

## A Novel Idea to Benefit of the Load Side's Harmonics

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**Abstract :** This paper presents a novel idea to show the ability to benefit of the harmonic currents which are produced on the load side of the power grid. The proposed circuit contributes in reduction of the total harmonic distortion (THD) percentage through adding a high pass filter to draw harmonic currents with 150 Hz and multiple frequencies a and convert them to DC current and then reconvert it to AC current with 50 Hz frequency in order to feed different loads. The circuit has been designed, investigated and simulated in the MATLAB, Simulink program; the results will be assessed and compared the two cases: firstly, the system without adding the new circuit. Secondly, with adding the high pas filter circuit to the power system.

**Keywords :** harmonics elimination, passive filters, Total Harmonic Distortion (THD), filter circuit

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