

Markus Pessa

* 21.11.1941 † 31.12.2022



Professor (Emeritus) Markus Pessa, a pioneer of semiconductor technology in Finland and a long-time Professor of Physics at Tampere University of Technology, passed away on 31 December 2022. Prof. Pessa made major contributions in the fields of solid-state physics, materials science and semiconductor technology over nearly four decades of professional activity. He was the founder and director of the Optoelectronics Research Centre (ORC), the cradle of the semiconductor and fibre laser industry in Tampere, until the end of 2009, when he retired from professional life.

Born in 1941 in Petsamo, Finland, he obtained a Master of Science degree from the University of Oulu in 1966, and a Licentiate degree in Physics, also from the University of Oulu, in 1970. In 1971 he was awarded the Doctor of Philosophy title by the University of Turku, where he also became a Docent in Physics in 1972. During the period 1970–1976 he held several post-doctoral research fellowships in the USA, England, and Germany. In 1976 he became Professor of Physics at Tampere University of Technology (later Tampere University), becoming a legendary figure in the Tampere education and research ecosystem.

Professor Markus Pessa was a world-renowned scientist in the field of molecular beam epitaxy (MBE) and optoelectronics, receiving numerous national and international distinctions. In 1996 he received the title of Knight, First Class, of the Order of the White Rose of Finland, awarded by the President of the Republic of Finland. In 2006 he was elected a Foreign Associate of the United States National Academy of Engineering, as the only Finnish citizen so far to receive such an honorary position. Other important distinctions include Professor of the Year (1998), elected by the Finnish Union of University Professors, Fellow of the Institute of Physics, London, and an Innovation Prize (2005) awarded by the New Technology Foundation for his contributions to the development of laser technology. In 2006 he also received a gold medal of merit from the City of Tampere. He was also among the first recipients of the Millennium Distinction Award in 2007 from Technology Academy Finland.

Markus Pessa became a member of the Finnish Academy of Science and Letters in 1994 and of the Finnish Academy of Technology in 1996. He was the recipient of the Academy Award for lifetime career

achievement awarded by the Finnish Academy of Science and Letters in 2016.

One of the most visible roles that made Prof. Pessa known to the public at large is his contribution to setting up the semiconductor and laser manufacturing industry in Finland. He was among the first in Europe to develop the all-solid-source molecular beam epitaxy (MBE) crystal growth method. During his leadership of the ORC group, he contributed to establishing five spin-off companies in Tampere, all linked to laser and semiconductor technology, gaining him the media title of “Mr. Laser”. His work and intellectual legacy are continued by the people he mentored, trained, and inspired. After his

retirement, three other spin-offs have been established by former ORC researchers and his disciples. The laser industry ecosystem around Tampere University consists of more than 250 highly skilled professionals and unique fabrication capabilities, with probably the highest density of laser technology companies in Europe.

Looking back over the years, in today’s world with the European Chips Act for semiconductors and the fierce global competition for deep tech, Markus Pessa’s seminal work in establishing semiconductor technology and photonic chip industry in Finland seems more impactful and relevant than ever.

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