

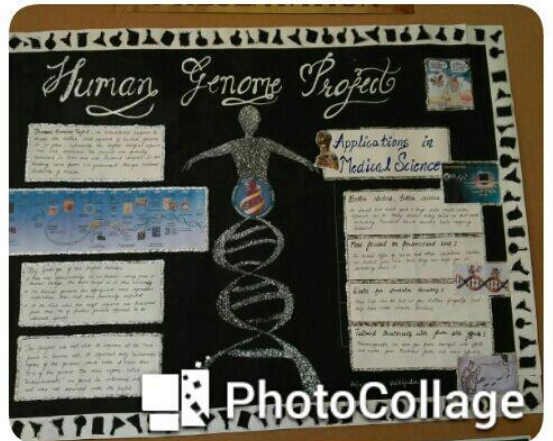
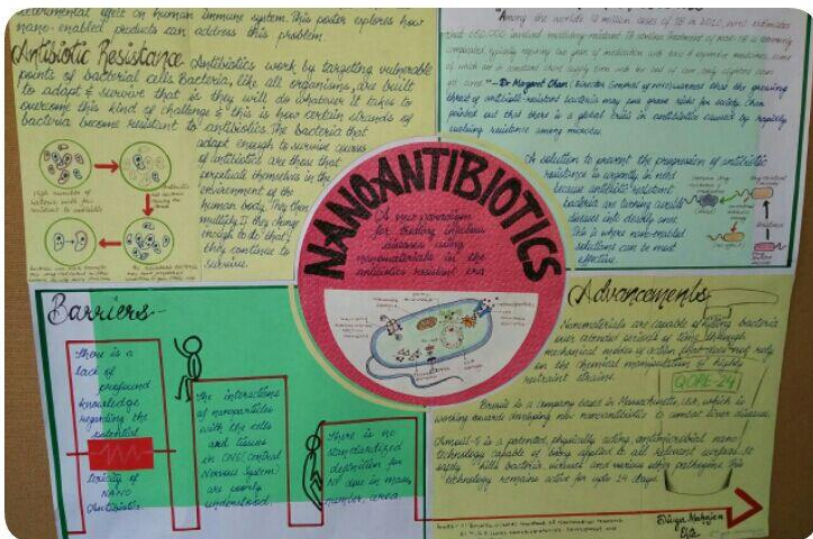
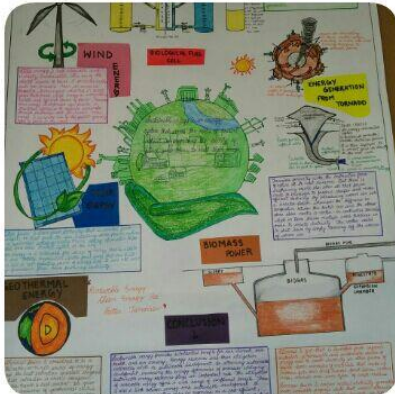


RASAYANI



Volume 16

2016-17



Chemistry (H) I Year



Row 1 (left to right) (sitting): Simran Chivan, Bhavana, Vibhuti, Shaivi, Sheetal Yadav, Ananya, Anshu Priya, Sakshi Jaiswal, Sonam, Priyanka Khichi, Anju, Khushboo Varshney, Priyanka Pruthi, Vandana, Neha Patheja, Ayushi, Nidhi Priya, Alka; Row 2 (left to right) Yashasvi, Pooja, Zahara, Nidhi Singh, Elizabeth, Tanvi, Jyoti, Aditi, Varsha, K Akarti, Vartika, Renu, Pragati, toshi, Karisma, Harshita, Muskaan; Row 3 (left to right): Karuna, Naina, Surbhi, Palkaran, Priyanka Jaswal, Vidushi, K Garima, Nidhi, Rashmi, Priyanka Singh, Megha verma, Anupama, Taru, Palak, Tiya, Deepa S, Priya, Priyanka Jain, Sakshi Antil, Asha, Sheetal kalra, Aakriti; Row 4: Samridhi, Namrata, Sapna, Rupal, Mansi, Anjali, Divya, Bhairvi, Bhumika, Anshika

Chemistry (H) II Year



Row 1 (L to R): Divya, Megha, Isha, Bhawna, Purnima, Siri, Peehu; Row 2: Divya Yadav, Rimjhim, Anju, Aditi, Anonjaya, Monika, Vinika, Sanjana, Neehar, Anamika, Rashmi, Ojasvi, Shelly, Himanshi Soni, Himanshi Singh; Row 3(sitting): Anshu, Prateeksha, Deeksha, Priyanka, Anushka, Alka, Vrinda, Ekta, Sristi, Shiva, Goldi, Khushboo, Priya, Priyanshi; Row 3(standing): Jahnvi, Ankita, Meghna; Row 4: Nisha, Taruna, Sana, Aranya; Sukriti, Sajal, Nishtha, Amishi, Harshita, Simran; Row 5: Kanchan, Meena, Swati, Shubhangi, Samridhi

