

Preface

The year 2014 is the 150th birth anniversary year of the great personality Sir Asutosh Mookerjee who designed the University of Calcutta as a premier seat of education and research. Under the initiative of Sir Asutosh Mookerjee, in 1914, different postgraduate departments were opened in the University of Calcutta for carrying on advanced level teaching and research and the University of Calcutta then achieved a new dimension. The University College of Science, at 92, Upper Circular Road, was established in 1914 from the generous funding of Sir Taraknath Palit and Sir Rashbehary Ghose. The postgraduate departments in applied sciences including applied mathematics were started there in 1914. At that time, this Applied Mathematics Department was named Mixed Mathematics Department.

Professor Satyendranath Bose, Professor Meghnad Saha, and Professor Nikhil Ranjan Sen were students at the Mixed Mathematics Department during the session 1913–1915. The great visionary Sir Asutosh Mookerjee identified these budding scientists and appointed them as teachers immediately after their passing. Apart from these three legendary scientists, last 100 years of this department were also enriched by many other applied mathematicians like Prof. Ganesh Prasad (first Sir Rashbehary Ghose Professor of the University of Calcutta), Prof. B.B. Dutta, Prof. S. Banerjee, Prof. N.N. Sen, Prof. B.S. Roy, Prof. S.K. Chakraborty, and others for their illustrious contributions in different fields of Applied Mathematics.

Department of Applied Mathematics, University of Calcutta, has organized an international conference on “Emerging Trends in Applied Mathematics: Dedicated to the Memory of Sir Asutosh Mookerjee and Contributions of S.N. Bose, M.N. Saha and N.R. Sen” in collaboration with Saha Institute of Nuclear Physics, Kolkata, and Indian Association for the Cultivation of Science, Kolkata, during February 12–14, 2014, to commemorate these glorious events. This international conference was also financially supported by the National Board for Higher Mathematics (NBHM), Government of India and Department of Higher Education, Government of West Bengal.

This international conference was started with the song “subho karmo pathe dharo nirbhayo gaan” which is the theme song of the University of Calcutta written

by Kabiguru Rabindranath Tagore. The program was inaugurated by Justice Chittatosh Mookerjee, former chief justice of the Bombay High Court and grandson of Sir Asutosh Mookerjee.

The keynote address was delivered by Professor Ralph Abraham, emeritus professor of mathematics, University of California, Santa Cruz, USA. The whole program was divided into sessions dedicated to Sir Asutosh Mookerjee, Prof. Satyendranath Bose, Prof. Meghnad Saha, and Prof. Nikhil Ranjan Sen. Eminent scientists from all over the world delivered lectures at different sessions. Both oral and poster sessions were arranged for contributed papers.

“Sounds of Space”, harmony with the audio visual raga melodies of Indian classical music was presented by Prof. Chanchal Uberoi, former professor of mathematics, Indian Institute of Science, Bangalore.

A cultural program with violin recital followed by conference dinner was arranged in the evening of 13th February. This heritage conference was ended with the National Anthem.

The lectures of the invited speakers and the contributed papers is being published in this proceedings. All papers have been refereed by national and international referees. We are grateful to all the authors, referees, and the publisher for their kind cooperation for successful completion of this book.

We also express our grateful thanks to Prof. Dilip Kumar Sinha, former Sir Rashbehary Ghose Professor of the Department of Applied Mathematics, University of Calcutta and former Vice-Chancellor of Viswabharati for his advice and assistance in the preparation of the writeup entitled “Bedrock of Applied Mathematics in Realms of Calcutta University.”

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