



Conference Report

Report of “8th Nabanita-Satish Chandra Biswas Memorial Lecture 2021 and 5th Dr. Murali Mohan Biswas Memorial Lecture 2021” held on 10th November 2021

On 10th November, 2021, Institute of Science, Education and Culture (ISEC), Kolkata organised “8th Nabanita-Satish Chandra Biswas Memorial Lecture 2021 and 5th Dr. Murali Mohan Biswas Memorial Lecture 2021”. It was conducted through online mode in Google meet platform due to the pandemic of Covid-19 outbreak. Prof. Santanu Das, the Secretary of ISEC Kolkata, welcomed all the virtually attending members. Then he invited Dr. Anil Kumar Ghosh, the President of ISEC to deliver the Inaugural Speech. At the beginning, Prof. Ghosh paid his deepest condolence to the members of ISEC, especially late Dipak Roy, who expired recently due to the present pandemic. Next, he spoke about Prof. Dr. Murali Mohan Biswas, the founder Secretary and father of ISEC as well. Dr. Ghosh brought into focus that late Prof. M M Biswas and his parents late Satish Chandra Biswas and Mrs. Nabanita Biswas were devotees to the Holi Mother, ‘Maa Sarada’ and ‘Sri Ramakrishna’. Further, Prof. Ghosh also informed that Prof. M M Biswas had donated his entire property for the welfare of ISEC and other organisations. Honourable President paid his homage and gratitude towards him and wished for the success of the programme of that very day. With this thought provoking and delighting lecture, Dr. Anil Kumar Ghosh inaugurated the programme.

Prof. Santanu Das, honourable Secretary, invited Dr. Purabi Mukherji, an Executive Council member of ISEC and the speaker of 8th Nabanita-Satish Chandra Biswas Memorial

Lecture 2021. On this memorable occasion, Dr. Purabi Mukherji delivered a lecture on, “A Tribute to Raja Rammohan Roy on the Occasion of His 250th Birth Anniversary”. She started her lecture with a very interesting story of Raja Rammohun Roy belonging to an incident that happened on one fine evening (approx. 4.00PM) in the year 1809 in which the pioneer of modern Bengal stood forward with high confidence and ignored the British Ruler, Hamilton. Raja Rammohun, a prestigious descendant of the Raynarayan family, was born on 22/05/1772 in Radhanagar village of Hooghly District in West Bengal. He was very much attached towards his parents, Ramkanta Roy and Tarini Devi. He was greatly influenced by his mother due to her high intelligence, courageous, dutiful and loving nature. He is being proudly considered as the “Father of Bengal Renaissance”. Also, he was ranked 10th as the “Greatest Bengalee of all times” according to the BBC’s poll in the year of 2004. He was widely educated in various fields and had great knowledge about languages such as Arbi, Parsi, Sanskrit, Latin, Greek languages. He could also clarify minute details about several religious concepts by studying various scriptures. In 1805, Raja Ram Mohun Roy produced one of his beautiful writings, ‘Tuhfat-ul-Muwahhidin’. He had learnt tantra from Nanda Kumar Bidyalankar. From his very childhood, he believed in the existence of “*BRAMHA*” as the one and only ultimate form of God, spreading the message of “unity of GOD”. However, most

of the people believing in Bengali culture found this thought contradictory and opposed him. In fact his father too denied him; so Rammohun left his parental house heading towards Tibet. Rammohun protested the concept of worship for the Lamas while his stay there. Later with the help of Tibetan women he was able to rescue and returned to India. Meanwhile the incident inspired him to think about women rights. In 1801, he met John Digby and accepted the job of a Dewan. In 1803, his father died. From 1804 to 1814, he worked in the Revenue Department of East India Company. Raja Rammohun was a food lover. Also, he was a strong and tall healthy person. He founded “*Atmiyo Sobha*” accomplishing it with Maharsi Dwarakanath Thakur, Gopimohan Thakur, Brindaban Misra, Nandakishore Basu, Kalinath Muni, etc. It was a strong and widely known organisation then, which fought against child marriage, *Sati Daha*, Dowry, *Koulinya Pratha*, etc. The organisation was glorified with educated and respectful members. This powerful man had also protested against Trinity concept in the Christian community. His was a very open-minded person and his thinking was so advanced. In fact, many Britishers of the educated community, Europeans and Americans as well supported him. Raja Rammohun Roy always took a stand against all type of superstitions some of which tries to pull down Indian culture till today. In 1828, he established “Brahma Samaj” with the help of Maharsi Devendranath Thakur. This samaj helped to reform and modernise the Indian society gathering courage and strength then. Dr. Purabi Mukherji presented a statistical record of traumatising ‘*Sati Daha*’ that had been used to be practised in that period. Thankfully, after a strong battle and powerful opposition by Rammohun and his followers, on 04.12.1829, the “The Bengal Sati Regulation” was passed by the then Governor General of India Lord Bentinck to save the Bengali widows from being forced to burn alive with their dead husband. He also founded The Brahmanical Magazine, newspaper- Samvad Kaumudi (1821), Bengali Grammar (1826), Persian weekly, Mirat-ul-Akbar (1822), Bengali book “*Pathyapradan*” or Medicine for the Sick (1823), etc. In collaboration with David Hare, the two educational activists

