FOREWORD

Throughout world history, different civilizations have attempted to better their living through science and technology. Science and technology have had a fundamental impact on the way people live today, from the early use of the first metal-tools by Neolithic people, to children receiving vaccination-shots today. Different eras in history, like the period of Neolithic Revolution; eras of Classic Civilizations such as, the Greeks, Romans, and Chinese; Renaissance Europe; and the Golden Age of Islam, have been marked by important discoveries in science.

Ever since Galileo, physicists have been pioneers in research and their contributions in this field have ameliorated our way of living. Research in Physics allows us to look forward to a future that holds even more exhilarating breakthroughs and advances. The studies of physicists range from the tiniest particles of matter, to the largest objects in the universe. They have made possible the luxuries and conveniences inside our houses - such as energy-efficient heating-systems, personal computers and CD players. Much of the technological equipment and techniques used by other scientists were also originally developed by physicists, such as, X-rays, MRIs and other medical instruments, to safely study the human body, diagnose and treat diseases. From saving lives to saving our environment, and to promoting knowledge in other areas of science, the contributions of physicists have always been extraordinary.

Keeping in view the importance of Physics in the modern society and in order to celebrate the 100th anniversary of the most famous five papers published by Albert Einstein, the year, 2005, has been declared the 'World Year of Physics' (WYP) by the General Assembly of the UNO (United Nations Organization). WYP-2005 aims to facilitate the sharing of visions and convictions about physics amongst international community of physicists and the public.

In order to commemorate WYP-2005, COMSATS organized a two-day International Seminar on "Physics in Our Lives", on February 23-24, 2005, at Islamabad. This seminar was organized in collaboration with Pakistan Atomic Energy Commission (PAEC) and the National Centre for Physics (NCP), Quaid-i-Azam University, Islamabad. The basic purpose of conducting this Seminar was to bring to light the contributions that physicists have been making and can further make in the future; to improve the quality of life and; to provide a forum for interchange of ideas, between academia, research institutes and the industrial sector, pertaining to Physics and its role in society. Another objective of holding this Seminar was to facilitate the public awareness of physics, its economic necessity, its cultural contributions and its educational importance.

There were a total of 29 speakers in the Seminar who made presentations in five Technical Sessions, of which four were foreign experts representing countries of

Switzerland, Syria, Egypt and Sudan. Other participants included eminent physicists, heads of S&T institutions, scholars and students from various academic and research institutions.

The book contains eighteen papers from the afore-mentioned Seminar on 'Physics in Our Lives', and has been segmented into two broader categories, i.e., 'General Perspective' and 'Contributions of Physics to Specific Fields'. The papers in the first part take stock of the historic evolution of physics, while in the second part field-specific contributions of physics are detailed.

I would like to express my gratitude to Mr. Parvez Butt, Chairman, Pakistan Atomic Energy Commission (PAEC) and Prof. Dr. Riazuddin, Director General, National Centre for Physics (NCP) for their ardent cooperation and support for organizing this conference. Here, I would like to acknowledge the efforts of all the speakers and physicsts and my earnest praise also for Dr. M.M. Qurashi, Ms. Noshin Masud, Ms. Nageena Safdar, Mr. Irfan Hayee and Mr. Imran Chaudhry from COMSATS, whose devotion made possible the publication of this book.

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