



30th Mediterranean Conference on Control and Automation

Wednesday, June 29, 7:00 PM - Poseidon C

Sessions In Memoriam

MED 2022 includes two Sessions “In Memoriam” of two of our colleagues who passed away recently:

- **7:00 PM - 8:00 PM**
In Memory of *Professor Manolis Christodoulou*, Co-Founder of the Mediterranean Control Conference Series
Organizers: Drs. Petros Ioannou, Elias Kosmatopoulos and George Rovithakis

- **8:00 PM - 9:00 PM**
In Memory of *Professor Nikos Karkanias*, a creative Engineer and Philosopher
Organizers: Drs. Ioannis Leventidis and Antonis Vardulakis

You are cordially invited to attend and learn about their professional lives.

Professor Manolis (Emmanuel) Christodoulou [In Memoriam]



Petros Ioannou, University of Southern California

Elias Kosmatopoulos, Democritus University of Thrace

George Rovithakis, Aristotle University of Thessaloniki

Manolis (Emmanuel) Christodoulou passed away on April 1st, 2022, in Athens, Greece after a long illness. Manolis was born in Kifissia, Greece, in 1955. He received his diploma from the National Technical University of Athens, Athens, Greece, in 1978, the M.S. degree from the University of Maryland, College Park, in 1979, the Engineers Degree from the University of Southern California, Los Angeles, in 1982, and the PhD degree from the Democritus University of Thrace (DUTH), Xanthi, Greece, in 1984, all in Electrical Engineering. He joined the Technical University of Crete, Chania, Crete, Greece in 1988, initially as an Associate Professor and then as a Professor of Control until his retirement.

He has been a Visiting Professor at Georgia Tech, Syracuse University, the University of Southern California, Tufts University, Victoria University, and the Massachusetts Institute of Technology. He managed, and cooperated in, various research projects in Greece, European Union, and the United States. He has held many administrative positions such as the Vice-Rector of the Technical University of Crete, Chairman of the Office of Sponsored Research, and member of the Board of Governors of the University of Peloponnese. He has authored and coauthored more than 200 journal articles, book chapters, books, and conference publications in the areas of control theory and applications, robotics, factory automation, computer integrated manufacturing in engineering, neural networks for dynamic system identification and control, and in using robots for minimally invasive surgeries, and recently, in systems biology.

At his first steps as a researcher, Manolis got involved and published impressive results in linear singular systems. In his attempt to expand his scientific results into nonlinear singular

systems (such as robotic arms that are in contact with the environment), he entered the world of robotics and of intelligent/learning control using neural networks and fuzzy logic. His work in these areas, and especially in neural network control, was pioneering. While most of the researchers at that time were dealing with multi-layer neural networks, which were problematic when applied to control problems (local minima, instability issues), Manolis together with his colleagues – among them the three authors of this obituary, Marios Polycarpou and Frank Lewis adopted the so-called linear-in-the-weights-neural-network paradigm. Such an adoption overcame the problems of getting trapped into local minima or closed-loop instability but, most importantly, it “opened” a new area in control systems, with thousands of scientific papers and real-life applications over the last three decades.

Manolis was not only a pioneer when it comes to research. He was an excellent teacher and, most importantly, among the first ones to open the way to graduate and PhD students at Greek universities to take courses given by professors at American universities and conduct research with them. This was made possible by taking advantage of the fact that his university is in one of the most attractive destinations but also thanks to significant efforts on his behalf in overcoming tough bureaucratic issues.

Of course, we could not close this obituary without mentioning that Manolis was the co-founder of the IEEE Mediterranean Conference on Control and Automation, being the *General and Program Chair* of the first IEEE Mediterranean Conference on Control and Automation that was held in Chania in 1993. Without his hard work and long hours in preparing and organizing the conference up to the fine detail, the conference would not have been a highly successful one which, in turn, led to establishing the “IEEE Mediterranean Conference on Control and Automation” as a highly respected – in the control system society – annual event.

