

Kicking off the two-day long event, the Keynote Speaker, Miss Smriti Tomar, Founder and CEO of Stack Finance, delivered the lecture live from the KGEC E-Cell Facebook page on 6<sup>th</sup> June 2020 at 3 pm onwards. A business enthusiast, Smriti jumped into the business after her first investment only at the age of 16 years. Accordingly, one should increase his/her exposure in other domains during this lockdown period and never stop learning something new. Money is something dealt with by everyone and as there are a lot of transparencies in this era she came up with Stack Finance a FinTech (involving both finance and technology) startup.

Next, there was a panel discussion with team Kesowa, an air mobility company from 5 pm. The team Kesowa made a thorough research in various places of Kolkata to successfully implement their business. It took 6-9 months for them to understand space technology and to create hardware partners in China. A drone can take top view enabling to create sustainable transportation for the future and they have seamlessly managed to operate data due to which the industry is growing day by day.

On the very next day, there has been a live session from 3pm with Pauline Laravoire,

Co-founder and CEO of Y-East to render her illustrations with increasing ecological, social, and psychological hazards. She said that the reasons for an individual to become an entrepreneur should be one's strength, ideal values and core transformation. Identification of purpose aligned to career as well as career orientation is important, she added. Pauline also introduced the Japanese term called IKIGAI which resembles the energy that drives someone to work in the morning.

Finally, participants were excited to have the man behind the revolution of Indian regional OTT platform, Mr. Vishnu Mohta, Director of Sri Venkatesh Films and the Co-Founder of Hoichoi. Mr. Mohta said that things had happened sequentially in OTT business and their target was to create a global audience for their platform. Also Hoichoi is the first and only regional OTT and he believes that lockdown has accelerated the habit of consuming things online he added.

With the completion of the session, the two-day long extravaganza came finally to an end and organizers expect to arrange more exciting events in the near future.

**Santanu Das**  
Secretary, ISEC

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## **Report of Santi De and Gadadhar De Memorial Lecture 2019 and the National Seminar on 150<sup>th</sup> Year Celebration of Periodic Table**

On 14<sup>th</sup> September, 2019, Institute of Science, Education and Culture, Kolkata (ISEC) in collaboration with Birla Industrial and Technical Museum (BITM), Kolkata organized Santi De and Gadadhar De Memorial Lecture 2019 and the National Seminar on 150<sup>th</sup> Year Celebration of Periodic Table at the Conference Room of BITM. Registration of this Seminar started from 11.00am and Prof. Anil Kumar Ghosh, the President of ISEC, inaugurated the seminar by addressing and welcoming all the attendees, specially the speakers and session chairpersons of that day. The Director of BITM, Shri V S Ramachandran was unable to join the seminar due to some unavoidable circumstances. Dr. Swapna Mukherjee, the Vice

President of the ISEC also welcomed all and said that the Memorial Lecture was organized to pay homage to the ancestors. Dr. Arun Kumar De mentioned the glorious past of his parents, late Santi De and Gadadhar De. Prof. A. K. Ghosh also expressed his respect to Dr. Arun Kumar De and proud parents of Dr. De.

After the tea break, the memorial lecture started. The chairperson of this session was Prof. Dr. Samir Ghosh, the founder member of ISEC and Retired faculty of Radiation Therapy, Department of Calcutta Medical College and Ex-Senior Physicist, Government of West Bengal. Prof. Ghosh gave an introductory concept of Radiation Therapy as it was the topic of the memorial lecture.

