

## عنوان مقاله:

Control and reduction of harmonics and their effects on power factor correction capacitors (PFC) in power grid

## محل انتشار:

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## خلاصه مقاله:

One of the types of distortions that arise in the form of waveforms is called harmonic, which is nowadays utilized by semiconductor elements and its widespread use in power grids which is the new cause of harmonic generation in addition to generators and transformers. Investigating its impact on electrical systems and equipment is important. Harmonics cause disruption to the system and equipment. One of these failures is the insulation failure of the capacitor banks and the increase in current and reactive power of the capacitor which directly or indirectly affects the capacitor which directly increases the current. And there will be an increase in tension and electrical losses. In this paper, ways to reduce the effect of harmonics on capacitors of harmonic power factor correction are presented. These effects can be mitigated by various methods, such as filtering in two passive filters, the active filter. This article first introduces the introduction of harmonics and their generating factors, as well as their impact on grid and power equipment. Then there are ways to control and reduce these harmonics and filters, which include active and inactive. In the next section, Hybrid Active, Hybrid Series and Parallel Hybrid filters are introduced. Then the frequency response modification of the system is expressed. The conclusion is expressed at the end.

## کلمات کلیدی:

Harmonic , Capacitors , Power factor correction , Filter

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