

**INDUSTRY APPLICATIONS CHAPTER
THE INSTITUTE OF ELECTRICAL AND
ELECTRONICS ENGINEERS INC
KOLKATA SECTION**



IEEE Lecture

(with the Department of Electrical Engineering, IEST Shibpur)

Topic	Birth of Power Theory in Alternating Current System
Speaker	Prof. Gautam Bandyopadhyay, Professor and Ex-HoD, Electrical Engineering Department, IEST Shibpur
Date & Time	16th October, 2019 (Wednesday), 4:00 PM - 5:00 PM
Venue	Seminar Room, Department of Electrical Engineering, Indian Institute of Engineering Science and Technology Shibpur, Howrah – 711103
Contact	Suvarun Dalapati (suvarundalapati@yahoo.co.in & Phone (Office): 26684561/62, ext. 594)

About the speaker:

Prof. Gautam Bandyopadhyay graduated in Electrical Engineering from the erstwhile Bengal Engineering College (presently IEST Shibpur) in 1976, and obtained the M. Tech. and PhD degrees from IIT Kharagpur, specializing in Power Systems. After working for a few years with M/s DCPL Pvt. Limited, he joined the Department of Electrical Engineering of Bengal Engineering College as a faculty member, where he is serving at present. Prof. Bandyopadhyay has several years of teaching and research experience, and has guided numerous PG and research students. His areas of research interest include Power Systems and its protection, and modern day aspects of Power Systems, development of various power theories – as applied to electrical systems etc.

Abstract of the talk:

The introduction of complex quantities like impedance and admittance in the year 1893 independently by Kennelly and Steinmetz ushered a new era in the theory of a.c. circuits. Steinmetz later speedily extended this theory to cover current, voltage and power. This theory enabled the electrical engineers to apply the existing laws used in d.c. circuits with some minor modifications and bring order to the seemingly chaotic world of electrical science applications in ac systems. It greatly simplified the process of analysis of various newly developed electrical apparatus thereby revolutionizing the electric industry. However, his method of calculation of complex power resulted in considerable confusion when this new idea was introduced. Even in recent times, when efforts are being made to develop new generalized power theories for non-sinusoidal currents and voltages, researchers often review Steinmetz's work and express their dissatisfaction and disapproval in a pronounced way. In this talk attempt will be made to provide a clear explanation of the confusion associated with the calculation of complex electrical power that has persisted in the scientific community to this day.

Duration: 1 hour (approx.)