

Implementation of Synchronous Reference Frame Theory based Shunt Active Power Filter using DSP Controller

Summary:

- In this work, an attempt is made to develop an algorithm and investigate the performance of shunt active power filters in synchronous reference frame.
- The method decomposes currents responsible for instantaneous active and reactive powers, calculates components responsible for fundamental current generation and synthesizes the reference currents using 2 kVA laboratory prototype.

Conclusion:

- In order to confirm the effectiveness of the control algorithms, the approach has been tested through the simulation and experimental validation.
- Experimental test results are obtained using TMS320F28335 DSP.
- Both simulations and experimental results confirm that the used control algorithm for SAPF is simple and easy to implement.