74% of cases
- Ocean waves: Exceeds numerical simulations on 86% of targets
- Tropical cyclones: Beats seven operational forecasting centers in 100% of tests
- High-resolution weather: Surpasses leading models in 92% of scenarios, especially during extreme events

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Forecasting that's fast, accurate, and inclusive

As climate volatility increases, rapid and reliable forecasts are crucial for disaster preparedness, emergency response, and climate adaptation. The researchers believe Aurora can help by making advanced forecasting more accessible. 'Development cycles that once took years can now be completed in just weeks by small engineering teams,' notes AI researcher Ana Lucic, also of the University of Amsterdam. "This could be especially valuable for countries in the Global South, smaller weather services, and research groups focused on localized climate risks."

"Importantly, this acceleration builds on decades of foundational research and the vast datasets made available through traditional forecasting methods," Welling adds. Aurora is available freely online for anyone to use. If someone wants to fine-tune it for a specific task, they will need to provide data for that task. "But the 'initial' training is done, we don't need these vast datasets anymore, all the information from them is baked into Aurora already," Lucic explains.

A future-proof forecasting tool

Although current research focuses on the four applications mentioned above, the researchers say Aurora is flexible and can be used for a wide range of future scenarios. These could include forecasting flood risks, wildfire spread, seasonal weather trends, agricultural yields, and renewable energy output. "Its ability to process diverse data types makes it a powerful and future-ready tool," states Welling. As the world faces more extreme weather—from heatwaves to hurricanes—innovative models like Aurora could shift the global approach from reactive crisis response to proactive climate resilience, concludes the study.

<u>Startling Health Risk:</u> <u>"Normal" Sodium Levels Linked to Heart Failure</u>

New findings from a study of over 400,000 healthy adults indicate that even sodium levels within the high end of the normal range may be linked to an increased risk of hypertension and heart failure.

A major new study from <u>Bar-Ilan</u> <u>University</u> has uncovered a surprising link between higher sodium levels and serious heart conditions, even when those levels are still considered "normal." People with sodium at the upper end of the normal range were found to be significantly more likely to develop high blood pressure and heart failure, two of the most common chronic diseases as we age.



The research examined electronic health records spanning 20 years, from 2003 to 2023, covering more than 407,000 healthy adults who receive care through Leumit Healthcare Services, one of Israel's top health providers. It is one of the largest and most detailed studies ever to explore how hydration levels may impact long-term heart health. The findings were recently published in the *European Journal of Preventive Cardiology*. Among the key findings:

- Sodium levels of 140–142 mmol/L (still within normal range) were linked to a 13% higher risk of hypertension.
- Levels above 143 mmol/L were associated with a 29% higher hypertension risk and 20% higher risk of heart failure
- Nearly 60% of the healthy adult population had sodium levels in these risk-associated ranges

Sodium, which is routinely tested in standard blood tests, has long been considered normal within the 135–146 mmol/L range. But this study challenges that assumption, suggesting a strong, long-term association between higher sodium levels and cardiovascular risk, even among those considered otherwise healthy.

Controlled for Confounding Variables

These associations remained strong even after adjusting for age, sex, BMI, blood pressure, smoking, and potassium levels. The analysis excluded individuals with conditions that affect water balance to ensure a more accurate reflection of hydration-related risk.

"Our findings point to hydration as a critical and overlooked part of chronic disease prevention. A simple blood test might flag people who could benefit from basic lifestyle adjustments—like drinking more water, which reduces sodium levels," said the study's lead author, Prof. Jonathan Rabinowitz, from the Weisfeld School of Social Work at Bar-Ilan University. Rabinowitz collaborated on the research with Dr. Natalia Dmitrieva, from the National Institutes of Health (NIH).

"Hydration is often overlooked in chronic disease prevention," added Rabinowitz. "This study adds compelling evidence that staying well-hydrated may help reduce the longterm risk of serious conditions like hypertension and heart failure."

With population aging and chronic disease rates on the rise, these insights may inform future clinical guidelines, preventive screenings, and public health campaigns aimed at encouraging healthy hydration habits.

List of ACT Life Members During Sept' 2024 to Dec' 2024

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Sr. No.	Names	LM No.	Institution
1	Dr. Nirmala Devi	2637	Girijananda Chowdhury University, Hathkhowapara, Azara, Guwahati, Assam - 781017
2	Dr. Shailesh Keshavraoji Mandavgade	2638	G. H. Raisoni College of Engg. & Management, Nagpur Hingna-wadi Road, Nagpur - 440028
3	Dr. Mukesh Gupta	2639	ISR, IPS Academy Indore
4	Dr. Pankaj Mittal	2640	Department of AppliedScience (Chemistry), Anand Engineering College, Agra (U.P.) - 282007
5	Dr. Deepa Devendra Parab	2641	Guru Nanak Khalsa College of Arts, Science & Commerce, Mumbai 400 019
6	Shivshesh Sharma	2642	C.P.S. International School, Nawali Badagaon, Madhya Pradesh - 476001
7	Dr. Satish K. Pardeshi	2643	Department of Chemistry, Pune University - 411007
8	Dr. Vivek Chandulal Badgujar	2644	Department of Chemistry Pratap College, Amalner - 425101
9	Dr. Santosh B. Katariya	2645	SIES College of Arts, Science & Commerse, Sion (W), Mumbai - 400 022
10	Dr. Kirtikumar C. Badgujar	2646	Department of Chemistry, SIES College, Sion (W), Jain Society, Mumbai - 22
11	Dr. Harmeet Kaur Kohli	2647	Department of Chemistry, Guru Nanak Khalsa College, Matunga - 400 019
12	Dr. Abhimanyu K Yadav	2648	Guru Nanak Khalsa College, Matunga, Mumbai - 400 019
13	Dr. Parul Balaji Khurana	2649	Guru Nanak Khalsa College, Matunga, Mumbai - 400 019
14	Pritam Avinash Shete	2650	R.N.C. Arts, J.D.B. Commerce & N.S.C.Science College, Nashik - 422 101

