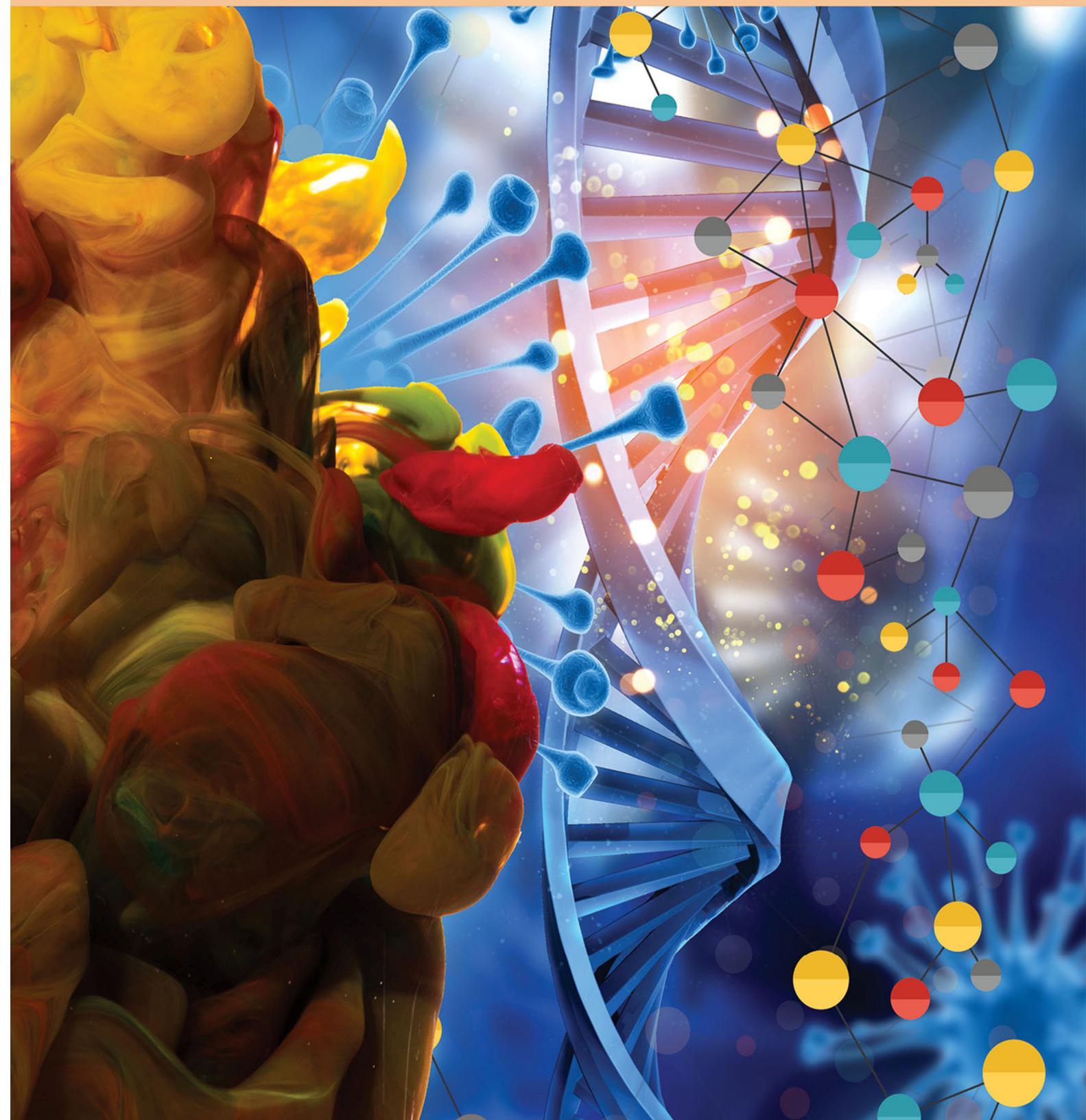




ASSOCIATION OF CHEMISTRY TEACHERS

NEWS LETTER

ISSUE : 10, JANUARY - APRIL 2018



ACT News Letter, Issue 10

January – April, 2018

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Disclaimer : The views expressed are that of the authors and ACT is not responsible in any way for them.

