Academician Prof. Dr.-Ing. Dr.h.c. Prof.h.c. Athanasios G. Mamalis

Biography

Academician Prof. Dr.-Ing. Dr.h.c. Prof.h.c. Athanasios G. Mamalis received his first scientific award in 1959, when he was awarded with the *First Prize of the Greek Mathematical Society* upon graduating from the esteemed high school, 1st Prototype Gymnasium in Piraeus, Greece. Subsequently, he entered as a top student at the Mechanical and Electrical Engineering School of the National Technical University of Athens (NTUA), the leading University in Greece, and graduated as Mechanical and Electrical Engineer with Honors in 1964. After his obligatory military service in the Technical Corps of the Greek Army, in the beginning of 1966 he joined the Steel and Pipeworks Industry as *Chief Engineer* at Mannesmannröhren-Werke AG in Düsseldorf, Germany, and as *Technical Manager* at Solinourgia Athinon (Athens Steel Pipeworks) Ltd. in Greece, where he established the two large factories for large diameter spiral steel tubes and steel bath-tubes, in cooperation with Japanese Steelworks Nippon Kokkan Ltd. At the same time, he was appointed as *Part-Time Lecturer* for Plasticity and Metal Forming at the Chair of Manufacturing Technology of the NTUA.

By the end of 1972 he had moved more to the Academic sector. He obtained his M.Sc. in Mechanical Engineering/Applied Mechanics in 1973 and his Ph.D. with Honors, under the supervision of the famous Prof. William Johnson FRS, from the Victoria University of Manchester Institute of Science and Technology (UMIST), UK in 1975. His pioneering Ph.D. work on "Profile Ring-Rolling" has been patented by the Rolls-Royce Aircraft Engines Corporation for manufacturing rings in their Jet Engines. In summer 1975, he followed Prof. Johnson as *Visiting Professor* in the Department of Engineering of the University of Cambridge, UK, running the by then established High Strain-Rate Processing Laboratory (explosives, electromagnetics, etc). During his three years in Cambridge, he had an extensive research collaboration with the British Royal Ministry of Defense in the field of Hypervelocity Impact (ballistics, projectiles hitting targets, armory), and he started his cooperation with the Motorcar/Aircraft Industry in the field of Crashworthiness of Vehicles and Biomechanics. Meanwhile, together with Prof. Johnson, he published his first 6 books/monographs and several papers in Engineering Plasticity/Impact Mechanics/Crashworthiness of Vehicles, as indicated in his relevant list of publications. Furthermore, for over a decade beginning from 1973, he was *Technical Consultant in Metal Forming Machinery* (J. Banning Pressenfabrik AG, Hamm, Westfalen) in Germany.

In the autumn of 1978, he moved to Germany for two years, as *Visiting Professor* at the Institut für Fertigungstechnik und Spannende Werkzeugmaschinen (IFUM) of the Universität Hannover for the Academic Year 1978-79 and at the Laboratorium für Werkzeugmaschinen und Betriebslehre (WZL) of the RW Technische Hochschule Aachen for the Academic Year 1979-80 (also under the auspices of the Alexander von Humboldt Stiftung). He thusly considerably expanded his scientific research and industrial international collaboration in the Advanced Manufacturing sector, which aslo resulted in several relevant publications. Subsequently, for the Academic Years 1980-82, he was appointed as *Visiting Professor* for teaching and research in Manufacturing at the Department of Mechanical and Aeronautical Engineering at Carleton University in Ottawa, Canada, and this expanded his activities

towards the Energy and Enviroment sectors, with scientific collaboration and several published Monographs.

In summer 1982 he was simultaneously elected as:

(a) *Full Professor* at the Department of Mechanical Engineering and Engineering Mechanics of Michigan Technological University, Houghton, MI, USA. Besides his teaching activities, he organised and directed its Manufacturing Laboratory, and developed extensive research collaborations with numerous research projects, mainly with the American Automotive Industry in Detroit (GM, Ford, Chrysler) in the passive and active safety of cars, involving ferrous and non- ferrous metals, composites and other hybrid materials. He kept this position until the end of 1992.

(b) *Full Professor and Head of the Manufacturing Technology Division* (his former Chair of Manufacturing) in the School of Mechanical Engineering of the National Technical University of Athens (NTUA), Greece. He founded, and directed for almost 30 years, the highly modern and sophisticated *Laboratory of Manufacturing Technology (LMT)*, so far the largest Research Laboratory dedicated to Manufacturing and Materials Science and Engineering in Greece, and one of the most sophisticated worldwide. He became *Emeritus Professor* by the end of 2008.

(c) *National Representative* in the EU European Coal and Steel Community (ECSC) Research (CRT) and Development (CDT) Committees for 15 years until the end of 1997.

