

## Report of Science Foundation of the College for the Year 2018-2019

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Five teams from the Department of Electronics participated in NConSI Headstart 2018 at the National Conference on Scientific Innovation Headstart organised by St. Stephan College, University of Delhi from April 5 - 6, 2018. Following poster's were presented:

1. "Hyperloop: The Fifth Mode of Transport" by Ankit Singh, Murari Thakur and Ravi, all from B.Sc. (H) Electronics 2<sup>nd</sup> year.
2. "IoT: Internet of Things", by Sneha Arora, Raghunath Mishra all from B.Sc. (H) Electronics 2<sup>nd</sup> year.
3. "Algorithm for Maze Solving" by Praveen Kumar Chaturvedi, B.Sc. (H) Electronics 2<sup>nd</sup> year.
4. "Spybot and Autonomous Path Follower PROTOBOT" by Praveen Kumar Gond, B.Sc. (H) Electronics 3<sup>rd</sup> year.
5. "IoT based Real Time Gas Concentration Monitoring and safety Alarm System" by Pawan Kumar Mishra, B.Sc. (H) Electronics 3<sup>rd</sup> year. Pawan bagged the 3<sup>rd</sup> Position in the NConSI Headstart 2018.

Science Foundation Committee of the College organized Fifteen days (90Hours) on campus hands-on workshop on "Trends for Algorithmic Experimentation and Prototyping" from May 28, 2018 – June 15, 2018 was organized under the aegis of DBT Star College Program (Electronics). It was an Industry Oriented Training Program that covered Basic as well as Advance aspects through 44 Practicals, 23 Minor Projects and 5 Major Projects. 31 students from Deen Dayal Upadhyaya College (DU); Hansraj College (DU); Maharaja Agrasen College (DU) and Army Public School, Gorakhpur attended the workshop.



Workshop on Ionic Equilibrium through Experiment – A three-day outreach activity for school students was organized by Department of Chemistry and Science Foundation of the College

under the aegis of DBT Star College Program held during May 14-16, 2018. Twenty seven students of class eleven from Bal Bharti Public School, Dwarka participated in the workshop. The workshop involved a transacting the concepts through learning by doing, the Discovery Approach. The pedagogy involved was a new one different from the conventional method of teaching Science. The concepts covered were 1) Classification of substance as electrolytes and non-electrolytes using conductance as tool, 2) Ionisation, 3) Equivalence in Chemistry, 4) pH of water, acids, bases and change in pH on dilution using pH paper, universal indicator and pH meter, 5) Ionic product of water, 6) Common ion effect, 7) Strong and weak electrolytes through conductance, titration and pH measurements, 8) Dissociation constant of weak acid through pH measurements.

Science Foundation Committee of the College organized School Outreach Program for Class X students of Kendriya Vidyalaya Sector-12, Dwarka during October 24-27, 2018. 170 students participated in the program which covered practicals related to Physics, Electronics, Botany, Zoology, Chemistry and Mathematics like Study of Damping Effects in Motion of An Oscillator; Study of spectrometer, spectrum and angle of prism ; Study of applications of Ohm's Law; To perform qualitative tests for carbohydrates (reducing and non-reducing sugars and starch) in given food extract ; To perform qualitative tests for proteins present in the given food extract; To perform qualitative tests for fats present in the given food extract; Animal Diversity through Glass; To separate and identify amino acids by Paper Chromatography and Hands-on Session on EXCEL for mathematical operations and functions.



2<sup>nd</sup> National Level Event based on Ethical Hacking was jointly organized with i3indya Technologies on March 07-08, 2019. 27 students from Deen dayal Upadhyaya college (DU); Rajdhani College (DU) and Sri Venkateshwara college (DU) participated in the competition and Tushar Goel of B. Sc. Hons Computer Science was selected for final round which was held at Radiance 2019 (Asia's Largest Technical Festival of IIT Bombay) on 16th March 2019.

Two teams of B. Sc. Hons Electronics students were selected and represented college for IoT Challenge 2019 which is an Event based on IoT (Internet of Things) held at RADIANCE 2019 IIT Bombay on 17th March 2019. Project entitled "Agritech" prepared by Ashutosh Mishra, Praveen Kumar Chaturvedi, Abhishek Soni and Shivam Kumar Singh got third prize out of the 50 teams participating from all over the country.