Association of Chemistry Teachers Promoting Excellence in Chemistry Education

From the Editorial Desk... ✍️

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Prof. Mannam Krishnamurthy, Editor

Varsity Education Management Limited, Hyderabad

We are happy to inform that the contributions of ACT ranges from International Olympiads, organizing seminars, science exhibitions, workshops, expert invited talks, innovating conceptual science experiments, conferences, talent search examinations, training faculty and students etc.

We are bringing in the present issue of the news letter with the reports on the ACT activities, latest innovations, new trends, views and news. We have also included reports of the National Science Day Celebrations-2018, CONTECH-2018 and Chemistry Teachers Workshops organised jointly by Royal Society of Chemistry and ACT.

We invite good suggestions and better contributions from the readers to get best output of the future issues.

The Craft of Corrupt Chemistry

There is one chemical that is igniting much fuss these days – New Zealand legislators want it banned; South African leaders are asking why it is still being used; and, closer home in Sri Lanka, it is being discussed in parliament. Last year, Europe witnessed a bitter, high volume contestation on whether it should renew its licence for use. It first dithered; then gave a limited renewal and finally in November 2017, it agreed to a five-year extension. But the debate is raging.

It is argued that the chemical is toxic to humans; it is indicated for being “probably carcinogenic”. People exposed to the chemical have shown to have higher incidence of non-Hodgkin lymphoma and kidney ailments. It is also said to be responsible for the disappearance of bees and butterflies across the world.



Source : Down To Earth

But the chemical in question is a wonder substance like the other marvels of industrial discoveries. In fact, it would be fair to say that farmers who use it on their fields are addicted to it. It is used as a herbicide-instead of manually removing weeds, farmers spray this chemical before sowing to clear the fields; on standing crops and then before the harvest. Now, with genetic modification of crops, the scope of using this chemical has also expanded. Crops are designed to be resistant to only this chemical so that farmers can now spray without any worry. This “wonder chemical” is the US agrochemical giant Monsanto’s glyphosate, also known as Roundup.

The question is if there is evidence of its toxicity, then why are governments not banning it? Why the continued fuss? Why can’t we decide what is good or bad. Is it only about corporate power, or is it also about the inadequacy of science? Is it about the lack of evidence of toxicity, or is it about the complicity of science and scientists? In the book, *Whitewash; the Story of a Weed Killer, Cancer and the Corruption of Science*, US based journalist, Carey Gillam, describes how science has spun and spun on this chemical.

The scientific challenge has been the “proof” on the exposure on mice. As way back as in 1983, when several groups of mice were administered diets that included glyphosate, USEPA had concluded that the study showed higher incidence of renal tubular adenomas, a rare kidney tumour even in the control group of mice. In other words, glyphosate was not the cause. It was natural.

This study and others were used to show “conclusively” that there was no problem with the chemical. USEPA was pushed aside. Carey Gillam explains how in all cases and, again and again, science was manipulated; scientists were bought; and, voices within the institution shut down. In all the cases, Monsanto was behind the production of this “science”.

Now, in March, 2018, the EU approved the merger of the two chemical giants, Germany’s Bayer and USA’s Monsanto. The interests of Germany in voting for glyphosate in the EU can now be even better understood.

But the controversy is not going away easily; nor should it. As was said before, science can be defeated, but only temporarily. The truth will prevail. The problem is that this will happen only after many have suffered and died because science is in the hands of the powerful and it is easily corrupted.

Academic Participation of ACT Members

Dr. Paritosh Rana, ACT life member and Chemistry faculty Sonopant Dandekar College, Palghar, Maharashtra was recognized with certificate of outstanding contribution in Reviewing 'Talanta' of Elsevier Publishers.

Prof. Prem Mohan Mishra, Vice President ACT East Zone, organised three day UGC National Seminar on 'Applications of Green Chemistry in Remediation of Environment' at M.L.S.M. College, Darbhanga, during 12-14 January 2018.

Dr. Nripendra Nath Talukar, Secretary ACT North-East Zone, organised a workshop on 'Importance of Science Education with special reference to Chemistry', at Goreswar Science College, Baksa Dist., Assam on 30, January 2018.

