Sampled-Data Control for Fuel Cell Systems

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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.

 ${\it Keywords: } {\it sampled-data \ control, \ fuel \ cell, \ linear \ matrix \ inequalities, \ nonlinear \ control}$

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