



DEPARTMENT OF ELECTRICAL ENGINEERING

Graduate Seminar Guest Speaker

NAT OSTROFF
President and Chairman
Acrodyne

“A BRIEF HISTORY OF THE EVOLUTION OF HIGH POWER VACUUM TUBES FOR UHF TELEVISION AND HIGH ENERGY PHYSICS”

Friday, March 31, 2006

11:00 AM

Knox 109

ABSTRACT

Despite advances in Solid State RF technology vacuum devices remain the principle devices for the amplification of RF energy to ultra high power levels. This paper will cover the development of both gridded and non-gridded vacuum tubes from their first applications in early warning Radar systems to today's high power digital HDTV transmission systems.

Devices to be discussed include Tetrodes, Diacrodes, Klystrons and IOTs. The development of the Multi-stage Depressed Collector (MSDC) and its application in both Klystrons and IOTs will be presented. The relative energy efficiency of each class of device and how that drove technical developments will be reviewed.

The paper will also present the performance requirements associated with the new DTV transmission systems and their impact on amplifying device choices.

BIOGRAPHY

Nat Ostroff graduated from Drexel University with a BEEE degree and New York University with an MEEE degree. His first assignments in industry were with the Bell Telephone Laboratories where he was responsible for developing solid state measuring equipment using RF energy.

After several years at Bell Labs, Mr. Ostroff left to join American Electronic Laboratories (AEL) as a section head. At AEL he was responsible for the development of many solid state and vacuum tube power amplifying systems.

Mr. Ostroff left American Electronic Labs to form his own company, Acrodyne Industries Inc. As President of Acrodyne he led the development of a line of low and medium power TV transmitters for the Broadcast Industry. He sold his interest in Acrodyne after ten years and joined Comark Communications Inc. Comark was created to address the emerging high power UHF television industry. Mr. Ostroff served as President and CEO of Comark for over a decade and led the team in developing an industry leading line of high power UHF TV transmitters operating at power levels up to 250kw.

Comark was sold to Thomson Electronics of France and Mr. Ostroff stayed on to manage that business for several years. During that time he and his team were awarded a Prime Time “Emmy” by the Broadcast Industry for their pioneering work in the invention of the IOT based amplifying system.

Mr. Ostroff rejoined Acrodyne, now a public company, as its President and Chairman in 2000 and serves in that capacity today. He is also the Vice President for New Technology for the Sinclair Broadcast Group. Sinclair owns or operates over 55 TV stations in 40 markets around the United States.

Nat is a member of several professional organizations including the IEEE, SBE, AFCCE, TAU BETA Pi and ETTA KAPPA NU. Mr. Ostroff resides in Annapolis Maryland with his wife Nancy.