

# Etude Comparative des Techniques de Filtrage des Harmoniques de Courant

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**Abstract :** The problem of harmonic pollution in distribution electrical networks is becoming more and more worrying with the increasing use of nonlinear loads, several solutions were proposed to cure the problems generated by the harmonics, the power active filter is one of the most effective solutions vis-a-vis this problem. In our memory, we will begin with stating, as a general information, the basic definitions, as well as the study of the causes for purpose of harmonic pollution. Then, one presented the various means of mitigation against harmonic pollution, passive filter; active filter and hybrid filter... etc. After, we are interested much more in shunt filter active, we are presented the principle of operation of this last, the various algorithms of identification of the harmonics of references, two technique the control of the inverter of tension MLI and hysteresis, the regulation of the tension continuous, grace the Matlab-simulink software we are showed the effectiveness of the shunt active filter to compensation of harmonic with balanced and unbalanced rate. But undoubtedly it has a disadvantage, To cure the major disadvantage of the shunt active filter, we presented as first solution three methods of shunt active filter by selective action ' the selectivity of the desired harmonics is done containing the method , , , these method are study and compared with them. As second solution, we presented a hybrid filter type 'association series of a passive filter and a shunt filter active filter' the results of simulation of each solution show well the effectiveness of these techniques of solution.

**Keywords :** harmonic, non-linear charge, active filter, passive filter, hybrid filter, MLI, hysteresis, selective active filter, FMV, dq, pq