Dr. S. Prasad Singh, Secretary ACT East Zone, coordinated the National ACT examination CONTECH. The two hour test was conducted on 30th January 2018. ACT certificates of appreciation were issued to college coordinators and book prizes were given to students scoring 60% or more.
(A detail report on page 6)

Prof. Mannam Krishnamurthy, ACT EC member, gave an invited talk on 'Measures and Methods of Clean Environment' at the UGC National Seminar organised by S.V.R.M. College, Nagaram, Guntur Dist., on 24th February 2018.

Dr. Hemanth Pande, Vice President ACT West Zone, performed his 377th Chemical Magic Show at the First Annual Convension of Association of Chemistry Teachers Goa on 24th February 2018.

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Dr. P.V.S. Machiraju, Vice President ACT South Zone, acted as chief guest for the National Science Day, organised at Government Degree College for woman, Nidadavol, West Godavari Dist., Andhra Pradesh on 28th February 2018.

Dr. M. Swaminathan, ACT EC member, presided the inaugural session of the National Symposium on New Trends of Research in Solid State Chemistry at Jammu University on 4th March 2018. **Dr. M.R.R. Prasad** gave an invited talk, in the symposium.

Dr. M.R.R. Prasad, ACT Life member, participated in the Indian Space Biology Program, held at Jawaharlal Nehru University, Delhi on 8th March 2018.

Dr. W. Gurnule, ACT EC member, has delivered key note address at the National Conference organised by Dr. C.V. Raman University, Kota, Chattisgarh state on 9th March 2018. **Dr. Manish Upadhyay**, HOD Chemistry of Dr. C.V. Raman University acted as Convener for the National Conference.

Prof. Brijesh Pare, Vice President ACT Central Zone, takes charge as National Coordinator on behalf of ACT in organizing Royal Society of Chemistry 'The Yusuf Hamied Inspirational Chemistry Workshop for Science Teachers'. There are more than ten proposals from different parts of India, to conduct the proposed workshops, which will help school teachers.

(Some reports on page 14 and 15)

ACT Members at International Venues

ACT life members and teaching faculty from SVRM College, Nagaram, **Mr. M. Sudhakara Rao**, **Dr. K. Surendra Babu** and **Dr. M. Krishnamurthy**, visited the Department of Chemistry, Westville Campus, University of Kwazulu-Natal, Durban, South Africa on 5th March 2018. They have discussed on modern teaching methods and advanced research facilities with **Prof. Sreekantha B. Jonnalagadda**.



Dr. Mannam Krishnamurthy Chief Executive Dean, Varsity Education Management Limited and EC member ACT gave an invited talk on 'Recent Advances in Fuel Technology' at University of Kwazulu-Natal, Durban on 6th March 2018. The talk was appreciated by **Prof. Neil Koorbanally**, HOD of Research, School of Chemistry and Physics.

ACT-CONTECH-2018 : A Report

ACT-CONTECH, a concept test in chemistry at national level finds its usefulness to teachers and students in knowing the pulse of chemistry teaching and learning at UG level and thus helps teachers to take appropriate action. This test is a big boost for the students to improve in the subject and to assess their conceptual understanding in chemistry. With this view CONTECH has regularly been conducted annually right from 2010.

Initially CONTECH-17 was planned to be held on 1st November 2017 with the consent of ACT-Zonal officials and the General Secretary. In the ECM held during NCCT-17 at Kakinada, it was resolved to conduct the **Test on 25th January 2018**. Accordingly, all concerned were notified.

A team of question setters was constituted. Finally shortlisted 80 Multiple Choice Questions with four options for each question and maximum time limit of 2 hours were arranged in proper format using minimum possible number of pages along with answer key.

The National Coordinator along with ACT General Secretary and fellow friends tried the level best to motivate and inspire teachers to be a part of this national event for mobilizing students in all parts of our country. Test was conducted on 25, January 2018, successfully.