Chemistry (H) III Year



1st row: (L to R) (sitting) Divya Rai, Meenakshi, Kharun Nissa, Komal, Sapna Yadav, Ritu, Smriti, Nidhi, Neerja, Neha Bhati, Punisha, Prabha, Rashmi, Shilpa Choyal, Preeti Choudhary, Sapna Kudawla, Jaya, Ipshta; 2nd row (L to R) (sitting) Ishita, Anshika, Deepti, Sheelu, Pragati, Harsha, Mamta, Monika, Anita, Meenakshi, Shilpi, Preeti Jangid; 2nd row(standing): Anandita, Sarita, Mahima; 3rd row:(L to R) : Shilpa Sharma, Sweety Suhag, Kirti, Neha Rani, Phroyia, Yashika, Sunaina, Nikita, Soniya, Ruby, Surbhi, Raksha, Kriti, Kalpana, Ankita, Divya Bhatt, Sonika, Meenu, Nancy, Bharti, Ayushi, Vaishali, Shivani, Alisha, Shruti, Manisha

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A call from the days spent in building a better self!

A journey doesn't fulfil its luring promises at the very start. It doesn't seem to be easy but it is worth treading with zeal. The path never shouts out about its assets but awaits someone to secretly see her/his own fate through it. Many of us don't have that crystal clear idea about our choice for the subject upon entering in the college and with the course of time some of us end up developing a strong covalent (!) bond with the subject and some of us stay somewhere midway hung in the air being exposed to the incoming wind of changing perspectives.

Well, if you are a victim of such an inner self then you may count yourself amongst the many students who think that such a personality and outlook is unique to them. Blessed are the people with a great focus about the way they want to mould their lives but thanks to biology, we are not replicas of each other and so different people possess different bizarre ideas about their future. When a home to such ideas is India's rank 1 college, Miranda House, then your mind's flight knows no stoppage. It opens those windows of your brain much wider to let the newness of things and a sense of self dependence come in and make a permanent home. It brushes up your inner self. A self who was pampered with the maximum comforts possible by the parents and is now left alone with so many people in a new city. Soon you find your own identity and develop some lasting memories which you would cherish for your remaining life. Being a student of the Department of Chemistry, Miranda House is a privilege whose reflection remains in your persona even after you have left. You build your own Miranda in your heart. A thing to always keep ringing in your brain is that there is absolutely no shortcut or subway to the correct destination and you cannot get away with things if you wish to be fraudulently self-righteous. I think flaws in your personality are meant to be savoured to let your uniqueness flourish but acceptance of that is a requisite. The Department is blessed with teachers of all ages and varied outlooks. You get an opportunity to groom your inner self, exposed to the sheer efficiency of the senior, experienced teachers and warm chats with sporty young teachers lighten up your heart.

Chemistry teaches a person a lot more than what we garner from books. It teaches the significance of the judicious use of resources, to tackle even the direst of situations, to put your best foot forward with minimal backing and yes, weaves the very web of life into itself. A composed and a calm expression can always deceive one that some task is very easy but you never know what storm may be raging inside the calm mask, encapsulating the clamour. To take things in your stride is a tough task indeed and if you are the one with at the reins, the bars are set even higher. You work out one thing and fall short in the other and will soon realise that you just have to work to the best of your abilities and not bother about every single person's views. You can't put a smile on everyone's face but you can surely feel content about having tried. You may shut the door but you should always be able to hear someone knocking on the other side. Who knows, it might turn your tale upside down.

Remember always that to be you is the toughest task in the world and you are put to test not in the easiest of circumstances. You need to be the major stakeholder of your real self. Of course, it is easy to preach but while preaching one secretly hopes to achieve the same oneself someday. With these bizarre thoughts, I give you *Rasayani 2016-17!*



Punisha Kardam
President, Rasayanika 2016-17

Rasayanika: the Chemical Society
Annual Report 2016-17

Chemistry students have been active even before the beginning of the academic session 2016-17. A number of enthusiastic students worked on Chemistry projects under DS Kothari Centre for Research and Innovation in Science Education, Miranda House in June-July 2016. The Freshers' Event marked the beginning of the new session. The freshers were given ample opportunity to showcase their talent and interact with their seniors and were given a warm welcome. This was followed by the Bridge Course on Lab Safety and Handling of Equipment for I Year students organised by the Department of Chemistry on 3-4 August 2016. The course was an attempt to bridge the gap between laboratory practices in school and college and was much appreciated by the I Year students. For many, it was their first exposure to advanced lab equipment.