had set up Hindu college in Calcutta (Later named as Presidency College) in 1817 and Anglo Hindu school in the year 1823 followed by Vedant College, Scotch Church college, etc. The date, 11/12/1823, is very important for science movement since it was the day that caused progress towards scientific enlightenment in the society. According to Pandit Sivnath Sastri, the ten years span from 1820 to 1830 was a period of eventful continuity emphasising on legacy in Raja Rammohun Roy’s life. In 1830, he travelled to England as an ambassador of the Mughal Empire to persuade the British government for increasing the stipend of the Mughal Emperor. With huge dignity and respect Raja Rammohun Roy had been felicitated by different authorities in England. On 27/09/1833, he breathed his last in Stapleton, Bristol. Ten years later he was reburied in Arnos Vale Cemetery, East Bristol and Maharsi Devendranath Tagore took the initiative to build a *Chattri* raised above this vault. Dr Purabi Mukherji ended her amazing lecture following a great interaction among the speaker and the audience. Dr. Sanchayan Mukherjee brought to knowledge of the audience that Rabindranath Thakur used to call Raja Rammohun as “*Bharat Pathik*”.

After the completion of the beautiful first session, the secretary invited Prof. Anuradha De, a Retired Professor and Head, Dept. of Electrical Engineering and Dept. of Science, NITTR, Kolkata to deliver 5th Dr. Murali Mohan Biswas Memorial Lecture 2021. She brought forward her lecture on an amazing field of discussion on the topic of “An Introduction to the Optical Communication”. She started the introductory part with the concept of technological advancement related to optical communication along with its need, history and different applications as well. Gradually, she brought into focus about some of the latest technological status of this system. She mentioned that Morse telegraph and Telephone were introduced in 1860 & 1876 respectively. Also, she gave the concept of electromagnetic wave. For an instance, for communication a carrier such as Radio wave, Microwave, Light wave is a must. When a large information needs to be communicated, higher bandwidth and higher carrier frequency is required. Another

important point is to be noted that the optical communication is performed using the light (optical carrier/ Laser) through optical fibre cable (Light guide/ medium). Going back to time, in 1880, Alexander Bell prepared an experimental set up in his laboratory for photo phone using optical communication through sun rays. In 1870, John Tyndall experimented to observe total internal reflection of light in water. In 1880, Alexandar Graham Bell introduced optical AM audio link. In 1950, Narender Kapany along with his co-scientists and Brian O'Brien succeeded in developing fiberscope using glass coated fibre. In 1955 N Kapany introduced Fibre Optics term. During the period of a decade from 1950 to 1960, the Maser, Laser, Ruby Maser were developed. Next, R N Hall introduced semiconductor laser in 1962. In 1966, Optical Fibre was proposed as a laser signal carrier by the great scientists Charles Kao and Hockham. Later, they were awarded with the Nobel Prize in the year 2009. Finally, fibre optic telephone was installed in 1977. Inside the core of optical fibre cable, multiple total internal reflection of light occurred during transmission of signals. Experimentally it was proved and it led to the conclusion that LASER is brighter than sun light. There are vast fields of applications of optical communication; such are telecommunication system, Military,

Medical application, computer networking, on-board systems in airplane, ships, power system, in several sensors, for decoration and so on... Nowadays various appliances like fibre tree, etc. are designed to decorate with different coloured lightings using laser in fibre optic medium. Several medical diagnoses can be done using this scientific concept of homogenous fibres since these optical fibres are really thin and light. It captures images in high resolution; for an instance as in bronchoscope, medical surgeries, endoscope, etc. Hence, in telecommunication system it is likely to be found that optical fibre communications take a major role while reaching the signal from a source to its proper destination after passing through wide range of networks. Finally, Prof. Anuradha De showed her own experimental set up whose working result is to transmit a musical signal. In a nutshell, the audience came across some of the topics of interesting study of the recent times. Thereby after the completion of her lecture it eventually led to an interactive session among the speaker, Prof. De and the audience.

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