CIRCUITS, SYSTEMS, AND INFORMATION

A TRIBUTE TO PROFESSOR FAZLOLLAH REZA

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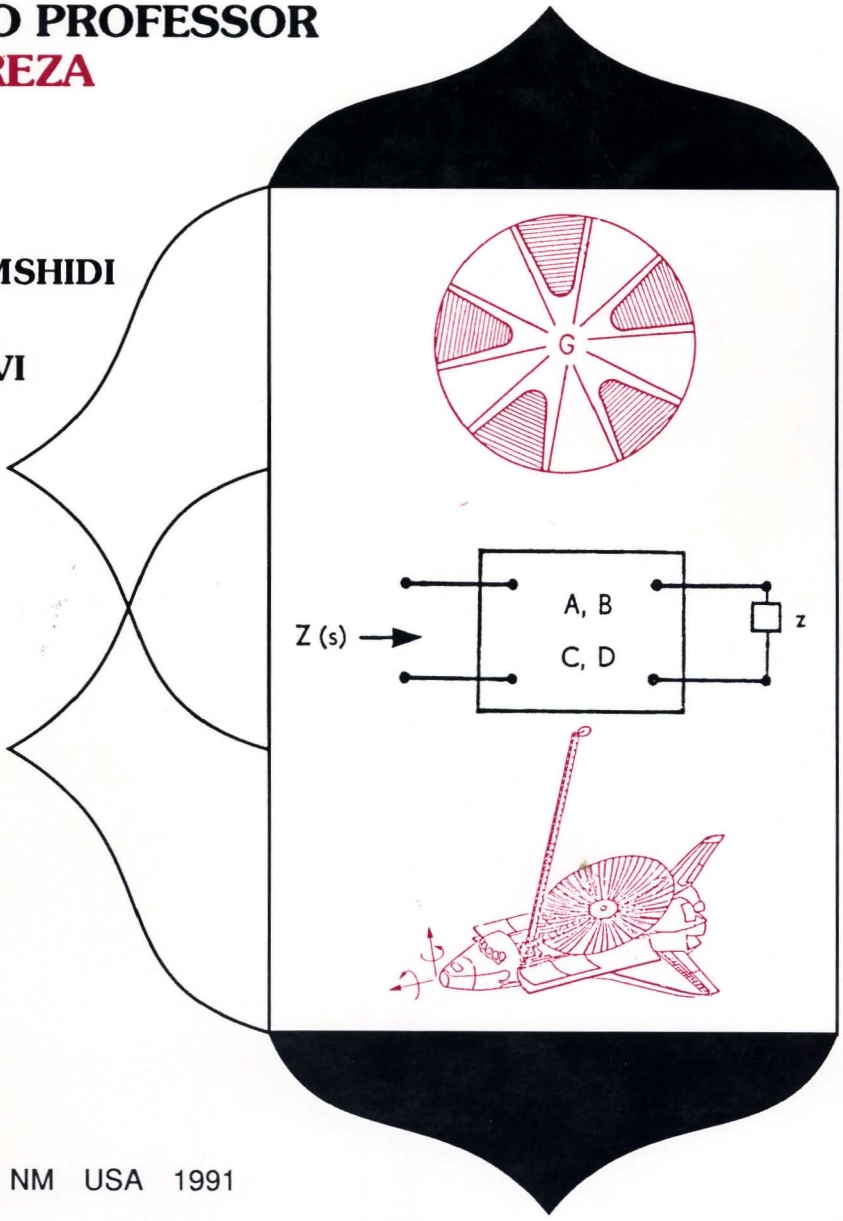

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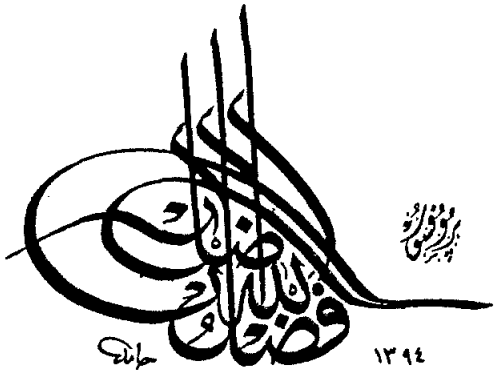

DEDICATED

TO

PROFESSOR FAZLOLLAH REZA

PREFACE

In today's complex technological world very few individuals can be found who have achieved world-class stature in both science and literature. This is in contrast with the distant past, when the scholarly tradition was directed towards a fundamental and broad view of knowledge.

Centuries ago, in Persia (Iran today), this tradition produced many world-renowned scholars, such as Abu-Ali-Sina, philosopher, mathematician, and physician of the Tenth Century whose medical and law texts gained long lasting fame and respect during several centuries in Europe, Omar Khayyam of Neishapoor, mathematician, astronomer, and poet of the eleventh century, and Baha-al-Din Amoli, mathematician, poet, architect, statesman whose magnificent mosque still stands after several centuries in Isfahan, Iran, as a lasting monument to his genius.