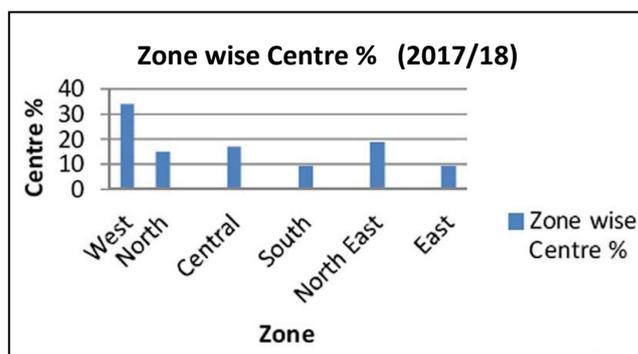


Fig 1A

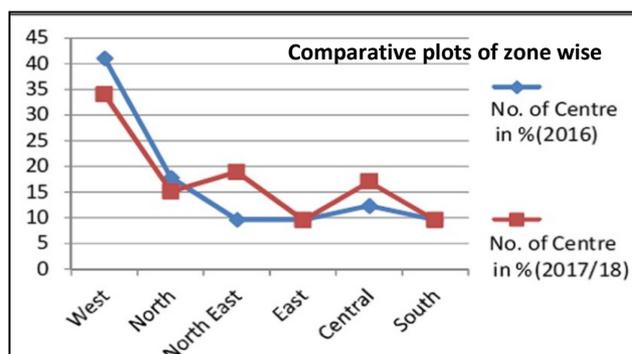


Fig 1B

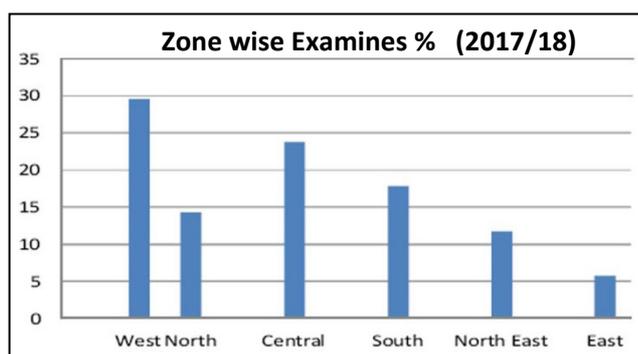


Fig 2A

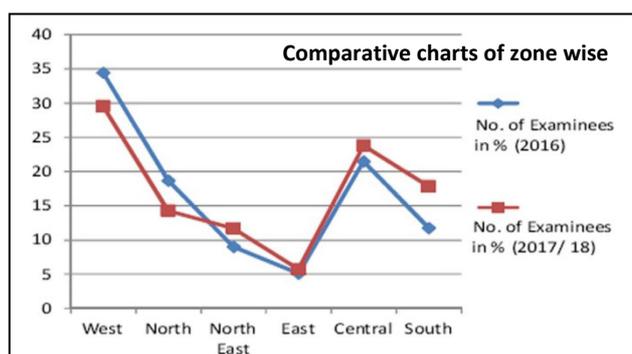


Fig 2B

The candidates getting 30% marks and above in the test were given participation certificate, whereas Book prizes were given to students scoring 60% or more. Certificate of appreciation were issued to all College Coordinators and Local Coordinators after successful conduct of the Test. Letter of appreciation was mailed to all those Principals where from maximum participation is ensured.

ACT takes the opportunity to thank college coordinators, paper setters, invigilators and evaluators for their dedicated efforts in making CONTECH-2018 successful.

-Report by **Dr. S.P. Singh, National Coordinator**

National Science Day Celebrations-2018

National Science Day Celebrations were held at **Shree Velagapudi Ramakrishna Memorial College, Nagaram, Guntur Dist., Andhra Pradesh**, on 28th February 2018. These celebrations were organized jointly by ACT and RT Education Improvement Society. The events were coordinated by **Dr. Mannam Krishnamurthy**, ACT EC member.

The inaugural meeting was chaired by Mr. M. Sudhakara Rao, Principal and ACT Life member. Prof. V. Sivarama Prasad, Osmania University, Hyderabad; Prof. K. Somasekhara Rao, Acharya Nagarjuna University, Guntur; Dr. G. Ashok Kumar, MVGRR College, Bhattiprolu and Dr. Ch. Manikya Rao, Bapatla College of Arts and Science, Bapatla explained the theme.



The subject experts gave their respective invited talks on 'Science and Technology for Sustainable Future'.

Debate competition 'on the Role of Chemistry for Rural Development' was arranged for under graduate and post graduate students. More than one hundred students participated in the competition.



Dr. Mannam Krishnamurthy, Varsity Education Management Ltd., Hyderabad and Dr. Gogineni Hanumantha Rao, S.V.R.M. College, Nagaram acted as judges and best speech performances by two students were awarded with prizes.

