**Abstract**

 Based on the passivity theory, the problem of designing non-fragile *H1* control for a class of networkedcontrol systems (NCSs) with the plant being a switched system, is presented. The NCSs under considerationis modeled by considering the network induced imperfections like transmission delays, packet dropouts asa single time-varying delay. The network status is assumed to vary based on sojourn probabilities and theseprobabilities are known a prior. The controller is designed including stochastic fluctuations in its gain matrixby considering the Bernoulli distributed white sequence along with time-varying probability measures. Thekey steps in this method is to construct an improved Lyapunov-Krasovskii Functional (LKF) and to utilizereciprocally convex technique. The sojourn probability-dependent sufficient criteria is obtained to ensure the closed loop, mode dependent switched NCSs to be robustly stochastically stable based on the combined*H*∞and passivity performance. The effectiveness of the proposed method is illustrated through an example