

## Design of Permanent Sensor Fault Tolerance Algorithms by Sliding Mode Observer for Smart Hybrid Powerpack

**Authors :** Sungsik Jo, Hyeonwoo Kim, Iksu Choi, Hunmo Kim

**Abstract :** In the SHP, LVDT sensor is for detecting the length changes of the EHA output, and the thrust of the EHA is controlled by the pressure sensor. Sensor is possible to cause hardware fault by internal problem or external disturbance. The EHA of SHP is able to be uncontrollable due to control by feedback from uncertain information, on this paper; the sliding mode observer algorithm estimates the original sensor output information in permanent sensor fault. The proposed algorithm shows performance to recovery fault of disconnection and short circuit basically, also the algorithm detect various of sensor fault mode.

**Keywords :** smart hybrid powerpack (SHP), electro hydraulic actuator (EHA), permanent sensor fault tolerance, sliding mode observer (SMO), graphic user interface (GUI)

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