

Professor Andrzej M. Pawlak, Life Fellow IEEE

e-mail: prezes@ionstytutik.com



Professor Andrzej M. Pawlak, Ph.D., Life Fellow of IEEE, was born and educated in Poland. He obtained his M.S. in 1971 from the Technical University of Poznan. He did postgraduate study at the Warsaw University of Technology and obtained his Ph.D. in electrical engineering in 1981 from the Silesian University of Technology, Gliwice. His years of engineering and technology experience stem from his work at the Hitachi Poland and Japan manufacturing plants and his 28 years of R&D work on electromechanical and electromagnetic devices at General Motors and subsequently Delphi, all of which contributed to his solid background of industrial expertise. His works on stepper motors, magnetic sensors, rotary actuators, and fast acting solenoids are frequently cited worldwide. Most of Professor Pawlak 125 scientific publications and over 150 patents are related to sensors and actuators. His book *Sensors and Actuators in Mechatronics* published by Taylor and Francis in July 2006, is the culmination of his research findings and

award-winning solutions for industrial applications over the last 20 years. The book has been accepted as a student's textbook by several universities around the world and in 2012 was issued in Chinese language. A number of Pawlak's solutions have found industrial applications worldwide with significant scientific, engineering, and economical impact on the automotive industry and beyond, with tremendous overall business value exceeding 5 billion dollars to Delphi and General Motors. Professor Pawlak was honored with one of the highest number of individual awards in General Motors and Delphi history, including four prestigious "Boss" Kettering Awards for his accomplishments. He was the first individual from the automotive industry to receive the respectable Achievement Award of the Industrial Research Institute in 1996 that is perceived in the United States as the *Researcher of the Year* award.

In 1999, Professor Pawlak with a group of American scientists was invited to develop the paradigms of innovation in the new millennium. Since this experience, he has been permanently involved with innovation issues. He has developed the most effective method of niche innovation that features a unique set of tools of his authorship. The niche innovation method is capable of identify technology gaps and transform them into technological niches. He has discovered many technological niches, for example, the cancer markers niche or relays with magnetic lock niche, in which he has identified a set of unique technology solutions. The area of his niche technology experience includes intelligent materials, telecommunications, logistics, packaging, information technology, smart antennas and more. All discovered solutions are protected by patents. Based on the methodology and tools of niche innovation, he has created a unique portfolio of technologies for the automotive industry, composed of sixteen technology clusters, whose commercialization has brought about \$ 10 million annual income from license and has enabled the creation of several startups based on selected niche technology solutions. Professor Pawlak has developed the entire ecosystem of niche technology innovation method that allows recognition of technology niches with their strategic and unique solutions. Since 2011, he has been teaching this technique at Stanford University. As the President and CEO of the Vortex Innovation Consulting Group, he leads collaboration with a number of major USA and European organizations. Professor Pawlak is a frequent invited keynote speaker and panelist at professional conferences and congresses worldwide.

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