

First Author

Javad Jamali

He received his Master of Science in electrical engineering from the School of Engineering and Computer - Tehran University in 1968.

He has 50 years of experience in the industry and high-power rectifier. His latest field of work was high-current rectifiers for supplying the electrolyzer, which face high harmonic currents.

His technical skills are high power rectifiers, multi-phase transformers, and harmonic currents.



Ten years ago, he started researching the current harmonics in his power electronic lab. The result was a patent registered in USPTO under US10218173 entitled AC/DC converter for feeding non-linear high-power loads with reducing harmonic currents.

During the study on a patent, it was necessary to calculate the harmonic currents in the different configurations because the conventional knowledge studies only a constant current waveform. Therefore, the research focused on the harmonic currents' calculation.

Finally, after months the problem was solved by using the Fourier series theory, for the first time. The implementation of Fourier series diagnoses misinterpretations and incorrect assumptions in the conventional power theory.

The result was the presentation of

“A Novel Approach to the Electrical Power Definition”.

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Co-Author

Mehrdad Jamali

An electrical engineer with 11 years of experience as an electrical design engineer in oil and petrochemical plants and marine vessels.

His work includes PLC, control systems, Basic, Detail and FEED design, Electrical analyses, electrical equipment sizing, and electrical-related codes and standards.

His contribution to the recent approach consists of phase-shifting transformers and harmonic currents concerning the electrolysis in the petrochemical plants and power definition in the sinusoidal system.



PATENT

A patent registered in USPTO under **US10218173** entitled AC/DC converter for feeding non-linear high-power loads with reducing harmonic currents.

<https://patents.google.com/patent/US10218173B2/>

