

**POWER CAPACITOR  
FOR  
HARMONIC FILTER  
1992-2005**

Doc Type: IEEE Transactions on Power Delivery  
**Capacitor and Shunt Filter Unbalance Influence on the Electric System Harmonic Response**

Authors: Luis Sainz, Joaquin Pedra, Sergio Herraiz  
Ref: IEEE Transactions on Power Delivery  
Vol. 20, no 2, April 2005, page 1522  
Language: English  
Abstract: This paper studies the harmonic response of an electric power system in the presence of capacitor and shunt filter banks. The consequences in the harmonic resonant behavior of an unbalance in one of the equipment capacitors are analyzed.

Doc Type: IEEE Transactions on Power Delivery  
**A novel Active Power Filter for Harmonic Suppression**

Authors: Hurng-Liahng Jou, Jinn-Chang Wu, Yao-Jen Chang, Ya-Tsung Feng  
Ref: IEEE Transactions on Power Delivery  
Vol. 20, no 2, April 2005, page 1507  
Language: English  
Abstract: In this paper, a novel active power filter is proposed and implemented by using a voltage-source power converter with a series connected inductor and capacitor set. The power converter is controlled to generate a compensating voltage that is converted into a compensating current via the series connected inductor and capacitor set.

Doc Type: IEEE Transactions on Power Delivery  
**Power converter-Based Method for Protecting Three-Phase Power Capacitor From Harmonic destruction**

Authors: Jinn-Chang Wu, Hurng-Liahng Jou, Kuen-Der Wu, N.C Shen  
Ref: IEEE Transactions on Power Delivery  
Vol. 19, no 3, July 2004, page 1434  
Language: English  
Abstract: This paper proposes a new capacitor protection for resonant harmonic loads by applying a low capacity power converter to act as a virtual harmonic resistor to damp the resonance effect at the harmonic frequency and regenerates the real power back to the utility system at the fundamental frequency with minimum power loss.

Doc Type: IEEE Transactions on Industry Applications  
Title: **Designing Harmonic Filters for Adjustable-Speed Drives to Comply with IEEE-519 Harmonic limits**

Authors: F. McGranaghan and David Mueller  
Ref: IEEE Transactions on Industry Applications  
VOL. 15, no 2, March/April 1999, p. 312  
Language: English

Abstract: This paper discusses the application of the revised IEEE 519 harmonics standard to typical industrial facilities employing adjustable-speed drives (ASD's)

Doc Type: IEEE Transactions on Power Systems  
Title: **Passive Shunt Harmonic Filters for Low and Medium Voltage: A cost Comparaison**  
Authors: C. Kawann, A.E. Emanuel  
Ref: IEEE Transactions on Power Systems  
VOL. 11, no 4, November 1996, p. 1825  
Language: English

Abstract: The main conclusion of this paper is that for nonlinear loads in excess of 1MVA it is more economical to use filter centers connected on the 13.8 kV side.

Doc Type: IEEE Transactions on Power Delivery  
Title: **AC Filter Arrester Application**  
Authors: J. Harder  
Ref: IEEE Transactions on Power Delivery  
VOL. 11, no 1, July 1996, p. 1355  
Language: English

Abstract: This investigation considers both the continuous arrester heating caused by a mixture of harmonic voltages and the effect of temporary overvoltages in order to provide guidelines for the appropriate selection of an arrester voltage rating for this type of application.

Doc Type: IEEE 94 Summer Meeting presentation (San Fransisco, CA)  
Title: **Selecting Ratings for Capacitors and Reactors in Applications Involving Multiple Single-Tuned Filters**  
Authors: J.A. Bonner, W.M. Hurst, R.G. Rocamora from Cooper Power Systems  
M.R.Sharp from Trench Electric  
R.F.Dudley, J.A. Twiss  
Ref: IEEE 94 SM 457-2 PWRD  
Language: English

Abstract: This paper focuses on the selection of ratings for capacitors and air-core reactors used in multiple single-tuned harmonic filter configurations. Digital transient simulations of an example power system demonstrate the exceptionally high voltage and current stresses placed upon filter components in these configurations. Design guidelines for increasing the component ratings to account for the extra stresses are described. A comparison between traditional rating methods and the proposed methods are presented for the example system.

