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Preface

This book contains proceedings of the 2nd WSEAS International Conference on CIRCUITS, SYSTEMS, SIGNAL and TELECOMMUNICATIONS (CISST'08) which was held in Acapulco, Mexico, January 25-27, 2008. The first WSEAS CIRCUITS, SYSTEMS, SIGNAL and TELECOMMUNICATIONS Conference was held in Gold Coast, Queensland, Australia, January 2007 and this year in Acapulco, Mexico. The Society (WSEAS) has also organized many other separate or joint conferences on Circuits, Devices, Electronics, Dynamical Systems, Control, Signal and Image Processing, Communications etc as well as their impact and their interaction with other areas of Electrical Engineering and Computer Science and Engineering. The relevant titles could be retrieved from the web site: www.worldses.org/history.htm

The 2nd WSEAS International Conference on CIRCUITS, SYSTEMS, SIGNAL and TELECOMMUNICATIONS (CISST'08) aims to disseminate the latest research and applications in the afore mentioned fields. The friendliness and openness of the WSEAS conferences, adds to their ability to grow by constantly attracting young researchers. The WSEAS Conferences attract a large number of well-established and leading researchers in various areas of Science and Engineering as you can see from http://www.wseas.org/reports. Your feedback encourages the society to go ahead as you can see in http://www.worldses.org/feedback.htm

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Expanded and enhanced versions of papers published in these conference proceedings are also going to be considered for possible publication in one of the WSEAS journals that participate in the major International Scientific Indices (Elsevier, Scopus, EI, Compendex, INSPEC, CSA see: www.worldses.org/indexes) these papers must be of high-quality (break-through work) and a new round of a very strict review will follow. (No additional fee will be required for the publication of the extended version in a journal).

We cordially thank all the people of WSEAS for their efforts to maintain the high scientific level of conferences, proceedings and journals.

The Editors

Plenary Lecture I

Some Aspects of Minimal-Time Electronic Networks Design Methodology



Professor Alexander Zemliak
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Puebla Autonomous University
Av. San Claudio y Rio Verde, Puebla, 72570
MEXICO

Abstract: The size and the complexity of the systems grow constantly. One of the main problems of a large system design is the excessive computer time that is necessary to achieve the final point of the design process. There are some powerful methods that reduce necessary time for network analysis. The progress in optimization technique favors the development of fast algorithms for electronic networks design too. Nevertheless, the time of a large-scale circuit analysis and the time of any optimization procedure increase when the network scale increases. Meanwhile, it is possible to reformulate the total network design problem to generalize design process. The general design methodology was formulated on basis of the optimal control theory approach that includes a special control vector. The problem of time-optimal network design strategy is formulated as the typical problem for some functional minimization of the control theory. The design process in this case is formulated as the controllable dynamic system. The behavior of the Lyapunov function of this dynamic system and the properties of its time derivative have sufficient information to select more perspective design strategies from infinite set of the different design strategies. The special function can be proposed to predict a structure of the time optimal design strategy. This function is a key to construct the optimal behavior of the control vector. The solution of this problem gives possibility to construct the minimal-time system design algorithm.

Brief Biography of the Speaker: Alexander M. Zemliak received the M.S. and Ph.D. degrees from the Kiev Polytechnic Institute (KPI), Kiev, Ukraine, in 1972 and 1976, respectively, all in electronic engineering. From 1972 to 1976, he was a Researcher with the Department of Radioelectronic Systems, KPI. From 1976 to 1994, he worked as a Professor at KPI. From 1994 he workes as a Professor at Puebla Autonomous University, Department of Physics and Mathematics, Puebla, Mexico. He is a Senior Member of IEEE and Member of New York Academy of Sciences. He was chairman of some sections of international conferences on ISCAS IEEE Thailand, IEICE Tokyo, Japan and others. He was the General Chairman of the WSEAS International Multi Conference: 2002, 2004, 2005, Cancun, Mexico. He is the Editor in Chief of WSEAS Transactions on Systems and member of the Editorial Board of the WSEAS Transactions on Circuits and Systems and WSEAS Transactions on Electronics. He was invited as Plenary Lecturer for 16 International Conferences. His research interests are in computer-aided RF and microwave circuit analysis, optimal design methodologies, computational electromagnetics, numerical techniques in the simulation, analysis and optimization of microwave devices. He has authored of 6 textbooks for students and over 200 papers in refereed journals and conference proceedings on topic related to RF and microwave analysis, optimization and design methodology.

Plenary Lecture II

Limitation of Different Architecture in Wireless Sensor Networks



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Abstract: The desired for more intelligence in the battlefield has given rise to the idea of routing video images over wireless sensor networks. This would apprise the combat decision makers with actual images of battlefield development and allows them to make sound decision. To achieve this objective, the characteristics of video traffic must be studied and understood. Also, the behavior of the network must be analyzed. Different architecture has different behavior. The focus is to find the limitation of each and exploit them to provide the best coverage, throughput and delay.

Brief Biography of the Speaker:Dr. Weilian Su received his B.S. degree in Electrical, Computer, and Systems Engineering (ECSE) from Rensselaer Polytechnic Institute in 1997 with Summa Cum Laude and ECSE department's Lockheed Martin Capstone Design Award. He also received his M.S.E.C.E and Ph.D degrees in Electrical and Computer Engineering from Georgia Institute of Technology in 2001 and 2004. Dr. Su specializes in sensor and ATM networks under the guidance of Dr. Ian F. Akyildiz in Broadband and Wireless Networking Laboratory at Georgia Institute of Technology. In 2003, he received the "2003 Best Tutorial Paper Award" from IEEE Communications Society. Currently, Dr. Su is an Assistant Professor at Naval Postgraduate School. His current research interests are sensor networks, ad hoc networks, quality of service in Internet, distributed networks, and satellite networks.

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