

## **Abstract**

In this paper, an adaptive nonlinear control based on the average state space model within a switching period of a single phase AC/DC dual boost is proposed. First, currents decoupling is achieved through an input/output linearization. Then, an adaptive control is applied in order to ensure the perfect tracking between the controlled variables and their references, on the one hand, and to compensate the parametric variations, on the other hand. The performance of the proposed method is demonstrated by simulation results using Simulink/Matlab

**Key words:** single-phase AC/DC dual boost, averaged model, input/output linearization, adaptive nonlinear control.