

## **POWER QUALITY IMPROVEMENT USING FUZZY BASED STATCOM**

*Maddala Saibabu<sup>1</sup> & K. Kiran Kumar<sup>2</sup>*

*<sup>1</sup>Research Scholar, Department of Electrical and Electronics Engineering, S.R.K.R Engineering College, Bhimavaram, Andhra Pradesh, India*

*<sup>2</sup>Assistant Professor, Department of Electrical and Electronics Engineering, S.R.K.R Engineering College, Bhimavaram, Andhra Pradesh, India*

### **ABSTRACT**

*This paper proposes application of fuzzy logic controller to regulate 12-pulse statcom controller for mitigate voltage flickers and current harmonics. Selective interharmonic compensation is introduced to improve Statcom performance for Light Flicker (LF) compensation caused by implementation of arc furnace as load. This makes it possible to compensate only the interharmonics in a proper band around the fundamental frequency that mainly affects LF. The reference signal required for 12-pulse converter is regulated with fuzzy controller. The relevant effect is a reduction of the compensation power needed to obtain mitigations of LF from the source to be compensated. This proposed system is to be implemented in Matlab/Simulink under different control techniques as a comparative analysis.*

**KEYWORDS:** *Light Flicker, Fuzzy Logic, Arc Furnace, 12-pulse Statcom, SIF and Harmonic Distortion*

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