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### Patent Search

Invention Title	ARTIFICIAL INTELLIGENCE (AI) AND DYNAMIC VOLTAGE RESTORER (DVR) BASED EFFICIENT POWER QUALITY IMPROVEMENT SYSTEM
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**Abstract:**

Artificial Intelligence (AI) and Dynamic Voltage Restorer (DVR) Based Efficient Power Quality Improvement System ABSTRACT The dynamic voltage restorer is an innovative technique for addressing voltage drops and spikes in power systems. The Dynamic Voltage Restorer consists of injection transformers, a voltage source inverter, pass and a battery bank. In order to address the problem of voltage variations on the grid, the dynamic voltage restorer injects three-phase current at the same time that voltage varies. Power quality has a substantial impact on the dependability of energy for residences and businesses. In the worst-case situation, power quality concerns such as sags, swells, harmonic distortion, and other disturbances can destroy electronics and machinery, necessitating costly repairs. To preserve the reliability and efficacy of an electrical system, all forms of problems must be discovered and rectified as rapidly as possible. Various forms of power tools are utilized to overcome these obstacles. Dynamic Voltage Restorer is the most effective and efficient technology used in power distribution networks at present. The suggested system has fewer switching parts and compensatory capacities than currently used compensators. A dynamic voltage restorer is a series-connected power electronics device that uses an injecting transformer to detect and inject voltage components. The system is hence less concerned with power quality. In this situation, soft computing technologies, such as fuzzy logic, are not utilized. Utilizing a novel fuzzy rule base, the system will be able to address recurrent power quality issues. MATLAB/SIMULINK is used for modelling and simulation purposes.

**Complete Specification**

**Description:DESCRIPTIONS**

As global digitalization progresses in an effort to make things faster and more efficient, nonlinear loads and electricity consumption must increase. Every appliance and electronic gadget needs a constant, sinusoidal, and high-frequency power source. In practice, a considerable number of nonlinear loads are connected to this distribution network, degrading the quality of the total power supply. This has quickly led to a decline in the high power quality received by many users. Voltage management and power enhancement are required. The importance of power quality for electric utilities and large commercial and industrial power consumers is growing. When the voltage approaches a perfect sinusoid at the correct frequency, the power quality is deemed to be good. This number can be used to evaluate power supply. In order to operate more sensitive loads, automate more processes, and improve output quality, customers require more power. Standard criteria for power quality include low harmonic distortion (THD), stable frequency, symmetrical three-phases, pure sinusoidal wave form, and a consistent root-mean-square (rms) value. In order to ensure optimum power quality, the values of these parameters must remain within the regulatory limits. The most obvious and expensive effects of low power quality are reflected in large commercial and industrial activities, notably when goods or equipment fail. Reduce the amount of voltage distortion caused by harmonics to increase power. Utilizing a range of controllers, such as artificial neural networks, sliding mode controls, and digital variable resistors, the suggested method achieves the lowest possible overall harmonic distortion. It is essential to regulate the voltage precisely, which includes achieving the correct magnitude and amplitude. As more and more equipment consume large amounts of electricity, power quality has become an issue requiring increased attention. When manufacturers encounter PQ challenges, the quality of their products deteriorates, their machines break down, and production is suspended until the problem is remedied. These are some of the most common problems that arise when PQ is a concern. Mishandling or causing damage to industrially sensitive loads might cost significantly more than any PQ concerns they may cause. As power

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#### Application Details

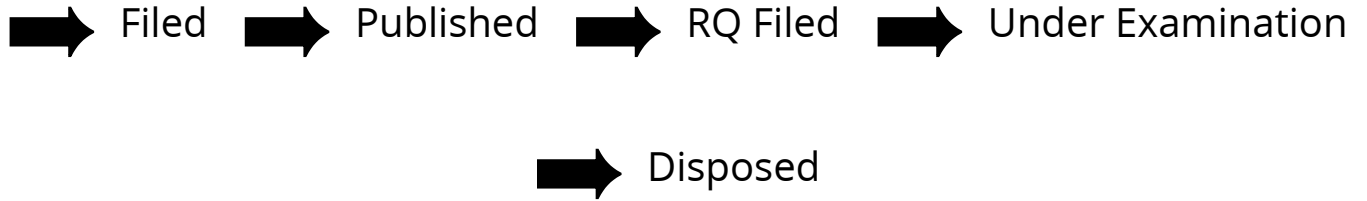
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APPLICATION STATUS

## Awaiting Request for Examination

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