The concept of “**Science Festival**” was revived after a gap of 20 years and during March 11-12, 2019 science festival 'तुरियोजस' was organized by the Science Foundation Committee of the College in which students and Faculty members of all science departments (i.e. Physics, Electronics, Botany, Zoology, Chemistry, Mathematics and Computer Science) participated. यह नाम संस्कृत भाषा के 'तुरिया' और 'ओजस' शब्द को जोड़ कर लिखा गया है। 'तुरिया' का अर्थ है 'समाधि' (चेतना का उच्चतम स्तर) और 'ओजस' का अर्थ तन एवं मस्तिष्क की अहम ऊर्जा है।

The Science Festival was organized under the aegis of DBT Star College Program and was financially supported by IEEE Electron Device Society Delhi Chapter and National Academy of Science India (NASI) -Delhi Chapter. Companies like Jaisbo, SILVACO, Cognitive Design technologies, AGMATEL, Keysight Technologies, Dewinter, Silicom Electronics Pvt. Ltd., Binary Semantics and i3Indya Technologies exhibited their products during the science exhibition. On March 11 2019, the opening remarks were given by Professor Ajoy Ghatak, Chairperson-NASI Delhi Chapter. Inaugural Address was delivered Professor RK Kohli, FNA, FASc, FASc, FNAAS, JC Bose National Fellow, Vice-Chancellor, Central University of Punjab, Bathinda and on March 12, 2019, the keynote address was delivered by Dr. Amulya Kumar Panda, Director, National Institute of Immunology. 81 posters, projects and models were presented by over 160 participants from 22 different institutions like Punjabi University (Patiala); Bal Bharti Public School, (Dwarka) and Colleges of University of Delhi - Deen Dayal Upadhyaya College, Shaheed Rajguru College of Applied Sciences for Women, Shivaji College, Sri Venkateswara College, Bhaskaracharya College of Applied Sciences, Hindu College, Deshbandhu College, SGTB Khalsa College, Maitreyi College, Gargi College, Maharaja Agrasen College, Department of Electronics Science (University of Delhi South Campus), Ramjas College, Acharya Narendra Dev college, Indraprastha College for Women, Kalindi College, St. Stephens college. 18 papers were presented by participants from Maharaja Agrasen College, Deen Dayal Upadhyaya College, Sri Venkateswara College, Punjabi University, Patiala and Institute of Nuclear Medicine and Allied Sciences (INMAS), DRDO. 09 teams comprising of 100 students from Deen Dayal Upadhyaya College, Netaji Subhash University of Technology, IP University, Ramjas College, Gargi College, Maharaja Agrasen Institute of Technology (Rohini), Shivaji College, HMR Institute of Technology & Management and Ramanujam College participated in the Science Quiz competition. Harshit Malhotra, Bachelor of Management Studies, III Year, Deen Dayal Upadhyaya College, University of Delhi got second prize in the Debate competition in which 31 teams from our college and Shivaji College, Ramanujam College, Netaji Subhash University of Technology,

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Gargi College participated. Nikhil, Varnika, Chhavi, Rishika and Aarti of our college got second prize in the Graffiti competition in which 08 teams participated. Team from Guru Gobind Singh Khalsa College, University of Delhi got first prize in the Nukkad Natak competition. Hands-on-Workshop on “Bird Nest making for assisting the conservation of House Sparrow” was also organized during the science fest in which 30 students participated. Movie of the life of Great Indian Mathematician ‘Srinivasa Ramanujan’ was also screened on March 12, 2019. On March 12, 2019, Keysight technologies conducted a hands-on- workshop for advance learners on Keysight Dreamcatcher Kit ME1000 with Fieldfox, to demonstrate two experiments - Power Amplifier and LNA characterization and Mixer and Filter characterization. Binary Semantics conducted Faculty Development Program and a Quiz on STEM Education for the audience. Deen Dayal Upadhyaya College won the quiz and got Free Maple Ambassador License. Panel Discussion on “Science Communication” was organized in which Prof. Sreenivasa Rao Kottapalli, Head, Deptt. of Botany, University of Delhi; Professor Vasudha Bhatnagar, Head, Deptt. of Computer Science, University of Delhi and Professor Mridula Gupta, Department of Electronic Science, University of Delhi South Campus gave a pep talk and had an interactive two hour session with the students. 08 students of Class IX of Maxfort School, Dwarka and 05 students of Bal Bharati Public School visited the Science Exhibition and participated in various events. NGO UPAY (Underprivileged Advancement by Youth) brought 20 students of ages 8-12 years to the exhibition. The program was culminated by a cultural program in which students performed traditional folk dance of North-Eastern states, guitar performance, performance of RAAGA (dance society of the college) and many more.





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