

## Obituary: Professor Chris A. Papadopoulos 26 March 1956–17 December 2017

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Chris A. Papadopoulos, Professor at the Mechanical Engineering and Aeronautics Department, University of Patras, Greece, passed away on December 2017, at the age of 61 years old, after a 6-month struggle against leukemia. During his struggle to recover from his illness he stayed optimistic, as always, together with his family and the people close to him. It was only in the last few weeks that unexpected complications of the treatment got the better of him. The colleagues from the Machine Design Laboratory [1] of the Department of Mechanical Engineering Aeronautics, along with the communities of Mechanical Design, Computer

Aided Design and Rotordynamics, have lost a premier scientist and engineer, who has been an influential scholar over the past three decades.

Prof. Papadopoulos was born in Athens, on 26th March 1956. He entered in Mechanical Engineering Department, University of Patras, Greece, in 1974 as a freshman, and graduated 5 years later receiving the Diploma in Mechanical Engineering.

In his next phase, Prof. Papadopoulos served as Project and Consulting Engineer for Greek Industry in 1980s, and he started a long association with University of Patras, where he was appointed as Research Associate in 1980. Then, he joined Washington University, at St. Louis, United States as Visiting Scholar in Mechanical Engineering Department, where in 1987 he finalized his PhD thesis [2] in the field of Dynamic Analysis of Cracked Rotors, under the supervision of Prof. Andreas D. Dimarogonas.

In 1988, Prof. Papadopoulos was appointed Lecturer [3, 4] at the Department of Mechanical Engineering and Aeronautics, of University of Patras, Greece. Afterwards, he was acknowledged Assistant Professor and then Associate Professor at the same institution. He joined the European Joint Research Center, at Ispira, Italy, as Visiting Scientist for 1 year (2001–2002). He was elected Professor of Machine Design at the Department of Mechanical Engineering and Aeronautics, University of Patras, Greece, in 2010. He served this institution for many years as Director of the Division of Constructions and he was appointed Chairman of the Department from 2013 to 2017.

Prof. Papadopoulos chaired the research in the Machine Design Laboratory of the Department of Mechanical Engineering and Aeronautics on the objectives of machine design, rotordynamics, cracked structures, diagnosis and prognosis, and lubrication. He authored or co-authored over 90 scientific journal and conference papers and wrote three educational books in Greek which have become very popular among the Machine Design teaching community of higher education in Greece. For his scientific research, there are

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more than 1100 citations in international literature. Prof. Papadopoulos supervised and was member in the committees of 20 PhDs; he authored 30 educational and development projects, and he reviewed numerous scientific works for International Journals. Two of his PhD students are now University Professors.

Regarding his main contribution on the objective of rotordynamics, this can be identified in the field of cracked rotors. The concept of local flexibility introduced by a crack in a structure, was addressed by Prof. Papadopoulos [1] regarding its influence on dynamic behavior of beams and rotors, with major importance on the effects of coupling between axial, lateral, and torsional vibrations of cracked rotors and beams. Prof. Papadopoulos has tried to predict a more realistic form of the local flexibility matrix by imposing on the model some of these parameters. The main aim to this research is the adequate understanding of vibration characteristics of cracked rotors, which eventually lead to the development of crack diagnosis methods. His research attempts gave fruitful results, not only on the direction of the crack prediction but also on the prediction of the stability bounds of a cracked rotor.

Recently, Prof. Papadopoulos and his research group turned his expertise towards dynamics and stability of rotors standing on bearings with imperfections. Hydrodynamic oil film bearings are prone to different forms of instability such as oil whirl or oil whip, which could cause catastrophic failures in rotating components. The imperfect oil film bearings change the vibration response of rotors in a form like that when a crack is present. Under the supervision of Prof. Papadopoulos this research group has elaborated experimental and computational methods for the identification operating conditions of journal bearings and the study of rotor stability.

Further to his inspiring research, Prof. Papadopoulos was a motivating teacher. He introduced the concepts of open and group learning using modern computer and internet applications. By doing so, his students received feedback and input to their work immediately. He also led several practice-focused courses where students worked together

with him, instead of traditional presentation style lectures. Prof. Papadopoulos remains to the perception of his students as a rare example of an Academic focusing simultaneously both in Research and Teaching. Prof. Papadopoulos was a warm and generous teacher, a loyal colleague and a caring friend whom many people will long remember with gratitude and respect. He was outstanding in every single aspect of his life as a brilliant man, mentor, and teacher who had a great impact on the lives of many people and his students as well. Prof. Papadopoulos is tremendously missed, but he will continue to be a source of phenomenal inspiration and learning.

Prof. Papadopoulos had a family life with his wife Eleni, his two sons Anastasios, and Georgios, and his daughter Elpida-Sofia. The heartfelt condolences are extended from his students to his family, friends and colleagues. His legacy endures as he continues to serve as a role model for our community with his mark to be remembered.

### Books by Prof. Chris A. Papadopoulos

1. Chris A. Papadopoulos (2017) *Machine elements*, 3rd edn (in Greek). Tziolas Publications, Thessaloniki, Greece
2. Chris A. Papadopoulos (2012) *Computer aided design*, 2012. University of Patras Press (in Greek), Greece

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2. Papadopoulos CA (1987) Coupled vibrations of cracked shafts (in Greek). PhD dissertation, Patras 1987. <http://hdl.handle.net/10442/hedi/0551>. Accessed 20 July 2018
3. [http://www.mead.upatras.gr/lang\\_el/personnel/view/6](http://www.mead.upatras.gr/lang_el/personnel/view/6). Accessed 20 July 2018
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