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He also introduced the speaker, Dr. Pradip K. Sarkar, the Adjunct Faculty, Manipal Academy of Higher Education, Karnataka and Former, Head, Health Physics Division, BARC, Mumbai. Dr. Sarkar started his lecture with a brief concept on periodic table and told about Dmitri Mendeleev who introduced the periodic table. He told about the format of elements in the periodic table and basic structure of an atom. He mentioned the significance of different colors used in periodic table in which blue color denotes a stable atom. He told radioactivity means radiation of energy from nucleus of an atom in the form of alpha, beta and gamma particles or rays which are the basics of Nuclear Medicine and Radiation Therapy. The radio-nuclides are used in nuclear medicine and very small amount of radio-pharmaceuticals are used in human body for diagnosis, therapy and medical research. This particle may be lesser than the amount given for fluoroscopy or Computer Tomography. In Conventional Nuclear Medicine, images are created using gamma ray emission and it is very good for cancer research. Normally X-ray creates a 2-D bone scan image and the Single Photon Emission Computed Tomography (SPECT) creates 3D tomographic image dataset by rotating gamma camera. CT – PET (Positron Emission Tomography) is a CT Based Fusion imaging technique that creates attenuated and prominent tomographic images of emitted positrons (Anti-particle of Electron) of precise location. The radiation oncologists give radiation therapy on PET images of cancer patients. Dr. Sarkar also described a brief history of radiation therapy and its working principles. He said that radiation therapy damages DNA within cancer cells and as a results cancer cells die. But as an effect normal cells also affected by radiation but those are repaired afterwards. Dr. Sarkar also mentioned the four major factors (R's) of Radiobiology. Those are Repair, Repopulation, Redistribution and Reoxygenation. The Radiation therapy is used as an adjuvant therapy with surgery and chemotherapy for treatment of different cancers, sarcomas and to treat brain and bone metastases as well as cord compression as it is safe, quick and painless. The speaker and the chairperson were felicitated by handing over memento on behalf of ISEC. After this lecture, there was a great informative interaction with Dr. P. K. Sarkar.

The First Technical Session of the Seminar on 150<sup>th</sup> Year Celebration of Periodic Table started after the Memorial Lecture. The eminent speaker was Dr. Prabir Mukherjee. He was the Associate Professor in the Department of Chemistry of Surendra Nath College, Kolkata and Chairperson was Dr. Bandana Barman, a Member of Faculty in Kalyani Government Engineering College, Kalyani and Executive Council Member of ISEC. The topic was “150<sup>th</sup> Year of the Publication of Mendeleev’s Periodic Table-Perspective Points and its Influential Achievements in Sciences”. Dr. Mukherjee mentioned the year 2019 as the International Year of Periodic Table- 2019. He told that Dmitri Ivanovich Mendeleev (1834-1907) formulated the periodic law in 1869. The concept of periodic table was based on atomic mass and properties of elements. In the table, Mendeleev grouped elements having similar properties in columns and arranged them in increasing order of atomic masses in rows as periods. Mendeleev formed periodic table with 63 known elements but 118 elements are at present available as per the discovery in 2016. Mendeleev left gaps in periodic table considering undiscovered elements could get place there. He named those undiscovered elements with Sanskrit word *Eka* (meaning one) as a prefix e.g. *Eka*-aluminium. Dr. Mukherjee also told about the Comparison between properties of *Eka*-aluminium and gallium made by Mendeleev in details. In Mendeleev’s periodic table, there were some limitations such as; 1. Position of Hydrogen was not justified there. 2. Mendeleev’s periodic table was based on atomic masses of elements so placing of isotopes of an element was in limitation. Dr. Mukherjee also told that the name of element MD (Mendelium) is given in memory of Mendeleev. Some elements were formed in the laboratory among which 50 elements are named with different scientist and 180 Nobel prizes were awarded on research work done with periodic table. He mentioned that though several updates were made in modern periodic table, but the basic idea formed by Mendeleev remains the same. Both the speaker and chairperson were felicitated by a memento each on behalf of ISEC. After this lecture the audience of the hall participated in an interaction with Dr. Mukherjee.

