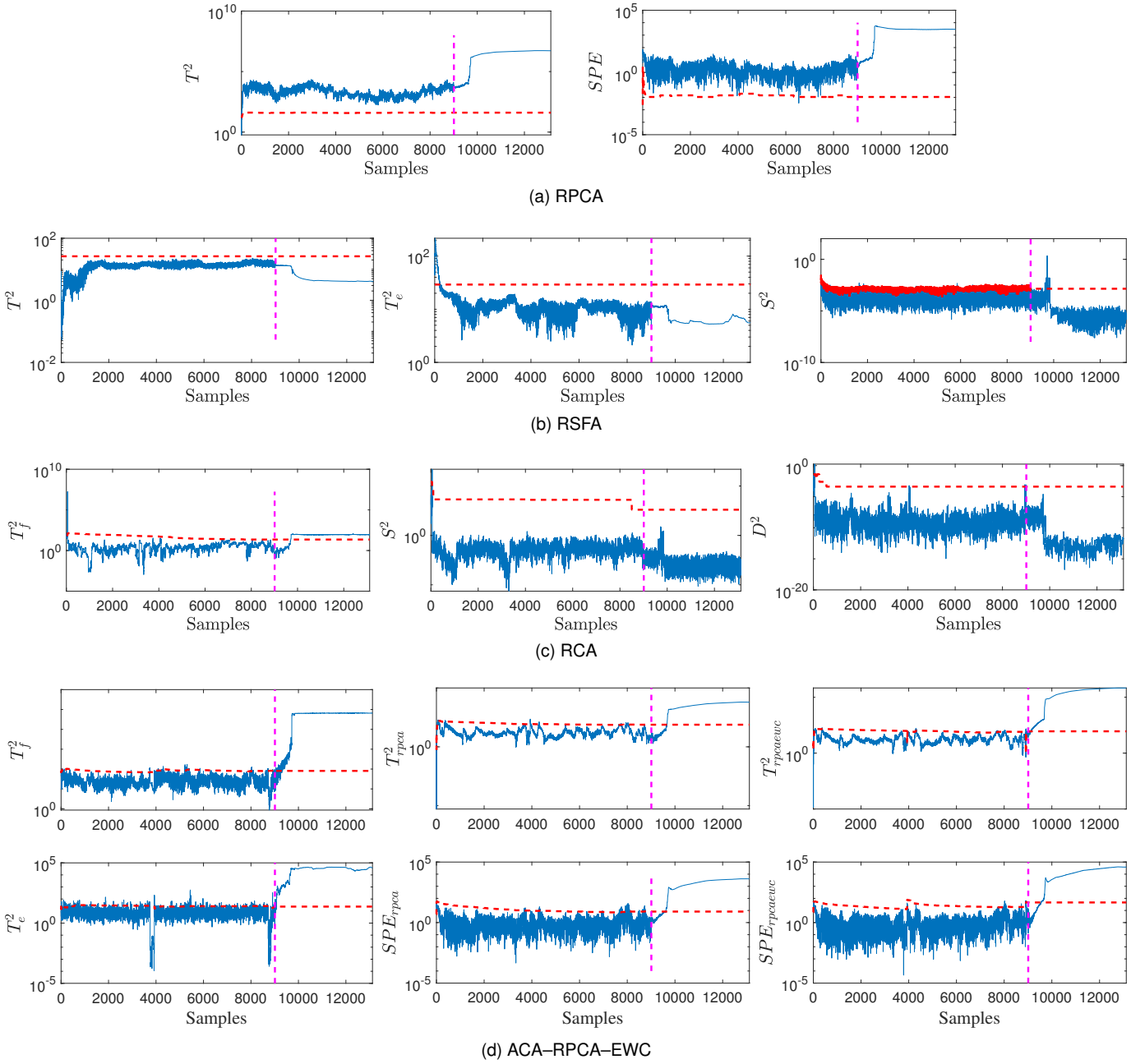

Fig. S7. Monitoring charts of Case 6: (a) The FAR of RPCA approaches 100% and RPCA is not appropriate for multimode nonstationary processes; (b) SFA cannot separate the normal variations and the real fault, and the FDR is close to 0; (c) There exists detection delay for RCA, and the FDR of T^2 is 83%; (d) The proposed ACA–RPCA–EWC algorithm can detect the fault accurately. The FDR of $T^2_{rpcaewc}$ is 97.20%, which indicates that the significant information of the previous coal is preserved by EWC and beneficial for delivering excellent monitoring performance for other similar modes. However, the FDRs of T^2_{rpca} and SPE_{rpca} are less than 86%.