

Sampled-Data Control for Fuel Cell Systems

Authors : H. Y. Jung, Ju H. Park, S. M. Lee

Abstract : A sampled-data controller is presented for solid oxide fuel cell systems which is expressed by a sector bounded nonlinear model. The sector bounded nonlinear systems, which have a feedback connection with a linear dynamical system and nonlinearity satisfying certain sector type constraints. Also, the sampled-data control scheme is very useful since it is possible to handle digital controller and increasing research efforts have been devoted to sampled-data control systems with the development of modern high-speed computers. The proposed control law is obtained by solving a convex problem satisfying several linear matrix inequalities. Simulation results are given to show the effectiveness of the proposed design method.

Keywords : sampled-data control, fuel cell, linear matrix inequalities, nonlinear control

Conference Title : ICEET 2015 : International Conference on Electrical Engineering and Technology

Conference Location : London, United Kingdom

Conference Dates : August 20-21, 2015