

# **Etude Comparative de la Compensation Active par Action Sélective Par l'Approche FMV et Par la Théorie des Puissances Instantanées P-Q**

N. Hamouda <sup>1</sup>, K.E. Hemsas<sup>2</sup>, H. Benalla <sup>3</sup>, B. Babes<sup>2</sup>

<sup>1</sup> Welding and NDT Research Center (CSC), BP. 64, Cheraga, Algiers, Algeria

<sup>2</sup> Laboratoire d'Automatique de Sétif, Département d'Electrotechnique de Sétif 1, Sétif, Algérie

<sup>3</sup> Laboratoire d'Electrotechnique, Université de Constantine 1, Constantine, Algeria  
hammouda.nourou@yahoo.fr ; hemsas\_ke@univ-setif.dz; benalladz@yahoo.fr ; elect\_babes@yahoo.fr

## **Abstact**

This article presents a comparative study between two methods of active compensation by selective action of harmonics to minimize the total harmonic distortion factor (THD) of the current and voltage of the electric network, and consequently improve the power factor (PF). Both methods are based on the parallel active compensation of certain low frequency harmonics 5 and 7 which identification of the harmonics of references of the first method is through the approach the of Self Tuning Filter (STF) and the second is based on the theory of instantaneous power (P-Q). Selectively active compensation of harmonic current of the load 5 and 7 taken simultaneously Thereafter .The shapes of the signals and values of THD from the results of numerical simulations (Matlab/Simulink) developed demonstrates the efficiency and the best method of selectively active compensation.

## **Keywords**

PF, THD, Harmonics, Self Tuning Filter STF, Theory of Instantaneous Power PQ.