The Inaugural Lecture of the Department, *A Motivational Talk for Chemistry Students*, was delivered by Professor Gurmeet Singh, Head, Department of Chemistry, University of Delhi on 21 September 2016. Prof. Singh had to cut his enjoyable talk short because of an urgent summons from the Department but he promised to come back soon. Around 40 students and 4 faculty members from the Departments of Chemistry and Botany went for an educational-cum-sightseeing trip to Kullu and Manali on 30 October 2016. They visited the GB Pant Institute of Himalayan Environment and Development, Kullu, on 3 November 2016. It was an enjoyable and informative visit. The students were introduced to many Himalayan plant species they were unaware of and got a glimpse of the interdependence between humans and the environment in the Himalayan region.

Interesting lectures and well-planned lab sessions are organised every year as part of the Green Chemistry and Environment add-on course offered by the Department of Chemistry to introduce students to alternate green chemical methods which are safer for the environment. This year, students who have enrolled for this course have also been participating in conferences and workshops organised in other colleges. The 15 students enrolled in the course this year participated in a two-day International Workshop on Indo German Dialogue on Sustainable Water Resource Management organized by TERI University in association with Heidelberg University on 3-4 October 2016. They also attended a two-day National Conference on Environmental Sustainability and Waste Water Remediation: Current Status and Future Prospects organized by Sri Venkateswara College in association with Royal Society of Chemistry, UK on 19-20 January 2017. Some other Chemistry students also participated in the workshops and conferences mentioned. Chemistry students also presented posters at various conferences including the above mentioned ones. Faculty and students involved in Innovation Project MH-306: *Design of Affordable Water Purification Devices Using Green and Ecofriendly Silver Nanoparticles* received the certificate of *Most Promising Innovation* at 93rd Annual Convocation of University of Delhi held on 19 November 2016. A workshop for students entitled *Green Chemistry and Environment* was organized by the Department of Chemistry, Miranda House on 6 and 7 February 2017 in which fifteen students enrolled in the add-on course also participated. The sessions during the workshop included lectures and hands-on lab sessions in accordance with the theme by faculty members. There were also three talks by outside experts: Prof Shyamala Mani of National Institute of Urban Affairs, New Delhi spoke on *Sustainable and Safe Plastics Waste Recycling*; Dr Pranab J. Patar, Senior Manager from Earthwatch Institute India delivered an interactive talk on *Citizen Science, Green Skill and Sustainable Future – Some Alternative Perspectives in Indian Context* and Mr Siddharth Saran from Petroleum Conservation Research Association (PCRA), New Delhi spoke on *Oil and Natural Gas Conservation*. A field trip is also being planned under the course in the near future.

Chemistry students won a number of awards and recognition for their achievements in 2016-17. Sakshi Antil won the First Prize in the Poster-making competition at Sri Aurobindo College at the National Seminar on *Emerging Issues of Climate Change: Sustainability and Economic Implications* sponsored by ICSSR. She received a cash award of Rs. 1500/-, a trophy and a certificate. Sakshi also won the First Prize of Rs. 500/- at the Poster-making competition at Daulat Ram College. Garima Singh received a cash prize of Rs. 1000/- for securing 2nd position at the MH Freshers' Quiz. Karisma Aggarwal completed the Global Certification

