In Celebration of Professor Adrian Bejan on his 70th birthday

Now, when Professor Adrian Bejan, honorary member of the Romanian Academy and Deputy Editor-in-Chief of the Stomatology Edu Journal, is celebrating his 70th anniversary, all his colleagues and friends would like to warmly congratulate him and also take this opportunity to show their deep appreciation and give you an idea of just how great this man is in various areas of engineering science and applied physics.

He was born on 24 September 1948 in Galați (Romania). At age 19 Bejan won a scholarship for the United States and enrolled in the Massachusetts Institute of Technology (MIT) in Cambridge, Massachusetts. Adrian Bejan specialized in cryogenics and heat transfer and completed all his studies at MIT. There, he managed to acquire all academic degrees at the same university (B.Sc. with Honors, 1972; M.Sc. with Honors, 1972; and Ph.D., 1975)

Between 1975-1976 he was a Lecturer and Research Associate with the Department of Mechanical Engineering at the Massachusetts Institute of Technology. Then, between 1976-1978, he was a Fellow of the Miller Institute of Basic Research in Science at the University of California-Berkeley. As of 1978 until 1984 he was an Assistant and Associate Professor with the Department of Mechanical Engineering at the University of Colorado. And from 1984 until 1989, he was a Tenured Professor with the Department of Mechanical Engineering and Materials Science at Duke University. And from 1989 until the present, he is a J.A. Jones Distinguished Professor of Mechanical Engineering at Duke University.

Professor Bejan's research covers engineering science and applied physics: thermodynamics, heat transfer, fluid mechanics, convection, porous media. His first book Entropy generation through heat and fluid flow (Wiley, 1982) shifted the attention of thermal engineers from the global calculation of the entropy generation rate of the entire system, considered as a 'black box', to the calculation of the local rates, clarifying the physical correlation between irreversible entropy generation and efficiency and paving the way to a new branch of Thermodynamics. It was in 1984 that he published his second book entitled Convection Heat Transfer (Wiley, 1984). That book focused on new research methods, which were totally different from the ones used back then to solve various problems. His innovative methods are based on the intersection of asymptotes, heatlines, and scale analysis. Later on, in 1988, the first edition of his textbook entitled Advanced Engineering Thermodynamics (Wiley, 1988) was also

published. That book was a combination between the theory of thermodynamics, engineering heat transfer and fluid mechanics. The author also introduced a new method of organization, namely the minimization of entropy generation.

In the years to come, more precisely between 1992-2006, professor Bejan published four more books, as follows: Convection in Porous Media (Springer, 1992, 1999, 2006), Heat Transfer (Wiley, 1993), Thermal Design and Optimization (Wiley, 1996) and Entropy Generation Minimization (CRC Press, 1996).

One of Adrian Bejan's greatest achievements is that he is the discoverer of the Constructal Law of design evolution in nature. Bejan has identified a basic Law of Physics that describes and predicts how design patterns emerge over time. The Constructal Law is his statement that there is a universal tendency (a phenomenon) toward design in nature, in the physics of everything.

Bejan has also written two popular science books targeting a general audience, as follows: first of all, Design in Nature: How the Constructal Law Governs Evolution in Biology, Technology, and Social Organization (Doubleday, 2012) and secondly, The Physics of Life: The Evolution of Everything (St. Martin's Press, 2016).

Professor Bejan has received 18 honorary doctorates from universities in 11 countries. In 2001 he was ranked among the 100 most highly cited authors worldwide in engineering (all fields, all countries) by the Institute for Scientific Information. You can read in his curriculum that Adrian Bejan is the author of 30 books and over 600 peer-referred articles. In August 2017, his h-index is 87 on Google Scholar and 60 on the Web of Science. But what you shall not find there is that several of his books and papers represent a break with the previously established knowledge and a proposal for a new 'paradigm'.

And then, in November 2017, there came the great piece of news from the Franklin Institute in Philadelphia. The Institute announced that professor Adrian Bejan would be awarded the 2018 Benjamin Franklin Medal in Mechanical Engineering. The Institute cited him for "his pioneering interdisciplinary contributions in thermodynamics and convection heat transfer that have improved the performance of engineering systems, and for the constructal theory, which predicts natural design and its evolution in engineering, scientific, and social systems."

Thus, since 2018, Adrian Bejan has joined the ranks of other geniuses such as Nikola Tesla, Marie and Pierre Curie, Thomas Edison, Albert Einstein, Stephen Hawking, Jane Goodall, and Bill Gates – all of them laureates of the Franklin Institute founded in 1824.

His accomplishments are not limited to the 'printed paper': many students are inspired every day by professor Bejan's lectures and seminars. We find his words very inspiring and worthy to follow: I have chosen to be happy. The idea is to look into the future with hope.

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