In our time, a rare representative of this tradition is Professor Fazlollah Reza, electrical engineer, mathematician, and one of the leading experts on Persian literature, in particular on the works of Abolghassem Ferdowsi the great Persian Poet of the Eleventh Century.

Fazlollah Reza was born in Iran near the Caspian Sea. He graduated with highest honors in the first graduating class of electrical engineering from Tehran University in 1938, where he taught for four years. At the very young age of 25, he published almost simultaneously a literary book called "The Mysterious Universe" and a research oriented book on "Synthetic Modern Geometry". His first literary book received world acclaim in the nineteen forties. The book on Synthetic Geometry was rich in new research ideas, some of which, half a century later, are still profitable for the study of robot kinematics and dynamics.

Soon after, he came to the United States during the latter part of World War II, and completed his M.S. and Ph.D. in Electrical Engineering at Columbia University and the Polytechnic University of New York. He went on to teach and to conduct intensive research at MIT, Syracuse University, University of Colorado, Boston University, Catholic University of America, Université de Paris, McGill University and Concordia University in Canada and several prominent technical universities in Switzerland, and Denmark. His books on Network Theory (1958) and Information Theory (1961) are still considered classics.

Professor Reza returned to his homeland Iran in 1967 in the capacity of Chancellor at the Aryamehr (Sharif) University of Technology and the University of Tehran , respectively. He served his country in two ambassadorial missions, serving also as Iran's representative in many international meetings. During this period of eleven years, Professor Reza actively pursued his scientific and literary interest with numerous contributions and publications in both distinct fields. For a complete account of Dr. Reza's biography, please turn to page 7 of this book.

On May 26-27, 1990 on the campus of UCLA in Westwood, CA, over 250 fellow scientists, engineers, poets, literary persons, friends, associates and relatives of Reza gathered to honor an individual who has devoted all his adulthood life to learning, teaching, and writing not in one specialized field of technology, but in over seven fields of technology and literature - circuits and networks, controls, systems, communication, information, applied mathematics, and Persian literature. He has published numerous technical scientific papers, literary papers, technical books, and books on Persian literature. Please see his select list of publications on page 11.

Among the many distinguished speakers who spoke at the UCLA meeting, the following list of colleagues and friends of Professor Reza are included :

1. Professor Ernst Weber, President Emeritus of Polytechnic University of New York (Doctoral dissertation advisor of Professor Reza)
2. Professor Lotfi A. Zadeh, University of California at Berkeley, USA
3. Professor M.N.S. Swamy, Dean of Engineering at Concordia University, Canada
4. Professor Robert King, Imperial College, United Kingdom
5. Dr. C. Lajeunesse, President Association of Colleges and Universities of Canada, Canada
6. Professor S.L. Hakimi, Chair, Department of Electrical Engineering, University of California at Davis, USA
7. Professor Rui J.P. de Figueiredo, University of California at Irvine (formerly Rice University) , USA
8. Dr. Mehdi Azar, Former Minister of Education in Iran, Dean of Medicine and Distinguished Professor Emeritus, University of Tehran, IRAN
9. Professor M. Jafar Mahjoob, Professor Emeritus of Persian Literature, University of Tehran, IRAN.
10. Cyrus Amiri, M.D. Professor of Medicine, Eastern Virginia University , USA
11. Mr. Ghassem Lajuardi, President of Iranian Association of America, USA

For a complete list of all participants, please refer to the List of Attendees at the end of this book.

The object of this book is to report on this historical event – Symposium on Circuits, Systems, and Information and a permanent record of the Scientific Program of the two-day symposium. The records of the Literary Symposium that accompanied the Scientific Symposium will be published at a subsequent date in Farsi.

The preparation of this two-day symposium and the publication of this book has involved a great deal of effort and work. We appreciate the participation and contributions of the many scientists whose names are included in the appendix of this proceedings.The sincere, enthusiastic and unselfish help, cooperation, and active support of chairpersons of the symposium is to be highly commended. Thanks are due to Professor R.V. Patel of the Scientific Program and Drs. M. Jafar Mahjoob, Cyrus Amiri, and Dr. Mehdi Azar of the Literary program. The intense and gracious support of the Iranian Association of America, in particular, key members of its Board of Trustees - Dr. Mehdi Motameni, Dr. Hamid Zahedi, Dr. Parvin Shahlapoor, Messers Jamshid Jafari, and Ghassem Lajvardi are very sincerely appreciated. The editorial work of this book and the organization of the Scientific program would not have been possible without the many hours of tireless help that we received from Ms. Jila S. Jamshidi, editorial/production supervisor, Ms. Janet Watts and Ms. Janet Jafari for their excellent editorial assistance. Last, but not least, we would like to thank the staffs of TSI Press and Print Plus, Inc. in particular Ms. Shohreh and Mr. Nasir Khurshid for diligent work in the production of this book.

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July 29, 1991

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