

Control strategy for shunt active filters on a heavily perturbed electricity network

Proliferation of nonlinear loads in power systems has increased harmonic pollution and deteriorated power quality. Current harmonics are one of the most common power quality problems. These problems are usually solved by the use of shunt active and passive filters. The use of a generic control strategy for a shunt active filter, i.e. suitable for single-phase three phases and polyphase, will reduce drastically undesired harmonic.

DESCRIPTION*

- A generic control strategy dedicated to shunt active filter
- This solution enables to get triphased system, well-balanced and sinusoidal wave current for an unbalanced and harmonic perturbed voltage source
- This control strategy relies on the distribution of active power absorbed both by the load and by the use of filters
- In case of proliferation of non linear loads, the power system is balanced on direct current voltage with unit power factor



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TECHNICAL SPECIFICATIONS

Perturbed network management	Unit power factor and neutral current close to zero
Limited number of technical exercise	Until -40% compared to the state of art (PQR...)
Ease of implementation	Locked loop circuit not required

COMPETITIVE ADVANTAGES

- General control strategy dedicated to filters:
 - Suitable for high and low voltage
 - Suitable for single and three phases
- Cost saving
- Robustness

APPLICATIONS

- Smart grids
- Isolated places powered by local energy sources
- Embedded network

INTELLECTUAL PROPERTY

- Patent pending

DEVELOPMENT STAGE

- Experimental proof of concept



LABORATORY



CONTACT

T. +33 (0)5 62 25 50 60
systemes@toulouse-tech-transfer.com
www.toulouse-tech-transfer.com