National Science Day was celebrated jointly by Helping Hands Group Academy and ACT at **D.M. College of Science, Imphal, Manipur**, on 28th February 2018. **Dr. M.H. Halim Shah** acted as convener of these celebrations.

The Advanced Level Institutional Biotech Hub of **Dakshin Kamrup College**, Mirza in association with **Assam Science Society**, Dakshin Kamrup branch conducted a day long programme and **celebrated National Science Day on 28th February, 2018**. The programme was held at K.K. Handique conference hall of D.K. College, Mirza.



Noted Chemist and professor of Department of Chemistry, Guwahati University **Prof. Diganta Kumar Das** was the main resource person at the programme. While addressing the participants, Prof. Das threw light on the importance of elements in daily life of human. Prof. Das delivered his invited speech on a very interesting and important topic “No Metal No Life : More Metal No Life”. The programme was inaugurated by Dr. Ramesh Chandra Kalita, Principal as well as the President of Assam Science Society, Dakshin Kamrup branch and the chairman of the programme.

To spread the message of awareness for a better environment by plantation, earthen pots were distributed among the students of all academic departments of D.K. College. A green initiative was taken to promote the reuse of waste plastic for bottle gardening by using vermicompost produced in the college campus.



All the faculty members of D.K. College, Mirza, members of Science Society and students were the participants of the successful programme. **Dr. H.S. Kakati**, E.C. Member ACT, participated in the programme and briefed on ACT Chemistry activities. Pots were distributed on the National Science Day to encourage green plantation.

Subject Reports on Workshops and Conference

Workshop on Interaction between Academic and Chemical Industry

One day workshop on “Chemical Science-Interaction between academia and chemical industries”, Sponsored by Association of Chemistry Teachers, Mumbai was organised at **Dang Seva Mandal’s Dadasaheb Bidkar Arts, Science and Commerce College, Peth**, Dist-Nashik on January 15, 2018. This workshop was coordinated by ACT life member **Dr. R.B. Toche**.

The Workshop was inaugurated by Dr. V.T. Mathad, Vice-president of Megafine Pharma Ltd., Dindori and given key note address. He said that every year industries required 100s of quality control chemist. But the industries do not get trained chemist. Industries spend more than 6 month to train the new chemist. If the academic institute will train the students with basic required knowledge, it will help industries lot. Also students and teacher should give more emphasis to practical and project work along with industrial visits.



All the bachelor students have bright future in industries. Dr. Gorak Shinde, R & D Manager, Megafine Pharma Ltd. told the importance simple techniques such as distillation, chromatography, filtration and gave information about the working and safety measures of chemical industries.

Prof. M.N. Jachak, KTHM College, Nashik gave brief summary about the efforts taken by academic institute to enhance the practical skill amongst students. Now colleges are given hands on training to students.



Resource persons elaborated the way to create pathways to knowledge and technology transfer from academia to industries and vice-versa. Total 80 students and 15 teachers have been attended this. Students were understood about the job opportunities in industries and how to face the problems in employment.

Chemistry Conference

A conference on 'Chemistry Teaching, Sciencetoons and Experimentation' was organized by Dr. Mannam Krishnamurthy ACT EC Member, at Sri Chaitanya Techno School, Kankipadu Mandal, Andhra Pradesh on 24, Jan. 2018.

This one day conference was financially and academically supported by Association of Chemistry Teachers and Varsity Education Management Ltd.

The inaugural session was chaired by Mr. K. Ravindra Kumar, Life member ACT. Mr. G. Umamaheswara Rao, CAO, Sri Kalyana Chakravarthy Educational Trust, Vijayawada gave a welcome address. Dr. B.S. Rao, Chairman of Sri Chaitanya Educational Institutions gave the keynote address highlighting the importance of class room teaching.



Mr. K. Ravindra Kumar, Dean, Sri Chaitanya IIT Academy gave a demo experimentation in Physical Science. He linked the Chemistry teaching with practical chemistry.

Dr. M. Krishnamurthy, Chief Executive Dean, VEML, Hyderabad gave a presentation on 'Basics of Chemistry Made Visual'. In his presentation he explained easy methods of visual teaching techniques with the use of animations.