Programme ‘Green Revolution’, an initiative by International Centre for Culture and Education(ICCE) in October 2016. Ishita Chandra received a certificate for a poster presented at GITAM University, Vishakhapatnam. Raksha Jain secured the First Position in the Baseline Chemistry Test, MH 2016-17 as well as the Association of Chemistry Teachers (ACT) Concept Test 2016. Manisha and Shruti secured the 2nd and 3rd positions respectively in the Baseline Chemistry Test 2016-17. Raksha also got the Third Prize in the poster competition held in Dyal Singh College. A few Chemistry students are recipients of the Science Meritorious Award given by the University of Delhi. Chemistry students who are enrolled in Sports and NCC have also distinguished themselves. Smriti Bhardwaj secured the 1st position in the Inter-college Chess Tournament held in Kirori Mal College and the 2nd position in tournaments held in Sri Ram College of Commerce, Gargi College and Lady Sri Ram College respectively. Preeti Choudhary received state and national certificates in Ball Badminton and National Camp certificate in NCC in 2016. Sheetal and Simran participated in the Self Defence Training organised by Delhi Police from 9 to 24 January 2017 in Kirori Mal College. Apart from the students who interned at the DS Kothari Centre for Research and Innovation in Science Education in the summer of 2016, some Chemistry students also interned outside the college. Notable among them was Kriti Kapil, who interned for 2 months at Nysa Health, Global Business Park Gurgaon for website content creation, marketing and app development at a stipend of Rs. 30,000. Sukriti received a Certificate of Appreciation for volunteering in *Yamuna Shramdaan* organised by *Swechha India*. Faculty members of the Department of Chemistry, Miranda House presented research papers and posters in a number of local and national conferences. At the international level, Dr. Kalawati Saini was an invited speaker at the American Advanced Materials Congress held from 4-9 December 2016 at Miami, Florida, USA. She has also been invited to present her research work at the European Advanced Materials Congress-2017 scheduled to be held in Stockholm, Sweden, in August 2017. *Pratikriya 2016-17*, the annual Inter-college Chemistry Festival for the current session was held on 29 March 2017 and attracted enthusiastic participation from within and outside the college. The list of prize winners is as follows:

Event	Prize	Name of Winner
Poster Presentation	1 st	Sakshi Antil; MH I Year
Poster Presentation	2 nd	Ritu, Pragati; MH III Year
Poster Presentation	3 rd	Preeti Jangid; MH III Year
Eureka! Paper Presentation	1 st	Ekta Sangwan & Divya Mahajan; MH II Year
Eureka! Paper Presentation	2 nd	Priyanka Gogoi; MH II Year
Photogs of Science	1 st	Punisha Kardam; MH III Year
Photogs of Science	2 nd	Harshit Ahlawat; SAC III Year
Prayog: Labwork Competition	1 st	Divya Mahajan; MH II Year
Prayog: Labwork Competition	2 nd	Nancy Suri; MH III Year
Chemiscellany: Crossword	1 st	Yashpal Verma; ZHC III Year
Chemiscellany: Crossword	2 nd	Raksha Jain; MH III Year
Chemiscellany: Ad Mad	1 st	Abhishek & Arjun; SGTBKC III Year
Chemiscellany - Ad Mad	2 nd	Kriti Kapil & Mahima Rajput; MH III Year
Chemiscellany- A Gala Guessing	1 st	Nancy Suri & Ayushi Pandey; MH III Year
Chemiscellany- A Gala Guessing	2 nd	Ritu Singh & Punisha Kardam MH III Year

Chemistry students who received prestigious college and department awards on Founder’s Day 2017 are:

1	Raksha Jain, III Year	(i) G.K. Dhingra Award (ii) Academic Award
2	Taruna, II Year	Dr. Anita Tandon Award
3	Sukriti Mishra, II Year	(i) Naunit Ram Ahuja Award (ii) Anu Bedi Award

4	Deeksha, II Year	Dr. Lakshmi Chand Dayawati Memorial Award
5	Nishtha, II Year	Best Volunteer Award, MH Vatavaran

Finally, we are very proud of Raksha Jain who secured AI Rank 1 in IIT JAM 2017!

Punisha Kardam, President
Nidhi Choudhary, Vice President
Amishi Tewari, Secretary
Sukriti Mishra, Joint Secretary
Rasayanika 2016-17

NOBEL PRIZE IN CHEMISTRY 2016

A Review

The Nobel Prize in Chemistry 2016 was awarded jointly to

Jean-Pierre Sauvage

University of Strasbourg, France

Sir J. Fraser Stoddart

Northwestern University, Evanston, IL, USA

Bernard L. Feringa

University of Groningen, the Netherlands

'for the design and synthesis of molecular machines'



Sauvage



Stoddart



Feringa

The Nobel Prize in Chemistry 2016 was awarded jointly to Jean-Pierre Sauvage, Sir J. Fraser Stoddart and Bernard L. Feringa 'for the design and synthesis of molecular machines'. A molecular-level machine can be defined as an assembly of a distinct number of molecular components that are designed to perform machine like movements (output) as a result of an appropriate external stimulation (input). Furthermore, a machine requires a supply of energy for its operation, and can be driven by suitable energy sources. Machines of different types are an integral part of human development, helping us, for example, to perform tasks that fall beyond our capacities. Continuously developed in response to our needs over many millennia, our society has enjoyed an ever increasing plethora of useful machines, with an enhanced quality of life as a consequence. This progress has accelerated, in particular, since the industrial revolution, with its key discoveries resulting in a giant leap forward and dramatically changing the world.

