

Methods and properties of quadratic iterative learning control for semi-conductor processes under different perturbations

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EWMA-based methods are dominantly employed in R2R control in present semi-conductor industries although the EWMA filtering has limitations in more detailed handling of noisy signals. In this study, quadratic iterative learning control (QILC) combined with the Kalman filter has been evaluated as a replacement of EWMA R2R control for tighter reduction of QV variations. Different types of stochastic disturbance are considered in the bias in a linear static model, and QILC algorithms are derived. The performance of the QILC methods was compared with that of the EWMA R2R control method.