The Technical Session 2 was started after the Lunch Break. The speaker of this session was

Prof. Susanta Lahiri. He is a renowned professor in Saha Institute of Nuclear Physics, Kolkata and the chairperson was Dr. Swapan Kole, Professor in the Department of Chemistry, AKPC College, Bengai, Hooghly. The lecture topic was, "150<sup>th</sup> Year of Periodic Table of Chemical Elements". Dr. S. Kole introduced the speaker in front of the audience. Prof. Lahiri told that periodic table of chemical element is a unique tool for prediction of appearance and properties of all matters and started his lecture in a very interesting way. He told the concept of Big Bang and Atom-Molecules followed by physics and chemistry. He stated the tale of three cities in Europe where three renowned scientists lived. They are Dmitri Ivanovich Mendeleev (1834-1907) who discovered first periodic table in 1869, Madam Marie Curie (1867-1934) who won Nobel Prize in 1911 for discovery of two elements (Polonium and Radium), and Moseley (1887-1915), who was the father of modern periodic table. Moseley's law provides first experimental evidence of Niels Bohr's theory. The concept of isotope in the first periodic table was not introduced. In 1898, Sir William Ramsay discovered four elements, Ne, Kr, Xe and Rn. The scientists filled the gaps in Mendeleev's periodic table. Dr. Lahiri told that the element hafnium was discovered in 1923 by Coster and Hevesy. In 1935, Nobel Prizes were awarded to Frédéric Joliot and Irène Joliot-Curie in recognition of their synthesis of new radioactive elements. In 1938, Enrico Fermi got nobel prize for discovery of radioactive element Tc. Prof. Lahiri mentioned that for discovery of different elements in periodic table time to time Nobel Prizes were awarded to

the Scientists. Element 106 in periodic table, named Cbodium, was discovered with the name of a live scientist. He told that any chemistry must be performed on an 'atom-at-a-time' basis and mentioned the concept on 'SHE' Chemistry. Dr. Lahiri spoke that from 1981, Darmstadt era started and element from 107 to 110 in periodic table was synthesized by cold fusion as target is stable, but in hot fusion, target is radioactive. Then he told about the contribution of Saha Institute Nuclear Physics in periodic table and it was involved in TASCAs group (that starts from element 112). Dr. Lahiri mentioned about different research works to discover elements in periodic table which are published in several reputed journals. He informed that Element 118, Og is named with the scientist Dr. Yuri Oganessiam and he is alive till now and element 120 may or may not be produced because of its heavy weight and after 120 there is no chance to get elements because the lack of surface tension of earth. Both the chairperson and speaker were felicitated by giving memento on behalf of ISEC.

After the lecture, participants were engaged in a general discussion on that day's lecture. Miss. Awisharya Biswas expressed her gratitude towards that day's lecture, specially to Prof. S. Lahiri to understand periodic table so easily by her. Prof. (Dr.) Santanu Das, the Secretary of ISEC expressed vote of thanks to all members who did their best for the success of the seminar. At the end, Dr. Uttam Das and Mr. Manas Kumar Saha sang songs respectively to entertain the audience in the hall.

**Bandana Barman**  
KGE & ISEC

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## Report of One-Day National Seminar on "Water: Crisis and Conservation" held on November 23, 2019

The Institution of Science, Education and Culture (ISEC), Kolkata had organized One-Day National Seminar in close collaboration with Birla Industrial and Technical Museum (BITM), Kolkata on "Water: Crisis and Conservation" on 23<sup>rd</sup> November, 2019 at Seminar Hall of BITM. This programme was financially supported by Higher Education Department, Government of West Bengal. After registration, the seminar

was started at 11.00am, Prof. Santanu Das, the Secretary, ISEC invited Prof. Anil Kumar Ghosh, the President of ISEC to inaugurate the Seminar. In inaugural speech, Prof. Ghosh solemnly thanked Mr. V. S. Ramachandran, Director, BITM for his presence in spite of his busy schedule and then welcomed all the members of ISEC, invitees, Speakers, dignitaries and guests. He had told that ISEC was established by a group

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