

Hannu Lauri Suominen was born in Inari, Finland in 1948. The school years were spent in the City of Lahti until his college graduation from the Lahti Lyceum for boys in 1969. He volunteered for The Finnish Air Force in 1969, and after Reserve Officer Training Corps (ROTC) he was promoted to First Lieutenant.

After military service, he studied in the University of Helsinki mainly mathematics, physics, chemistry and several biological sciences. Alongside his studies, he gave lectures in chemistry and biochemistry. His scientific studies on the Baltic Sea were funded by Walter and Andrée de Nottbeck Foundation for seven years. He completed his doctoral thesis in marine microbiology in 1980.

His interest in the origins of life led him to visit several research institutes and universities in Europe, the USA, Russia and the Peoples Republic of China. Experience in building research instruments for marine microbiology research led him to establish his first company, Biodata LTD, in 1979. In 1979, he was asked to work in Princeton, NJ, USA to establish a new venture in industrial microbiology. The results were sold to McDonnell Douglas, USA, in 1982. After rectifying the production of High Fructose Corn Syrup for Finnish Sugar LTD, purchased from Nabisco Brands CT, USA, and working for the international bio-industry for 5 years, he founded his first company in 1985.

From then on, his interest in the origins of life, growing of organic food and high energy physics, inspired him to invent the Zero Emission Technology family of products. During his 40 years of extensive industrial experience in international business, he has invented and registered 46 original patent applications, and over 150 patents have been issued in his name.

Education:

MSc in General Microbiology, Biochemistry and Radio-chemistry, University of Helsinki, 1978.

PhD in Marine Microbiology, University of Helsinki, 1980.

Scholarships:

Scholarships for marine microbiology research in the Baltic Sea, 1973 – 1980, by Walter and Andrée de Nottbeck Foundation.

Awards:

Pro Gradu Award of The Best Thesis of MSc, University of Helsinki, 1978

First Award for the Instructor and Trainer of Navigation from the Navigation Society of Helsinki, 1978

Diploma:

Diploma of Astronomical Navigation for Open Seas, 1975



Sailing Swan 47 "TILL" on the Northern Atlantic, Southport, CT, USA, 1980-1982.

Patents:

Dr. Suominen has 46 original patent applications and more than 150 international Letters of Patents for methods and equipment for various industrial applications. The developed technologies are especially in the fields of sustainable food production and security, bio-polymers, production of desalinated fresh drinking water, purification of municipal and industrial waste water for reuse, nonpolluting dry mining operations and purification of produced water from oil explorations. The developed technologies have been distributed to 45 countries by 300 deliveries, which include:

Biological Oxidation and Water Purification from farm waste for production of Natural Fertilizer to be used in Organic Farming;

Gravity Pipe Technology for production and transportation of desalinated fresh drinking water, and for zero emission, off grid energy;

Biodegradable Polymers for chemical-free cultivation;

Singlet Oxygen Generator for air and gas purification;

Jet Milling and Ion Particle Classification for Dry Mining Operations;

Thermal Chemical Cracking for elimination of municipal and industrial waste and production of emission-free energy;

Purification of Process Water from onshore and offshore gas and oil explorations, drilling and refining;

Purification of process water from chemical forest industry.

Publications:

Scientific publications in the fields of Applied Microbiology and Water Purification.

Other publications in the fields of Environmental Technologies, most of them described in the patent publications.

Languages: Native Finnish, fluent English

Military rank: First Lieutenant in the Finnish Air Force, 1981

Hobbies: Sailing, navigation, scuba diving, fishing, hunting, radio amateur, Member (1975 -) and Controller (1976 -1977) of the Finnish Society of Microbiologists.

Family: Two sons

Positions:

Industrial Entrepreneur and Innovator in International Business since **1979**.

2017 – present Wedex Finland LTD, FI, a Licensee Company for marketing of agricultural applications of Dr. Suominen's technologies in Finland; Scientific Adviser.

2014 – present Applied Physics Instruments API LTD, FI, a High Energy Company specialized in Sensors of Space Radiation for satellites and Gravity Pipe Technology for production of water and energy; Owner since 2019.

2006 – present Geniva LTD, FI, a Licensee Company for marketing of agricultural applications of Dr. Suominen's technologies; Majority Owner, CEO.

2003 – 2008 BCDE Group LLC, MN, USA, a Biotechnology Company focused in sales of Water Purification Technologies to mining, coal, oil and gas industries; Founder, Majority Owner, Chairman.

1999 – 2008 Universal Environmental Technologies Inc., CO, USA, established to convert used car tires to activated carbon with a California company; Founder, Owned by BCDE Group W. M. LTD, Chairman, CEO.

1999 – 2008 BCDE Group Colorado LLC, CO, USA, established to transfer the technologies of BCDE Group Waste Management LTD to US market; Founder, Owner, Chairman, CEO.

1996 – 1998 Micropulva LTD, FI, a Jet Milling Company, established to produce Nano particles for making biodegradable plastic film and elementary pure carbon; Founder, Majority Owner, Chairman. Shares were sold to a Belgian and to an Argentinean partner.

1994 – 2015 BCDE Group Waste Management LTD, FI, a Biotechnology Company for water purification and recycling of elements; Founder, Owner, Majority Owner 2000 – 2015, Chairman, CEO.

1993 – present HLS-Elektroautomaatik LTD, FI, an Electronic and Automation Company, builder of the first remote controls for the ECO-H₂O Water Purifier and for the Chemostor Bio-Oxidizers; Founder, Owner, Chairman, CEO.

1984 – 1985 Finnish Sugar PLC, FI; Project Manager of Technology Transfer of Alpha Amylase Enzyme to Finnish Sugar PLC from Nabisco Brands Inc, CT, USA.

1983 – 1984 Finnish Sugar PLC, FI; Production Manager of the first plant to produce enzymes for making High Fructose Corn Syrup and Sodium Gluconate. Project bought from Nabisco and sold later to Eastman Kodak Inc., USA.

1982 – 1983 Orion Diagnostica LTD, FI, a Pharmaceutical Company; Product development manager of Microbial Analyzers. Project sold later to McDonnell Douglas Inc., USA, to combine with instrumentation of Apollo Space Program.

1980 – 1982 Bactomatic Inc. Princeton, NJ, USA, a Microbial Analyzer Company; Manager of technology transfer and product development of Microbial Analyzers after Johnson & Johnson Inc., CA, USA, sold it to Orion PLC, FI.

1979 – 1993 Biodata LTD, FI, a Biotechnology Company transferring scientific research from University of Helsinki to biotechnology products: The first unique microbiology product developed was the Temperature Gradient Incubator. The company was also the first manufacturer of Biodegradable Plastics which were first sold to the People's Republic of China for chemical free agriculture. Other applied research for water purification, pulp and paper, enzyme production, plastic industries and for natural farming.; Founder, Majority Owner, Chairman, CEO.

1975 – 1979 University of Helsinki, Scientist, Lecturer in Chemistry and Biochemistry.

1971 – 2008 BCDE Invest LTD, FI, an Electronic Automation and Biotechnology Company which designed the first High Temperature Bio-oxidizers in 1993 and the first MUST – Electrochemistry Water Purifier in 1995; Owner, Chairman and CEO, 1985 – 2008.