Dr. Pradeep K Srivastava, Principal Scientist (Retd.), Medicinal and Process Chemistry Division, CDRI Lucknow gave a talk on 'Sciencetoons – A tool of Teaching' and presented the effective science communication by using a novel class of science cartoons. He highlighted 'Bionics', a topic which made to learn Chemistry from Nature.

An essay writing competition was organized on 'Clean and Green Chemistry'. 310 students of class X participated in the competition. Best performances were awarded with prizes by ACT and a book-let 'Language of Chemistry' is distributed free to all participants.

Seminar cum Workshop

A Seminar cum Workshop on 'Popularization of Chemistry Concepts' was organised by ACT at Happy Valley School, Tadepalli, Nuzvid Revenue Division, Krishna Dist., Andhra Pradesh on 25 Jan. 2018.

The inaugural session was chaired by M. Dinesh Nair Madathil, Public Relations Officer, Happy Valley School, Tadepalli. **Dr. Mannam Krishnamurthy**, EC Member ACT coordinated the event and gave the key note address. The session was focussed on the adoption of concepts of chemistry and simple explanation methods to popularize chemistry.



Dr. Pradeep K. Srivastava, Dy. Director (Retd.) Central Drug Research Institute, Lucknow gave a popular presentation on crafting toons with chemistry and humor. He emphasized the importance of green chemistry and drug chemistry in human life.

Dr. M. Krishnamurthy, Chief Executive Dean, Varsity Education Management Ltd., Hyderabad illustrated popular Principles of Chemistry with the help of animations, in his talk entitled 'Chemistry Bigger than Life'. **Dr. Kosaraju Koteswara Rao**, Director, Gowtham Concept School, Guduwada was honoured by ACT for conducting a Workshop on Conceptual Learning of Chemistry. The workshop made the involved student participation to distinguish the basic differences between electron transfer reactions and no electron transfer reactions.



An elocution competition was conducted on 'The role of Chemistry in Everyday Life'. On the basis of merit, two best performances were rewarded with prizes. About 360 high school students of Class VIII to X participated in the one day event.

Lecture Series Workshop

Department of Chemistry, BB Das NIIT, Lucknow organized a lecture series on 16th March, 2018, Friday in collaboration with Association of Chemistry Teachers. Prof. Shraddha Sinha, Secretary ACT North Zone coordinated the workshop.

The workshop was inaugurated by Prof. V.K. Singh, Director, BB Das NIIT and he gave welcome speech. There was a lecture by Prof. A.K. Saxena, which encompassed the benefits of chemistry in Engineering and Medical Sciences. Emeritus scientist from CSIR- CDRI, Prof. Saxena was an extempore on the topic and with his flamboyant delivery of words he left the students satisfied after an extensive question answer round. Followed next was a brain storming session as Mr. Avinash Shukla, CEO, Ramraj Services, delivered his lecture on “Learn to earn” using chemistry while presenting innovative ideas before students to put their ideas into shape and also promised them funds and platform.



The session gained high applause, towards closure as Prof. Shraddha Sinha, Head, Department of Chemistry announced the names of the winners of poster competition entitled “Reduce & Recycle” and the essay competition “Environmental imbalances: Hazards and our role”.

An exhibition by students pursuing “Polymer Science and Technology” led by Dr. Vibha Tiwari, Department of Chemistry, depicted various uses and recycling ideas of plastics and polymers used in our daily life. The best exhibits were applauded and awarded.

All the winners of trophies and certificates had an interactive session with the guests and audience with the joint effort of Dr. Shailja Pandey and Dr. Vandana Grover, in the presence of faculty members of various departments of BBDNIIT.



The programme was concluded with prize distribution ceremony, mementoes were presented to the guests, followed by tea and a group photograph to commemorate the event.

National Conference on Green Chemistry

One day National Conference on 'Green Chemistry : The Only Way to Sustain' was organised by Department of Applied Science & Technology and Centre for Environmental Research & Technology, at Pacific School of Engineering, Surat on 17th March, 2018. This conference was sponsored by ACT, GUJCOST, GTU, GPCB, ISTE and IJFTET. The conference was well attended by eminent academicians, faculty members and students from reputed technical and educational institutions.