Today, we are at the dawn of a new revolution that will bring us yet another giant leap forward. Humankind has always striven to push the limits of machine construction and of what machines can do, and as a

consequence attempted to build miniaturised machines of ever smaller size. The ultimate limit of this endeavour is to make molecular-sized machines, a research frontier that has intrigued scientists for many years, and that has required the creation of a range of new tools. Although development towards highly complex and useful molecular machines is still in its infancy, the laureates have successfully demonstrated that the rational design and synthesis of molecular machines are indeed possible. All the important developments since the early 1980s, in which Sauvage, Stoddart and Feringa have incorporated the mechanical bond and unidirectional rotation into functional molecular machinery, constitute a true foundation for the entire field. Through the design and synthesis of topologically challenging structures, combined with understanding and development of controlled motion and function, machine-like devices have been demonstrated. This work has formed the basis for rich progress towards molecular machines, for which the laureates have been major proponents and sources of inspiration.

Compared with the machines that changed our world following the industrial revolution of the nineteenth century, molecular machinery is still in a phase of growth. However, just as the world stood perplexed before the early machines, such as the first electric motors and steam engines, there is the potential for a similar explosive development of molecular machines. In a sense, we are at the dawn of a new industrial revolution of the twenty-first century, and the future will show how molecular machinery can become an integral part of our lives. The advances made have also led to the first steps towards creating truly programmable machines, and it can be envisaged that molecular robotics will be one of the next major scientific areas.

The progress achieved, however, would not have been possible without the vision and pioneering work of Jean-Pierre Sauvage, J. Fraser Stoddart and Ben L. Feringa. Sauvage and Stoddart have both brought the initially cumbersome chemistry of the mechanical bond into widespread use, and have exemplified this chemistry for a variety of devices. Feringa has been instrumental in applying restricted rotation in operational machines, and has successfully addressed the unidirectionality issue of molecular motors.

*Punisha Kardam
Chemistry(H) III Year*

ABSTRACTS OF PAPERS PRESENTED IN PRATIKRIYA 2016

1. Nanotechnology

Priyanshi Verma

Miranda House, University of Delhi

The presentation is on nanotechnology and medicinal science. The following topics are covered:

1. Nanotechnology
2. Hidden scope of nanotechnology
3. Advantages
4. Applications
5. Integers of nanotechnology and biology
6. Applications in medicinal science
7. Current research and applications
8. Implications of biotechnology

2. Harnessing the Double Helix to Decode Health: Personalised Medicine

Nishtha

Miranda House, University of Delhi

Major advancements in science and technology have allowed healthcare decisions to become increasingly accurate over time. There has been an immense growth in the pharmaceutical and medical industries.

It was in the 19th century, that developments in chemistry, histochemistry and microscopy allowed scientists to understand the underlying causes of disease. From here came the rise of genetics, imaging, and data mining. By 2003, scientists had sequenced the whole human genome. They had a complete sequence and

map of all the genes in the human body. Sequencing of the human genome set in motion the transformation of personalized medicine from an idea to a practice.

“Personalized medicine” may be defined as tailoring medical treatment to the individual characteristics, needs and preferences of each patient based on his unique genetic makeup.

“Personalized medicine” is not limited to pharmaceutical therapy. Advances in computational biology and medical imaging are paving the way for personalized medical treatments by considering a patient’s genetic, anatomical, and physiological characteristics. The advent of mobile and wireless capability, and the Internet have allowed more effective patient monitoring and treatment outside of traditional medical care settings. These days, individual patients and sometimes healthy people, too can have their personal genomes fully sequenced. This knowledge about the human genomes and their differences is the core concept of personalized medicine.

DNA sequencing plays a central role in personalizing medical treatment. More and more hospital laboratories are acquiring new sequencing devices (“next-generation sequencers”, NGS), to analyze genes. This approach is having a major impact on medical concepts and practices, especially with respect to genetics. This ability to search for mutations in a large number of genes is finding applications in the diagnosis of diseases at birth, routine screening, and pre-conception diagnosis.

It is a powerful approach to the discovery of novel causative genes underlying Mendelian disorders where conventional strategies have failed. But, like any other advancement, Personalised medicine has its own set of disadvantages and advantages. The presentation also includes these aspects and Future advances expected in the field of personalised medicine.

3. Green Chemistry and Industry

Palak Majithia

Miranda House, University of Delhi

Basically, we start with introducing what green chemistry actually means and why such importance should be given to it? The presentation includes 'Triple Bottom Line Benefits' which encourages businesses of all kinds to go the green way. And we will discuss how we can adopt green methods in our day to day life.

