

عنوان مقاله:

Modeling and Control of An Electric Arc Furnace

محل انتشار:

بیست و یکمین کنفرانس بین المللی برق (سال: 1385)

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خلاصه مقاله:

Because Electric Arc Furnace (EAF) is one of the biggest energy consumers in the steel plants and also could cause harmonic and flickering effects back to the network utility, there have been extensive researches in modeling and control of them. Having the computer model of EAF helps power quality studies and development of control improvement strategies. In this paper the Model of EAF with its subsystems, namely the electrical system, the electrode positioning dynamics and disturbances are analyzed separately. Robust P-type current and impedance controllers are designed and compared with together. The simulation results show that unlike current control, impedance control does not suffer from the interaction effect between three phases and has more efficient ability in disturbance rejection in arc furnace circuit.

کلمات کلیدی:

Electric Arc Furnace (EAF), Electrode positioning system, Power quality

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