The conference was inaugurated by the **Dr. K.R. Desai**, Director, Department of Chemistry, Gujarat Technical University; Dr. N.B. Patel, HOD of Chemistry and Dr. Y.C. Rotliwala, Principal, PSE, Surat. Dr. Y.C.R. Rotliwala in his inaugural address welcomed the young and enthusiastic minds to contribute in the field of green chemistry. The inaugural address was followed by the overview by **Dr. H.S. Tailor**, Convener of the National Conference.



The inauguration was followed by the key note address of Dr. K.R. Desai on the topic 'Need of Green Chemistry', where he explained about how a Chemical Engineer can adopt a green way to for a sustainable development.

The second session started with the expert lecture of Dr. N.B. Patel on 'Microwave and Molecular docking'. A total of 130 Participation was achieved from more than 11 different institutions. 37 Research papers were presented by research scholars and academicians from different institutions in the two technical sessions. All the research papers will be published in the UGC approved journal IJFTET.



It was proposed to prevent further environmental damage, to encourage more young people into the industry, green product design, public acceptability needs to be raised by adoption of greener and cleaner processes, as ways to sustain.

The Conference was concluded with a vote of thanks by Dr. Himanshu Patel, Coordinator of the National Conference. All the sponsors, advertisers, delegates, representatives from the different colleges and students for their magnanimous support was property acknowledged.

RSC-ACT Workshops for Chemistry Teachers

Royal Society of Chemistry (RSC), Cambridge (UK) and Association of Chemistry Teachers (ACT) conducted 'The Yusuf Hamied Inspirational Chemistry Workshop for Science Teachers' at **Sri Chaitanya Girls PU College, Ballari, Karnataka** on 11-12, April 2018. This chemistry programme was co-ordinated by **Dr. Mannam Krishnamurthy**, EC member ACT.

The inaugural session was chaired by Mr. Payyavula Sanjappa, Principal of Girl's PU College, Havambhavi, Ballari. **Dr. P. Radha Krishna**, Associate Professor, Government College Ballari, was the Chief Guest. He inaugurated the session by illuminating the lamp and advised participants to involve in the discussions and workshop practicals.



Dr. M. Krishnamurthy, Chief Executive Dean, Varsity Education Management Ltd., Hyderabad and coordinator of the workshop spoke on the ACT teacher friendly activities; Chemistry Education and Popularisation of Chemistry.

Dr. P.S. Kandagal, Teacher Developer of RSC acted as resource person. He conducted five sessions of the workshop. (a) Motivation and moving towards active learning ; (b) Strategies for effective teaching; (c) Particle nature of matter; (d) Chemical reaction and equations and (e) Demonstration of micro-scale experiments.



Free teacher books on 'Chemical reactions and equations' and 'The particle nature of matter' were distributed to all participants by RSC, in addition to one 'workbook'. ACT also distributed a book 'Language of Chemistry' to all 44 participants representing 18 Schools and 5 PU Colleges.

Questions and doubts raised by participants were answered. There was a very good feedback by participants on the workshop. Two representatives of HBCSE, Mumbai also participated in the two day workshop and useful observations on the proceedings were recorded.

Prof. Prem Mohan Mishra, Vice president ACT East Zone, coordinated two RSC-ACT workshops for Science Teachers, at **MLSM College, Durbhanga**, Bihar on 21-22 April and 23-24 April 2018.

A Two Days RSC-ACT Science Teachers Training Workshop under the banner of Yusuf Hamied Inspirational Chemistry Programme was organized on 28-29 April, 2018 at **C P International School, Farrukhabad** in collaboration of Royal Society of Chemistry and Association of Chemistry Teachers skills of teachers.

35 teachers from 16 different schools of Farrukhabad, Kannauj and Shahjahanpur participated in the Workshop. The main objective of the Workshop was to enhance the teaching skills of teachers with new tools for delivering and engaging effective chemistry lessons.

Dr. Mithlesh Agrawal, Director, C P International School inaugurated the workshop by lighting the lamp, along with guest of honor Resource person- RSC Ms. Alice Saji Philip; Mrs. Malvika Dubey, Director, Blue Bell School; Mr. Kanhaiya Lal Tiwari, Principal, Rosy Public School, Fatehgarh.



Dr. Umesh Chandra Jain, Principal C P International School, Coordinator of the workshop and ACT EC Member addressed the participants in the inaugural session and gave details of the Workshop.