In these capacities, he acted as *Coordinator* of a large number of collaborative international research projects and he established, over the years, numerous academic (as *Visiting Professor*, *Member of the Scientific Committee* and *External Examiner* of Ph.D. Students), research/development and industrial collaborations (with signed MoUs and Scientific Cooperation Agreements) with USA (UC at Berkley; Texas A&M University -TAMU; Superconductivity Center, Houston University; UNReno; Georgia Tech.; Boeing; US Steel; etc.), UK, Germany (BMW; Mercedes Benz; Nordmetall GmbH; etc.), European Union (Airbus Industrie; Helicopter Industry; Sollac Steel Co.; etc.), Japan (Shockwave and Condensed Matter Research Center of Kumamoto University; Tokyo University; Oita University; Hitachi; Nippon Steel; etc), China (Qinghua University; Beijing University of Aeronautics; Beijing Institute of Technology; etc), Russia (Lavrentyev Institute of Hydrodynamics, Novosibirsk, Siberia; Kirensky Institute of Physics of RAS, Krasnoyarsk, Siberia; Kurchatov Institute, Moscow; etc), Ukraine (Bakul Institute of Superhard Materials of NASU, Kiev; NTU - Kharkov Polytechnic Institute, Kharkov; Institute for Single Crystals of NASU, Kharkov; Antonov Aircraft Co., Kiev; etc), Hungary (Budapest University of Technology; University of Miskolc; Bay Zoltan Applied Research Foundation, Budapest; etc), Poland (Poznan University; Krakow University; etc.), Bulgaria (University of Sofia) , Georgia (Research Center of Georgian Academy of Natural Sciences, Tbilisi), India (IIT Delhi; Annamalai University; etc), Qatar (TAMUQ), Cyprus, and so on. Furthermore, his contribution to the education of next generation researchers is well illustrated by the supervision and/or examination of almost 90 Ph.D. students worldwide, to date.

He established (as initiator and/or as a founding member) the:

- *Summer School on Applied Superconductivity*, held annually in Eger and Budapest, Hungary (1994-2000).
- *Japanese-Mediterranean Workshop on Applied Electromagnetic Engineering for Magnetic, Superconducting, Multifunctional and Nano Materials (JAPMED)*, held biennially worldwide (1999-today).
- *Euro Mediterranean Academy of Arts and Sciences (EMAAS)* (2008).
- *Project Center for Nanotechnology and Advanced Engineering (PC-NAE)*, a joint intiative of the Greek National Research Center for Scientific Research "Demokritos" and the Russian Research Center "Kurchatov Institute" (2008), which he is currently directing.

- *Shockwaves Cluster* (2012), involving current cooperation between Greece, Russia, USA, Germany, Japan, China, Hungary, Ukraine, and Turkey (and growing rapidly at the international level), which provides the opportunity to specialists from Universities, Research Centers, and Industry of various countries worldwide to establish cooperation and to share knowledge and experience in the broad area of the "Advanced manufacturing of advanced materials and structures", mainly associated with "High strain-rate phenomena and treatment under shock", focusing, in particular, on the relevant industrial sectors.

Prof. Mamalis received numerous Academic Degrees and Awards worldwide:

- *Elected Member of the Hungarian Academy of Sciences.*
- *Elected Member of the National Ukraine Academy of Sciences (Academic NAUK).*
- *Honorary Professor (multi).*
- *Honorary Doctor (multi).*
- *Receiver of the "M.F. Semko Medal", High Ukrainian Prize.*
- *Fellow/Member of International Scientific Organizations:* (Certified Mechanical and Electrical Engineer, Technical Chamber of Greece (TEE); British Cold Forging Group (BCFG), UK; Verein Deutscher Ingenieure (VDI), Germany;Verein Deutscher Eisenhüttenleute (VDEh), Germany; American Society of Mechanical Engineers (ASME), USA; International Union of Theoretical and Applied Mechanics (IUTAM); Society of Automotive Engineers (SAE), USA; Society of Manufacturing Engineers (SME), USA; The International Academy of Production Engineering (CIRP); International Cold Forging Group (ICFG); Superconductivity Society (Founder and Chairman); New York Academy of Sciences; European Ceramics Society (ECS); European Society Precision Engineering and Nanotechnology (EuSPEN) (National Node); International Group of Environmental Manufacturing (ICEM); European Network for Superconductivity (SCENET) (National Node); International Machine Tool Association (IMTA) (Council Member), Ukraine).
- *Editorial Board Member of International Journals:* (Journal of Materials Processing Technology, UK; International Journal of Mechanical Sciences, UK; Proceedings of the Institution of Mechanical Engineers, Journal of Engineering Manufacture, UK; International Journal of Advanced Manufacturing Technology, UK; International Journal of Crashworthiness, UK; International Journal of Production Engineering and Computers, Serbia; Journal of Education Systems, Ukraine; International Journal for Manufacturing, Science and Production, UK/Israel; Nanotechnology Perceptions, UK; Journal of Mechatronics and Intelligent Manufacturing, USA; Journal of Materials Sciences and Applications, USA; Journal of Production Processes and Systems, Hungary; Scholarena Journal of Nanoscience and Nanotechnology; SciFed Journal of Metallurgical Science; SciFed Journal of Polymer Science).
- *Citations:* (Who's Who in Greece; Who's Who in Engineering, American Association of Engineering Societies, USA; Who's Who in the World, Marquis, USA; Dictionary of International Biography, International Biographical Centre, UK; ABI 5000 Personalities in the World, American Biographical Institute, USA; European Who's Who; Hungarian Encyclopaedia, Hungary).

His published work to date (January 2018), covers the theoretical, experimental and sustainable industrial aspects of: *Mechanics; Manufacturing Technology; Precision/Ultraprecision Engineering; Nanotechnology; Ferrous and Non-Ferrous Materials Technology from Macro- to Nanoscale; Powder Production and Processing Technologies; Biomechanics/Biomedical Engineering; Transport /Structural Plasticity/Crashworthiness of Vehicles; Energy and Environmental Aspects*; *Safety and Defense*, consists of 32 *Books and Monographs*, 12 *Textbooks*, 550 *Papers in Refereed Journals and Conference Proceedings*, 2 *Patents*, worldwide.