4. Synthesis and characterisation of polyaniline nanocomposites and its medicinal application

Priyanka Gogoi¹, Surajit Knowler²

1 Department of Chemistry, Miranda House, University of Delhi; 2 Department of Chemistry, Dibrugarh University, Assam

The pi-conjugated polymer nanocomposites with various fillers have become the subject of increased research interest in last few decades due to their various applications in different fields such as electrodes in rechargeable batteries, light emitting diodes, photoluminescence, sensors, supercapacitors etc and also these nanocomposites has a vast medicinal application. In the family of different pi conjugated polymers polyaniline (PANI) is one of the most promising conducting polymers due to its low cost, easy synthesis, tremendous environmental and chemical stability, relatively high conductivity and unique redox behavior. In the present work, effort has been made to prepare graphene oxide(GO) filled polyaniline nanocomposites and to elucidate their electrical, optical and electrochemical properties. The thermal behavior, surface morphology, the effect of GO on the electrical properties of the PANI/GO composites has been studied thoroughly.

5. Green Synthesis of Zinc oxide Nanoparticles, their Characterization and Applications

Deeksha, Divya Mahajan, Ekta**

Miranda House, University of Delhi

This paper presents a method for the green synthesis of ZnO nanoparticles using *Syzygium cumini* (Blackberry) fruit extract. Zinc sulphate (2M, 50mL), sodium hydroxide (2M, 50mL) and a definite volume of blackberry fruit extract (1-5 ml in 100 ml of total solution) have been used as initial precursors. The nanoparticles have been characterized by UV-VIS Spectroscopy, Scanning Electron Microscopy (SEM), Energy Dispersive X-ray Spectrometer (EDS) and Transmission Electron Microscopy (TEM) to analyze

elemental composition, particle size and morphology respectively. These particles have been tested for their anti-microbial activity against *Pseudomonas aeruginosa* 9027.

6. Treatment of Tuberculosis – Then and Now

Aashi Gupta

Kirori Mal College, University of Delhi

Tuberculosis is a fatal disease that continues to infect a major portion of the world population since ages. A lot of work has been done from time to time in the field of medical sciences to curb this disease. My presentation provides an insight into all such efforts that have been made in the field of medication and treatment of Tuberculosis. The presentation takes a tour through the history of the disease, early drugs discovered for its treatment and further road covered for the advancement in its treatment. A major portion of my presentation focuses on the research work, being carried out throughout the world, to check the potential use of nanoparticles for the treatment of tuberculosis.

7. Energy

Aranya Aggarwal

Miranda House, University of Delhi

The electricity requirements of the world including India are increasing at alarming rate and the power demand has been running ahead of supply. It is also now widely recognized that the fossil fuels (i.e., coal, petroleum and natural gas) and other conventional resources, presently being used for generation of electrical energy, may not be either sufficient or suitable to keep pace with ever increasing demand of the electrical energy of the world. Also generation of electrical power by cold based steam power plant or nuclear power plants causes pollution, which is likely to be more acute in future due to large generating capacity on one side and greater awareness of the people in this respect.

The recent severe energy crisis has forced the world to develop new and alternative methods of power generation, which could not be adopted so far due to various reasons. The magneto-hydro-dynamic (MHD) power generation is one of the examples of a new unique method of power generation. The other non-conventional methods of power generation may be such as solar cells, fuel cells, thermo-electric generator, thermionic converter, solar power generation, wind power generation, geo-thermal energy generation, tidal power generation etc. This paper elucidates about Different Energy sources, why we are going for non-conventional energy sources, Different non-conventional energy sources and comparison between them.

EDUCATIONAL TRIP TO INDIRA PARYAVARAN BHAVAN

An educational trip to the Ministry of Environment, Forest and Climate Change housed in the Indira Paryavaran Bhavan was arranged by the Department of Chemistry, Miranda House on 18 April 2017 for the students of Green Chemistry and Environment add-on course and B.Sc.(H) Chemistry III Year. All the students gathered in the college campus at 9:00 a.m. At 9:30 a.m., fifty-one students, six faculty members and two members of non-teaching staff boarded the bus. We reached our destination at 11:15 am.