The Workshop was held in three sessions. In the first session the RSC resource person Ms. Alice Saji explained the various innovative ways such as show me boards, Tarsia grid, small gp work, card sort activity, DART activity concept mapping with demonstration. The second session was begun with the discussion on “Particle nature of matter”. It was really a mind blowing session. In the third session “Chemical Reactions and Equations” all the participants performed Microscale Experiments.



Dr. Amar Srivastava, DAV College, Kanpur and ACT EC Member was the Chief Guest on the second day. He addressed the teacher participants during valedictory function. Every participant was presented with a set of three RSC books and a certificate of attendance and RSC resource person with a memento.

Views, News and more

World's first hydrogen tram begins operation in China



With water being its only emission, the tram emits no pollutants. No nitrogen oxides will be produced as the temperature of the reaction inside hydrogen fuel cells is controlled under 100 degrees Celsius.

The world's first hybrid electric tram powered by hydrogen fuel cells has started running in China, marking a big step in the application of green energy in public transport.

The tram, having three carriages with 66 seats, can run for 40 kilometers at a maximum speed of 70 kilometers per hour after being refilled with 12 kilograms of hydrogen.

The tram operates on a 136-year-old railway line in Tangshan City, one of China's earliest industrial cities, and links several of its industrial heritage sites.

A new definition for the mole

The definition of the mole is recently proposed and is likely to change from May 2019.

The value will stay broadly the same. $6.02214076 \times 10^{23}$, but it will no longer depend on the number of particles in a certain mass of ^{12}C .

Light is Dark



Mercury vapor lamps were replaced with sodium and halogen lamps. This replacement led to yellow orange and red glow in the place of brilliant white glow of mercury lights.

Now a days l.e.d bulbs are familiar for their economic usage of electricity. Even in India LED bulbs are popular in energy saving measures.

Recently a satellite data from 2012 to 2016 was analysis by National Oceanic and Atmospheric Administration of U.S.A. This analysis suggested the year by year increase in the light pollution by 2.2%. The bad effects of the light pollution includes deterioration of eco-balance.

Water less body bath

A synthetic liquid mixture was prepared recently at Indian Institute of Technology, New Delhi which can be applied to the body. This liquid mixture is able to remove dirt and bad odour of the human body. The new method is and useful in saving water.

Collapse of a tunnel at Punggye-ri nuclear weapon testing

More than 200 people are feared to have died when a tunnel caved in at North Korea's nuclear test site after its latest detonation, a Japanese news report said Tuesday. A tunnel collapsed at Punggye-ri in early September, days after North Korea conducted its sixth and largest underground nuclear test on September 3.

TV Asahi said, quoting unnamed North Korean sources. The accident was triggered by the test, TV Asahi added. Experts have warned that the underground tests could cause the mountain to collapse and leak radiation into the atmosphere near China's border. The latest test – the sixth at the site since 2006 – triggered landslides in the detonation area and beyond, according to satellite pictures taken the day after.



The image published by the 38 North website showed changes in the surface at at Punggye-ri where the ground had been lifted into the air by the tremors. Small landslides followed the course of stream beds. The blast caused a 6.3-magnitude earthquake, according to the US Geological Survey.

Hundreds suffocate and some dead in Syria

UNHRC commission also found that 'Sarin' was used in the Ghouta attack and indicated that perpetrators likely had access to chemicals from the Syrian army's stockpile.

Victims experienced symptoms including redness of the eyes, foaming from mouth, constricted pupils, blue facial skin and lips, severe shortness of breath and asphyxiation.

Syria has called the allegations of a chemical attack a 'fabrication' – as has its main ally, Russia. Several medical, monitoring and activist groups reported details of a chemical attack.



We conclude the present issue of the ACT News Letter here 

ASSOCIATION OF CHEMISTRY TEACHERS (Promoting Excellence in Chemistry Education)

c/o. Homi Bhabha Centre for Science Education (HBCSE, TIFR)

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www.associationofchemistryteachers.org



EC Meeting of ACT at HBCSE, Mumbai



The first EC meet of ACT 2018 was organised at Homi Bhabha Centre for Science Education, Mumbai on 8th March 2018. Prof. D.C. Deka, President of ACT chaired the meeting. Prof. D.V. Prabhu, General Secretary of ACT gave a report of ACT activities for the period October 2017 to March 2018.

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