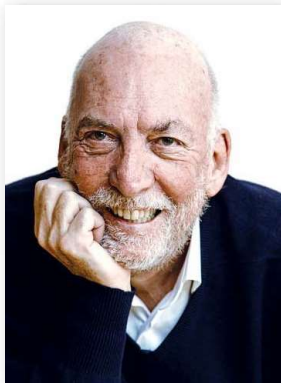


2017 IEEE MEDAL OF HONOR

IEEE Medal of Honor

Sponsored by the IEEE Foundation



Kees Schouhamer Immink

For pioneering contributions to video, audio, and data recording technology, including compact disc, DVD, and Blu-ray



Regarded as the most prolific contributor to the world's consumer electronics of the late 20th Century, Kees Schouhamer Immink fueled the “big bang” of digital electronics with pioneering coding techniques that have provided the foundation for all generations of optical storage media, from the compact disc (CD) to the Blu-ray disc (BD). A multitasking pioneer in technical areas ranging from coding theory and practice to electronics, mechanics, and optics, Immink has inspired generations of theorists and engineers and has made a lasting impact on how we handle data. Immink established the area of constrained codes as an important subfield of information and coding theory, and his myriad of practical coding constructions have accelerated the development of digital data storage technology. Immink's eight-to-fourteen modulation (EFM) technique for digital recordings improved playing time and was more robust to dust, fingerprints, and disc damage such as scratches, leading to the creation of the CD. The introduction of the CD in 1982 marked the beginning of the change from analog to digital sound technology. It quickly revived a sluggish music industry and essentially replaced the traditional music delivery methods of vinyl records and cassette tapes. This optical storage technology also provided low-cost, high-capacity, flexible data storage exceeding what computer hard drives could accommodate at that time.

Building on his EFM technology, Immink developed an advanced channel coding method called EFMPlus, which was integral to the design of the digital versatile disc (DVD). Offering

higher storage capacity than the CD, but at the same dimensions, the DVD is able to store any kind of digital data from computer software to video programs. Upon its introduction in 1995, the DVD became the fastest adopted consumer electronics product and generated billions of dollars for the film industry. While the DVD was quickly replacing traditional video cassettes, Immink was already working on further advancements to his original inventions by developing an even higher-density optical disc format. This work evolved into the BD, which can handle high-definition content suitable for feature films and video games.

Immink was also among the first engineers to conduct experiments with optical recordable and erasable media, bringing the mini disc, CD-R, DVD-R, and BD-R formats into the homes of consumers. He also added to realizing broadcast-quality recording products for consumers with his contributions to the digital video camcorder.

With approximately 500 billion CDs, DVDs, and BDs estimated to be in use today, Immink's inventions have impacted people all over the world. As recognition of Immink's role in the digital media revolution, his honors include an Emmy award from the U.S. National Academy of Arts and Sciences, induction into the Consumer Electronics Hall of Fame, and knighthood by Queen Beatrix of the Netherlands.

An IEEE Life Fellow, foreign member of the U.S. National Academy of Engineering, and recipient of the 1999 IEEE Edison Medal, Immink is president of Turing Machines, Inc., Rotterdam, the Netherlands.



Scope: For an exceptional contribution or an extraordinary career in the IEEE fields of interest.