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Sr. No.	Names	LM No.	Institution
15	Dr. Tapan Thakuria	2652	Department of Chemistry, Handique Girls College, Guwahati, Assam - 781001
16	Dr. Ayekpam Bimolini Devi	2653	Department of Chemistry, Mizoram University, Mizoram - 796004
17	Dr. Anamika Kalita Deka	2654	Dept. of Chemistry, Central Institute of Technology, Kokrajhar, BTP, Assam - 783370 (India)
18	Dr. Bikash Kumar Sarmah	2655	Department of Chemistry, Sonari College, Sonari, Charaideo, Assam -785690 INDIA
19	Dr. Manashjyoti Konwar	2656	Department of Chemistry, Dibru College, Boiragimoth, Dibrugarh, Assam - 786003
20	Dr. Thanhmingliana	2657	Department of Chemistry, Pochhunga University College, Aizaool, Mizoram - 796001
21	Dr. Chanambam Victory Devi	2658	Department of Chemistry, Pachhunga University College, Aizawi - 796001
22	Dr, Jay Prakash Rajan	2659	Dept. of Chemistry, PUC, MZU, Aizawl, Mizoram - 796001
23	Dr. Kalyanjyoti Deori	2660	Department of Chemistry, Dibrugarh University, Dibrugarh, Assam - 786004
24	Dr. Apurba Dutta	2661	Department of Chemistry, DHSK College, Dibrugarh, Assam - 786001
25	Prof. Sanjay Basumatary	2662	Dept. of Chemistry, Bodoand University, Kokrajhar, Assam - 783370
26	Dr. Anirban Garg	2663	Department of Chemistry, Jagannath Barooah University, Jorhat-01, Assam - 785001
27	Dr. Preeti Sandeep Zade	2664	Terna Engineering College, Sector-22, Plot-22, Phase-II, Nerul(W), Navi Mumbai - 400 706
28	Dr. Sarakula Prasanthi	2665	Dept. of Chemistry, AKNI, TGP, Andra Pradesh - 534101
29	Dr. Ketkee P. Dharkar	2666	L.A.D. And Smt. R. P. College for Women, Shankar Nagar, Nagpur - 440010

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	List of ACT Life Memb	ers During	May' 2024 to Aug' 2024
Sr. No.	Names	LM No.	Institution
30	Dr. S. Farook Basha	2667	PGD Research Dept. of Chemistry, Jamal Mohamed College (A), Trichy, Tamilnadu - 620020
31	Dr. A. Shalini	2668	Department of Chemistry, Faculty of E&T SRMIST, Ramapuram, Chennai-600089
32	Dr. K. Manikandan	2669	Department of Chemistry, Faculty of E&T SRMIST, Ramapuram, Chennai-600089
33	Dr. G. Kaladevi	2670	Department of Chemistry, Faculty of E&T SRMIST, Ramapuram, Chennai-600089
34	S. Ida	2671	Department of Chemistry, Faculty of E&T SRMIST, Ramapuram, Chennai-600089
35	Dr. G. Nithya	2672	Department of Chemistry, Faculty of E&T SRMIST, Ramapuram, Chennai-600089
36	J. Daisy Rani	2673	Department of Chemistry, Faculty of E&T SRMIST, Ramapuram, Chennai-600089
37	Dr. K. Sampath Kumar	2674	Department of Chemistry, Faculty of E&T SRMIST, Ramapuram, Chennai-600089
38	Dr. S. Sowmya	2675	Department of Chemistry, Faculty of E&T SRMIST, Ramapuram, Chennai-600089
39	Dr. Suman	2676	Department of Chemistry, Faculty of E&T SRMIST, Ramapuram, Chennai-600089
40	Dr. E. Pandian	2677	Department of Chemistry, Faculty of E&T SRMIST, Ramapuram, Chennai-600089
41	Dr. Vijay Manoharrao Tangde	2678	PGTD Chemistry, R.T.M. Nagpur University, Nagpur-440007 (Maharashtra)
42	Dr. Abhishek Rai	2679	University Department of Chemistry, L.N.Mithila University ,Darbhanga, Bihar -846008
43	Dr. Sankara Rao Miditana	2680	Government Degree College, Puttur, Titupati, Andhra Pradesh - 517583 (India)
44	Vikas Singh	2681	2, Rana Pratap Marg, Hazrat Ganj, Lucknow - 2206001

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