



“Compact Disc: System Aspects and Design Considerations”

by

Dr Kees A. Schouhamer Immink

**Turing Machines Inc, Rotterdam, the Netherlands &
Institute for Experimental Mathematics, Essen, Germany**

Abstract:

An audio compact disc (CD) holds up to 74 minutes, 33 seconds of sound, just enough for a complete mono recording of Ludwig von Beethoven's Ninth Symphony at probably the slowest pace it has ever been played, during the Bayreuther Festspiele in 1951 and conducted by Wilhelm Furtwängler. Each second of music requires about 1.5 million bits, which are represented as tiny pits and lands ranging from 0.9 to 3.3 micrometers in length. More than 19 billion channel bits are recorded as a spiral track of alternating pits and lands over a distance of 5.38 kilometers, which are scanned at walking speed, 4.27 km per hour.

This year it is 25 years ago that Philips and Sony introduced the CD. In my lecture I will discuss the various crucial technical decisions made that would determine the technical success or failure of the new medium.

Biography:



Dr. Kees Immink, a native of the Netherlands, received his degrees from the Eindhoven University of Technology. He was with Philips Research Labs in Eindhoven from 1968 till 1998. He founded and became president of Turing Machines Inc. in 1998. He is, since 1994, an adjunct professor at the Institute for Experimental Mathematics, Essen University, Germany.

Immink designed coding techniques of virtually all consumer-type digital audio and video recording products, such as CD, CD-Video (1982), the Digital Audio Tape recorder, the Digital Compact Cassette system, DCC (1988), the Digital Versatile Disc, DVD (1996), the Video Disc Recorder, VDR (1998), and the Blu-ray Disc (2002).

He received widespread recognition for his many contributions to the technologies of video, audio, and data recording. He received a Knighthood in 2000, an ‘Emmy’ award in 2004, the 1998 IEEE Edison Medal, 1999 AES Gold Medal, and the 2004 SMPTE Progress Medal. He was named a fellow of the IEEE, AES, SMPTE, and IEE, was inducted into the Consumer Electronics Hall of Fame, and was elected into the Royal Netherlands Academy of Sciences and the US National Academy of Engineering. He served the profession as President of the Audio Engineering Society inc., New York, in 2003.

ALL ARE WELCOME! Date : 22 February 2008 (Fri)
(FREE ADMISSION) Time : 5.00pm – 6.00pm
Venue : NTU LT6 (North Spine 2, Level 2)
(click [here](#) for location)