Indira Paryavaran Bhavan which is located at Jor Bagh Road is India's first on-site net-zero energy building. It has a beautiful structural design to ensure daylight in 75% area and complete air circulation. The building has received 5 STAR GRIHA and LEED platinum rating for exemplary demonstration of renewable technology. The group was warmly welcomed by two personnel assigned to show the students around the complex. They briefed the students about the importance of the environment and their duty towards Mother Nature. They informed us that the building was made with fly ash bricks and light-weight and heat-insulating AAC blocks. It had rooftop solar PV systems which met the entire energy needs of the building. We were amazed when she told us that the net energy consumption was zero. They took us to the terrace garden on seventh floor from where the solar panels were visible clearly. The central atrium had a beautiful fountain which used recycled water. The building also had its own sewage treatment facility and geothermal exchange system.

From there we moved to the basement which had fully automated robotic car parking. The instructor showed us the working of puzzle parking. This was indeed a good way of utilising space. Next, we moved to the auditorium where they showed us projects ongoing in India like addressing the water scarcity in Kutch,

Gujarat. Substantial refreshments were served to all the visitors. The students got an opportunity to inquire about the career opportunities in the field of environmental science. After a good view of the building and a few snapshots it was time for us to leave. We thanked the two personnel who guided us. One of them told us that a little effort from everyone can make our Earth GREENER, SAFER and BETTER for the future. At around 1:00 pm in the afternoon, we boarded the bus to return to MH.

It was indeed a very good experience visiting the Indira Paryavaran Bhavan. We learned things which could be incorporated in our college in coming years like the puzzle parking that could solve the problem of limited space and solar panels to meet our energy needs.

Raksha Jain
Chemistry(H) III Year

EDUCATIONAL TRIP TO KULLU-MANALI

A panorama of the immense strength of nature and an experience of practical knowledge – an educational trip to Kullu-Manali can promise nothing less than the best. The students of the Departments of Chemistry and Botany of the college were privileged to experience the same as a part of the educational-cum-pleasure expedition from 31 September to 2 October 2016 .

The destination, Manali in Himachal Pradesh was reached after a long and a breathtakingly scenic journey of quite a few hours. There followed an evening visit to a natural hot spring, Rishi Vashishth Aashram and an ancient and revered temple, Hadimba Temple, which ended the first day of our journey. Next day, the students set off with great zeal since the destination was Rohtang Pass, approximately 13000 feet above sea level. Enthusiasm spiralled upwards with every turn of the road which was taking us closer to the final spot. The weather was only moderately cold in terms of Rohtang Pass and it was a very enjoyable and memorable visit. This was followed by a trip to the adventurous Solang Valley, where some of the students were literally in the sky with their hearts popping into their mouths during paragliding. The day ended well with a little shopping at the very famous Mall Road of Manali.

The next day fulfilled the educational part of our trip. The teachers and students were welcomed enthusiastically by Dr. Sher Singh Samant at the G.B. Pant Institute of Himalayan Environment & Development, Kullu. The students had an amazing learning experience, the highlight of which was a very detailed presentation on the diverse variety of Himalayan plants which were inhabitants of their beautiful institute campus as well as surrounding areas. The presentation displayed great depth of knowledge about the characteristics of Himalayan trees and plants. This session was followed by a delightful walk through the entire campus of the institute. The last phase of this splendid journey was river rafting in the Beas, calling upon the students' courage and spirit of adventure. It was immensely enjoyable and every minute was savoured by the participants. After this, we boarded our buses and headed straight to Delhi, bidding adieu to the marvels of nature in beautiful Himachal Pradesh

All these experiences made this trip of ours unforgettable. We would like to extend a heartfelt 'Thank you' to Madam Principal and the teachers for giving their consent in the matter and making it an enjoyable and educative experience, leaving the students with wonderful memories engraved in their minds.

Punisha Kardam
Chemistry (H) III Year

MY JOURNEY TO AIR-1 IN IIT-JAM 2017.....

The AIR-1 in IIT-JAM 2017 came as a pleasant surprise for me. I was not expecting Rank 1 despite having performed well in the exam. I was hoping to be among the top 10 rankers, but to be AIR 1 was beyond my expectations. It was like a dream come true and currently I am living the moment to the fullest!

As a young girl I had a curious mind and was always eager to gather new information. I was always fascinated by seeing the wonders of nature and wanted to know more about it. The support of my parents and encouragement from my school teachers helped me develop a scientific temper and enthusiasm to study science. There is a stereotypical thinking that if you have high marks, you go to engineering or medicine and

if low marks then to pure science, since the best jobs are in engineering and medicine. With my high grades I could have easily chosen the path of higher pay but instead I followed my passion and studied Chemistry.