Manolis leaves behind two children Antonis and Panos. He was always proud of their success in education. We give our condolences to them and share with them the grief of the loss of Manolis our friend and research collaborator.

Professor Nick Karkanias, (1948 - 2020) [In Memoriam]

**Emeritus Professor and Senior Research Fellow
Systems and Control Research Centre
School of Mathematics, Computer Science and Engineering
City University of London**



Ioannis Leventidis, University of Athens

Professor Nicos Karcanias was born in Mesolongi Greece in 1948, and was the beloved husband of Themis Karcanias, and cherished father of Alexandra Karcanias, and Aris Karcanias, his two children. He was a graduate of Mechanical and Electrical Engineering, Electrical Specialization of the National Technical University of Athens (1972). He completed his MSc and PhD degrees in Control Engineering at UMIST, England, in 1973 and 1976, respectively. He, then, completed a DSc at City University (1990). His last academic appointment was Emeritus Professor and Senior Research Fellow of Control Theory and Design in the School of Mathematics Computer Science and Engineering of City University of London.

During his tenure years at City University, he established the Systems and Control Centre, and he was Associate Dean for Research for the period 2001-2013. He was a Fellow of IET (IEE) and Ch.Eng (1991), a Fellow of IMA, and a Ch. Maths (1986), and Senior Life Member of IEEE (1996).

Nicos started his research at UMIST as a PhD student in 1973, under Professor A. G. J MacFarlane that was then continued at the University of Cambridge. During the period 1974 to 1980, he conducted research in the Control and Management Systems Group of the University of Cambridge as a Research Assistant and then Research Fellow, working on the development of an

algebraic approach to Geometric Control Theory of Linear Systems. In 1980, he joined the Department of Systems Science of City University London as a Lecturer and then the Electrical Engineering Department where he was promoted first to Reader in Control Theory in 1986, and to a personal chair in 1993 as Professor of Control Theory and Design. He established the Control Research Centre at City University in 1990 and subsequently the Systems and Control Research Centre in 2000, being the Director ever since. Since 2001, he was the Associate Dean for Research and Enterprise. He led the successful Research Assessment Exercise submissions, 2008 RAE and REF 2014 of the School to General Engineering. Nicos retired in December 2017. He was elected as Emeritus Professor, and then appointed as Senior Research Fellow (part-time appointment).

Nicos was Editor in Chief of the IMA Journal of Mathematical Control and Information since 2007, Associate Editor and member of the Editorial Board of IEEE Control Conferences (CDC and ACC during 1995 to 2018), and Associate Editor of the IFAC World Congress, serving on the editorial Board of the International Journal of Control. He was a member of "IFAC Linear Systems Committee", founding member of IFAC Workshops-Symposia on "System Structure and Control", Member of the European Control Council (UK representative) 2003-09, IPC member of The European Control Conferences (ECC03, ECC06, ECC09). He was College Member of EPSRC since 1995, and served as Reviewer/Evaluator for numerous EU and other research projects

Professor Nicos Karcanias' research had a fundamental impact in the area of Systems, Control Theory, Control Engineering and Applied Mathematics, with an applications dimension. The latter deals with the migration of mainstream control concepts and methods to explore Complex Systems problems, such as Global (Systems) Instrumentation, Integration of Design and Operations of Process Systems, Re-Engineering of Technological processes, etc. These have been developed through work in several EU projects. The two design aspects are closely interrelated, and applications have been the source of motivation for several basic research developments. Several new research areas have also been introduced, such as: Matrix Pencil Theory and Linear Systems; the study of Determinantal Assignment Problems; Approximate Algebraic Computations; Systems Instrumentation; and a new type of systems complexity - the family of Structure Evolving Systems. Significant contributions have been also made in Algebraic Systems Theory, Control Systems Design, Decentralized Control, and in the new family of complex systems - the System of Systems.