Miranda House was my first preference because of two reasons. Firstly, it would give me a platform to develop my personality and make me a strong, confident woman. Secondly, it has the best Department of Chemistry. My journey in Miranda House has been wonderful and a learning experience. All the faculty members of Department of Chemistry were very helpful and encouraging. The well-equipped Chemistry labs and Department library as well as the college library gave me the required learning environment. The DU Innovation Project I joined gave me first-hand experience in the field of research which will be beneficial in choosing the future career path. The one-year certificate course in Green Chemistry and Environment as well as MH Vatavaran, the Environment Society has inculcated in me concern for the environment.

I wish to pursue my career in Green Chemistry and Energy Conservation for the betterment of our society. I thank all my teachers for imparting skills and knowledge in me. I thank Miranda House for giving me a platform to express my views and make me realize my full potential. When I joined Miranda House I was a girl with curious mind and now when I step outside I will be a confident woman with strong opinions. I feel proud to be a Mirandian!!!!



Raksha Jain

Chemistry(H) III Year

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CHEMISTRY JOKES

Don't trust atoms, they make up everything.

Did you know that you can cool yourself to -273.15°C and still be OK?

H_2O is water and H_2O_2 is hydrogen peroxide. What is H_2O_4 ?

Drinking.

Have you heard the one about a chemist who was reading a book about helium?

He just couldn't put it down.

How about the chemical workers... are they unionized?

Did you know that oxygen went for a second date with potassium?

How did it go?

It went OK₂!

Why was the mole of oxygen molecules excited when he walked out of the singles bar?
He got Avogadro's number!

Online money has recently been discovered to be a not-yet-identified super heavy element.
The proposed name is: Un-obtainium.

Anions aren't negative, they're just misunderstood.

If H₂O is the formula for water, what is the formula for ice?
H₂O cubed.

Why did the chemist sole and heel his shoes with silicone rubber?
To reduce his carbon footprint.

What do you call a tooth in a glass of water?
One molar solution.

A small piece of sodium that lived in a test tube fell in love with a Bunsen burner. "Oh Bunsen, my flame," the sodium pined. "I melt whenever I see you," The Bunsen burner replied, "It's just a phase you're going through."

What emotional disorder does a gas chromatograph suffer from?
Separation anxiety.

What did the titrant say to the titrate?
"Let's meet at the endpoint."

Old chemists never die, they just stop reacting.

What is "HIJKLMNO"?
H₂O.

When one physicist asks another, "What's new?" what's the typical response?
C over lambda.

Why can't lawyers do NMR?
Bar magnets have poor homogeneity.

Source: <https://www.inorganicventures.com/fun-chemists>

CHEMISTRY DEPARTMENT AWARDS

In addition to the college awards for academic and all-round excellence, Chemistry students are eligible for some Departmental awards as well. These are:

Anita Tandon Award for Highest Marks in Organic Chemistry I Year: is given to a I Year student who has scored the highest marks in Organic Chemistry (university examination + internal assessment) in Semester I. If two students have the same marks in the Theory paper, the Practical marks are added to break the tie.

Laxmichand Dayawanti Award for Academic Excellence II Year: is given to a II Year student who has shown academic excellence, excellence in co-curricular/extra-curricular activities and good attendance record.

Naunit Ram Ahuja Award for Academic Excellence II Year: is given to a II Year student on the basis of academic merit and financial need.

GK Dhingra Award for Highest Marks in Organic Chemistry Semester III + Semester IV: is given on the basis of the highest marks in Organic Chemistry (university examination + internal assessment) Semester III + Semester IV. If two students have the same marks in the Theory paper, the Practical marks are added to break the tie.



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Chemistry Faculty 2016-17



Back row (L to R): Dr. Ritu Arora; Dr. Anshika Lumb; Dr. Amrita T. Sheikh; Dr. Smriti S. Bhatia; Dr. Mallika Pathak; Dr. Deepti Rawat. Front Row (L to R): Ms. Anita Kumari; Dr. Sujata Sengupta; Dr. Adarsh Gulati; Dr. Sharda M. Sonkar; Dr. Rajeswari. Missing from photo: Ms. Nutan Rani; Dr. Kalawati Saini; Dr. Malti Sharma; Dr. Poonam

Chemistry Laboratory Staff 2016-17



Standing (L to R): Shri Subhash; Shri Shashi Mohan; Shri Gauri Shankar; Shri Sunil; Shri Mahesh; Shri Vijay; Shri Devender; Shri Deepak; Shri Jaswant; Shri Sachin; Shri Prakash; Shri Sanjeev. Sitting (L to R): Shri Pawan; Shri Amit; Shri Vikas; Shri Sushil; Shri Sunil K. Bharadwaj. Missing from photo: Shri Ravi Kumar; Shri Harkesh Meena; Shri Rajender

